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Barriers To Attention -Deficit /Hyperactivity Disorder Intervention Implementation In The Public School Setting

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BARRIERS TO ATTENTION-DEFICIT/HYPERACTIVITY DISORDER INTERVENTION IMPLEMENTATION IN THE PUBLIC SCHOOL SETTING

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ABSTRACT

The present study examined the impact of potential barriers on commonly recommended school-based interventions for children with Attention-Deficit/Hyperactivity Disorder (ADHD). The interventions included were the Daily Behavioral Report Card, token reinforcement, response cost, instructional style changes, and classroom environment changes. The potential barriers studied were the time teachers spent on an intervention, the level of parent support, the level of child difficulty, the acceptability of an intervention, the perceived fairness of an intervention, and the level of administrative support. The study also examined the potential relationship between teachers' stress levels and the number of barriers they perceive to these interventions. Previous research has looked at the barriers to intervention implementation in the home setting, but there has been a gap in the research that addresses problems that may hinder teachers in implementing commonly recommended interventions. The present study examined responses from 62 teachers that were recruited from one Midwestern state and one Southern state. Data was collected through an online survey that was sent out to teachers' public domain email and was analyzed using Repeated Measure ANOVAs and Pearson Correlations. There were significant differences across interventions on each potential barrier. Teacher stress was also positively correlated with the number of barriers they perceived. Additionally, the level of teacher stress positively correlated with the barriers of time, level of child difficulty, perceived fairness of an intervention, and the level of administrative support.

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CHAPTER 1

INTRODUCTION

Children and adolescents in the state of Indiana are required to be enrolled in school from the age of seven until they graduate, turn 18, or turn 16 and meet the requirements of the exit interview (Indiana Department of Education, 2007). Preschool and kindergarten are not mandatory, but children are eligible to enter kindergarten at the age of five in most states. Indiana schools are required to operate for a minimum of 180 days, and elementary schools are required to operate for a minimum of five hours a day (Indiana Department of Education, 2007). This totals approximately 900 hours a year that a teacher spends in contact with students. However, each state has their own laws regarding the age requirements and amount of time children and adolescents are required to be in school.

Attention-Deficit/Hyperactivity Disorder (ADHD) is diagnosed in approximately 3% to 7% of school-aged children. Children who are diagnosed with this disorder generally experience both academic and behavior related problems. Based on the frequency of ADHD, it is estimated that there is at least one child in every classroom who will meet criteria for this disorder (Fabiano & Pelham, 2003; Levin & Shanken-Kaye, 1996), with prevalence rates that are generally higher for boys than girls (American Psychiatric Association, 2000).

Teachers have a lot to do in a classroom; in addition to teaching a variety of topics, they are also in charge of keeping order in the classroom. This can be a hard task if any of their

students have ADHD. These children are often non-compliant with commands that they would rather not do (e.g., stay on task, finish class work, remain seated) and can require extra time and energy from the teacher. Those with hyperactive symptoms tend to be disruptive in the classroom and both hyperactive and inattentive types can lag behind academically. Students with hyperactive or combined type ADHD are often impulsive in their behaviors and find it hard to delay gratification, which makes it hard to slow down in their work or play. They may not worry about accuracy as much as they do about finishing an assignment. They will often speak out in class without permission and talk with their neighbors because they lack the control to wait until an appropriate time to speak (Selikowitz, 2004). Because of these problematic behaviors, teachers can spend valuable class time reprimanding or giving individual attention to a child with ADHD to help increase academic performance.

Research has shown that there are a variety of behavioral interventions that are useful for students with ADHD. Since teachers spend a vast amount of time with their students, it is important for the field of psychology to be aware of the obstacles that teachers face that might hinder their usage of school-based interventions.

Statement of Problem

From a search of the relevant literature, it appears that there are no studies on the barriers to implementation of treatment for students with ADHD in schools. In the current study, this gap is bridged in the literature by examining the factors that may hinder teachers from implementing common ADHD interventions.

Purpose Statement

There are two specific purposes to this study. The first is to consider whether there are differences in the level of barriers to interventions commonly recommended for students with

ADHD. This was done by administering a survey to teachers regarding their perceptions of interventions that are empirically based or thought to be best practice. The second is to examine the relationship between teacher stress level, as measured by the Teacher Stress Inventory (Fimian, 1987), and the number of perceived barriers to specific interventions.

Research Questions

Seven research questions were addressed in the present study. The first six questions addressed the differences across interventions for each individual potential barrier. The last question was about the possible relationship between the overall level of teacher stress and the number of barriers they perceive to interventions.

1. Is there a significant difference across interventions based on the potential barrier of time spent on the intervention?
2. Is there a significant difference across interventions based on the potential barrier of the level of parent support?
3. Is there a significant difference across interventions based on the potential barrier of the level of child difficulty?
4. Is there a significant difference across interventions based on the potential barrier of the acceptability of an intervention?
5. Is there a significant difference across interventions based on the potential barrier of the perceived fairness of an intervention?
6. Is there a significant difference across interventions based on the potential barrier of the lack of administrative support?
7. Is there a significant correlation between teacher stress levels and the number of perceived barriers?

Definitions

The following terms are defined below as they were used in this study:

1. *Attention-Deficit/Hyperactivity Disorder (ADHD)* is a diagnosis defined by the American Psychiatric Association (APA; 2000) that includes behavioral symptoms of inattention, hyperactivity, impulsiveness, or a combination of these.
2. *Intervention* is defined as a recommendation based on empirical review or accepted as a best practice method for assisting students with ADHD in behavioral and academic capacities.
3. *Best practices* are instructional or behavioral approaches and strategies that are accepted by practitioners to be valid.
4. A *barrier* is any person, object, idea, or situation that prevents an intervention from being utilized.

CHAPTER 2

LITERATURE REVIEW

Researchers have investigated factors that impact parent and caretaker treatment compliance (Kazdin, 2000; Kazdin, Holland, & Crowley, 1997; MacNaughton & Rodrigue, 2001). These studies have included the perceived barriers to treatment, but no one has yet examined the barriers to implementing treatment in a school setting, despite the fact that teachers can expect to have one to three students with a diagnosis of ADHD in their classroom (Levin & Shanken-Kaye, 1996). Research has shown various school-based interventions to be effective in improving the behavior and academics of students with ADHD (Chafouleas, Riley-Tillman, & Sassu, 2006; DuPaul, 2007; DuPaul & Weyandt, 2006; Fabiano & Pelham, 2003), but these researchers have only looked at the effectiveness of these interventions on one or two students, and the interventions were implemented by a trained researcher or by a teacher who was receiving direct support from a professional. To this point, no one has asked teachers what would hinder them from implementing these interventions on their own. An intervention may be shown to be empirically valid, yet it may not be practical in an everyday classroom setting.

Diagnosis of ADHD usually occurs during mid to late adolescence, with symptoms appearing before age seven. To obtain a diagnosis of ADHD, an individual must meet criteria for six or more of nine symptoms of inattention or six or more of the hyperactivity-impulsive criteria over the past six months (APA, 2000). Examples of inattention criteria include “often

fails to give close attention to detail," "often does not seem to listen when spoken directly to," and "is often easily distracted by extraneous stimuli." Examples of hyperactivity and impulsivity include "often fidgets with hands or feet or squirms in seat," "often talks excessively," "often has difficulty waiting turn," and "often acts as if 'driven by a motor'". Some symptoms from the lists for inattention or hyperactivity-impulsive must be observed before the age of seven and must be present in more than one setting (e.g., school and home). There must also be clinical impairment in social, academic, or occupational functioning. In addition, symptoms cannot be accounted for by another mental disorder. Children with ADHD are statistically more likely than children without ADHD to have a diagnosis of Oppositional-Defiant Disorder, Conduct Disorder, mood disorder, or anxiety disorder (August, Realmuto, MacDonald, Nugent, & Crosby, 1996). As a result, children who are diagnosed with these disorders generally have a difficult time staying out of trouble at school, tend to be disruptive in the classroom, and lag behind academically.

There are four types of ADHD (APA, 2000). In ADHD Combined Type, both inattentive and hyperactivity-impulsive symptoms are predominant. In the Predominantly Inattentive type, criteria are met for inattentiveness, but not hyperactivity-impulsiveness. Predominantly Hyperactive-Impulsive type occurs when criteria are not met for inattentiveness, but are met for hyperactivity-impulsivity. Individuals with Not Otherwise Specified Type have an onset occurring after age seven or experience significant impairment with inattention, but do not meet full criteria based on the DSM-IV-R.

While symptoms of ADHD may be present during infancy or during a child's preschool years, the unique demands of the classroom environment often increase the severity of symptoms (Freeman, 1976). Children with ADHD can be highly distracted, even by their own thoughts,

and when placed in a classroom where there is a lot going on in the environment and where independent work is expected, they can be problematic and disruptive (Cooper & Bilton, 1999). Because of their poor attention and impulsive behaviors, they can often forget instructions, work too slowly or too fast, leave work sloppy and incomplete, avoid school tasks, or get frustrated easily (O'Regan, 2005). The high comorbidity rates with Oppositional Defiant Disorder (30-65%), Conduct Disorder (10-25% of children and 25-50% of adolescents), and Learning Disabilities (approximately 30-50%) can magnify a child's academic and behavioral problems (Rief, 2005). Teaching students with ADHD can be a very demanding job, and constant interruptions and movement in the classroom can cause the teacher to feel frustrated and angry (Pfiffner, 1996).

Teacher Variables

In most cases, teachers are the first to recognize a child's problem and recommend evaluation. Schools are often the setting in which diagnostic symptoms are evaluated, and teachers are often called upon to provide feedback on their observations of ADHD-type behaviors (Robin & Bosco, 1981). Cohen, Kasen, Brook, and Struening (1991) researched the sources from which parents seek advice about their children's emotional and behavioral problems outside of a mental health program and found that, out of a sample of 457 parents, teachers were the source most parents turn to for advice. Parents reported going to teachers over physicians, psychologists, clergy, social workers, psychiatrists, mental health centers, and other sources. The authors noted that most parents did consult a physician, but only discussed behavioral and emotional problems in the context of a medical problem.

Researchers have found that the level of parent stress can become a barrier to treatment for their children (Kazdin, 2000; Kazdin et al., 1997; Kazdin & Wassell, 1999) and predict the

length of treatment (Kazdin & Mazurick, 1994; Kazdin, Mazurick, & Bass, 1993). These studies found that the parent's personal stress could impact the treatment their children received. Students spend hours in school each week and the current study attempts to examine whether teacher stress could have a relationship to potential barriers for interventions for students with ADHD in the school setting. Weiskopf (1980) discussed sources of stress for special education teachers that could relate to regular education teachers as well. Teachers can experience work overload when they deal with their class planning, communicating with parents, and planning individualized education programs (IEP) for students. A lack of perceived success can impact a teacher's level of stress. While working with students with special needs, teachers can fall into the trap of focusing on the problem and overlooking any progress, which can impact their self-esteem in a negative way. Working long hours and having to constantly supervise a student, as well as a high student-to-teacher ratio, can also be a source of stress. Weiskopf also discussed how lack of program structure and being required to provide emotional support for students five to six hours a day could be draining.

Fimian (1987) surveyed 226 experts over five summers to determine the relevance of 49 stress items to the overall concept of teacher stress. The participants were given a modified version of the Teacher Stress Inventory and were asked to rate the relevancy of each item on a 4-point Likert-type scale (1 being "not relevant" to 4 being "very relevant"). Of the 49 items that were rated, 28 met or exceeded their cutoff for "quite relevant," and 21 fell slightly below their standard but were all considered to be relevant. Examples of items that were found to be sources of stress for teachers included a heavy workload, lack of preparation time, a fast paced school day, discipline problems in class, authority rejected by students or staff, having to continually monitor behavior, and teaching poorly motivated students.

Geving (2007) gave twelve public high school teachers an open-ended survey asking them to identify student behaviors that caused them stress. The teachers came up with 96 student behaviors that they regarded as causing stress. After removing repetitive items, 46 items were incorporated into a questionnaire. To validate the questionnaire, 128 teachers from 44 different schools were given the survey along with a survey to measure perceived stress. Results indicated that 24 items from the student behavior survey significantly correlated with teachers' perceived stress. Some of these student behaviors included not listening, asking the teacher to repeat instructions because they were not listening, talking to other students when the teacher is talking, refusing to do what the teacher asks, failing to bring necessary books and supplies to class, trying to finish homework in class the day it is due, and talking instead of doing assigned quiet work.

Greene, Beszterczey, Katzenstein, Park, and Goring (2002) studied the subjective level of stress in teachers who teach students with ADHD. Participants included 64 general education teachers from 27 schools in the Boston suburban area. The school system was able to place one student who had been diagnosed with ADHD by a physician or mental health professional into each teacher's class for one year in order to study the teachers' reactions to teaching a student with ADHD. The authors attempted to obtain a comparison control for each student, but were only able to recruit 38 control students. The teachers were given the Student-Teacher Tension Checklist (developed by the authors) at the beginning of the school year to measure specific behaviors that the teachers found frustrating. The Index of Teaching Stress was given in the late fall and then in early spring to assess the teachers' subjective level of stress in response to a specific student. The teachers were also given the Teacher Report Form at two times during the year, and direct classroom observations were made by trained observers. Greene et al. found that the teachers rated teaching students with ADHD as significantly more stressful than teaching

students without ADHD, but that their stress was individualized. Teachers reported higher stress levels when they were dealing with students with ADHD who displayed oppositional/aggressive behavior or social impairment as compared to ADHD students who did not display those behaviors. Through direct observation, the authors found that teachers engaged in significantly higher rates of negative interactions with students with ADHD than with those who did not have the disorder. The authors indicated that because there was a wide range of scores reported in the assessments, the levels of stress depended on the unique interaction of a teacher with students with ADHD who display a wide range of behavioral problems.

Interventions

Although behaviorally based interventions have been shown to effectively treat ADHD, the most widely researched treatment for children and adolescents with ADHD is psychotropic medication (DuPaul, 2007). Swanson, Lerner, and Williams (1995) reported that over one million children within the United States were taking a stimulant medication for ADHD, with the most common drug being methylphenidate (Ritalin). However, they found that 8%-25% of children with ADHD do not respond to stimulant medication. In a review of empirically based treatments, Barkley (2004) reported that four classes of psychotropic drugs (stimulants, noradrenergic reuptake inhibitors, tricyclic antidepressants [TCAs] and antihypertensive agents) have been proven useful in the management of ADHD symptoms. Banaschewski, Roessner, Dittmann, Santosh, and Rothenberger (2004) discussed alternatives to stimulant treatment for ADHD. They suggested the use of non-stimulant medication (atomoxetine, TCAs, Bupropion, and other antidepressants) when stimulant medication has not been effective, if there are comorbid disorders such as anxiety or depression, or when there is an elevated risk for side effects with stimulants. Research has also supported a combination of medication and

psychosocial interventions as being more beneficial than either intervention alone. DuPaul, Barkley, and Connor (1998) suggested that the greatest benefit of stimulant medication was in its "theoretical possibility of maximizing the effects of concurrently applied psychosocial and education treatments (e.g., behavior modification and academic tutoring)" (p. 510). For the purpose of the current study, only behaviorally based interventions will be assessed.

Daily Behavioral Report Card

Daily Behavioral Report Cards (DBRCs) are known by many names (home notes, home-school notes, good behavior notes, etc.) and are often used as a method of monitoring behaviors and keeping communication between parents and teachers. Chafouleas et al. (2006) noted that there is a lot of flexibility in the use of DBRCs. They researched the self-reported use and acceptability of DBRCs among a nationwide sample of teachers. The authors originally sent out 1,000 surveys out of a random sampling of 5,000 preschool to high school teachers. Only 123 surveys were returned, with 45% of the respondents coming from an elementary school background, 37% from high schools, 28% from middle schools, and 6% from preschools. Eighty-four percent of the respondents taught general education, and class sizes ranged from 5 students to 26 or more. The authors found that 64% of the respondents had used a form of DBRC, and teachers were most accepting of this tool when they rated behaviors alone (without student input) and when using it without the removal of a tangible item as punishment for the students.

Jurbergs, Palcic, and Kelley (2007) studied the use of home-school notes with six African American elementary students who had been diagnosed with ADHD. The authors used a multiple baseline design in which they randomized the treatment of a home-school note with response cost and the home-school note without response cost. In the response cost phase, the

student was given a note at the beginning of each day that had five smiley faces. A line was drawn through a smiley face for each incident of off-task or disruptive behavior that the student exhibited during the morning work period. The student could earn points for each instance of "completing work satisfactorily" and "using class time well," in addition to a point for each smiley face left at the end of the period. The home-school note without the response cost phase was the same, except the student could earn, but not lose points. The students' mothers and teachers were then surveyed for their view of the interventions. The results indicated that teachers appreciated the small amount of effort and time it took to complete the note. All the mothers stated that they would recommend the intervention to others and all respondents believed that it was effective for their child/student. Overall, the parents and teachers preferred the home-school note used with the response cost, though both interventions were reported to be effective.

Token Reinforcement and Response Cost

Token reinforcement and response cost interventions have also been used for ADHD. Token reinforcement requires giving a reward for appropriate behaviors, while response cost is giving an initial reward in a pre-set amount and then taking away parts of the reward for each inappropriate behavior that is being targeted. Rewards can be varied (food, toys, special activities such as reading a book, or special privileges such as being the first in line or erasing the blackboard), allowing a teacher to pick the reinforcement that works best for a particular child (Maag, 1999). Carlson and Tamm (2000) investigated whether there was a difference in the effectiveness of response cost and token reinforcement on academic performance and motivation. Forty-four students participated in this study; half had been diagnosed with Combined Type ADHD and were currently on medication, while the other half were students

without ADHD who acted as a control. Medication was monitored and there was an 18-hour washout period before the experiment took place. Students were randomly assigned to either a reward group in which they were given ten cents for every correct answer, a response cost group in which they were initially given forty dimes and lost one for every incorrect answer, or a no reward/no cost group in which no incentive was given. Students completed a high-interest task and a low-interest task. Results indicated that the response cost group had the highest increase in performance, but lower self-ratings and motivation. Performance increased more overall on the high-interest task versus the low-interest task. ADHD students performed lower than the control group when no reward was offered.

Carlson, Mann, and Alexander (2000) investigated whether there was a difference in the impact of reward, response cost, or no contingency on math tasks with 40 children diagnosed with ADHD. The students were instructed to correctly complete as many math items as they could as fast as they could. The students were assigned to one of the treatment levels and told to complete their first task. Any rewards or response cost would be based on the number of items that were right. Any reward for the second task would be based on the speed of completion regardless of the number correct. The results showed a slight increase in speed and accuracy when a reward was on the line regardless of whether the students were trying to earn or keep a reward. However, the response cost group had higher accuracy than the other two groups. In the students' self-report on motivation, the reward contingency had a higher positive effect on motivation.

Fabiano and Pelham (2003) used a baseline method to examine using rewards to decrease disruptive behavior of an eight-year-old boy diagnosed with ADHD. The teacher was already using a token reinforcement intervention, allowing the child to gain a token each day to trade in

for a reward at the end of the week. The target behaviors were based on class rules and defined as finishing school work in the time provided, following directions, working quietly, cooperating with peers and adults, and staying on task. Goals of increasing appropriate behaviors were set, and at the end of each day the student met with the teacher to see how well he followed the rules. Baseline intervals were collected using the teacher's current intervention. The student was observed and compared to a control child; behaviors were coded as either on-task or disruptive. During the intervention phase, the time between earning rewards was shortened to give the student the opportunity to earn a reward daily. The teacher was also encouraged to give regular feedback on the student's behavior throughout the day rather than at the end of class. Immediate feedback was given on any failure to meet a goal, which was defined as three or more violations of class rules. During the intervention period, the student's disruptive behaviors decreased significantly and fell within the range of classroom norms.

Miranda, Presentacion, and Soriano (2002) found similar results. Fifty-two children with ADHD and their teachers were chosen for this study. Twenty-nine students (26 boys and 3 girls) were included in the experimental group. Each teacher of a student in the experimental group attended a session about the nature of ADHD and its impact on behavior and learning. They were also trained in behavior modification (positive reinforcement, token system, and so forth). They learned how to adapt their current instructional style to ADHD students, modifying how they gave feedback and directions. The teachers were instructed to set up a token system with their students. The students helped make classroom rules and met with their teacher to discuss the importance of the rules. Teachers also trained their students to evaluate their behavior based on the rules. The teachers offered a weekly prize based on the attainment of goals that were decided upon by the whole class. The researchers found a significant difference between the

experimental and control groups on behavior ratings and academic achievement. Students in the treatment group improved in both areas and received higher teacher ratings on behavior.

Classroom Environment and Instruction Style

By simply changing a student's environment, a teacher can also create change in academic and behavioral performance. Classrooms themselves are built in a way that can promote certain behaviors. There may be irrelevant academic requirements, excessive structure or lack of structure, over- or under-stimulation, or any combination of these. Most students have the capacity to be flexible and can operate under such conditions, but students with ADHD may not be able to function in certain environments and become disruptive as they seek out ways to fit into their environment (Maag, 1999).

One way to facilitate learning and reduce behavioral problems is to seat the student away from distractions and close to the teacher (Cooper & Bilton, 1999; Goldstein & Goldstein, 1998; Johnson, 1992; Maag, 1999; O'Regan, 2005; Pfiffner, 1996). Moving a student closer to the teacher and away from distracting peers can increase compliance and on-task behavior. In addition, it is important to keep a student away from wall seating where classroom materials or workstations may be located. These areas are often equipped with distractions (windows, class games, markers, toys, etc.) that would be hard for an ADHD child to ignore (Goldstein & Goldstein, 1998). Seating a student closer to the front also allows the teacher to keep a closer eye on the progress he or she is making in seatwork. If seating near the teacher is not possible, the teacher can move around while giving instruction and monitor students as he or she walks. Individual desks or small tables at which only one student can sit are optimal for reducing distractions, but if the classroom is supplied with tables that seat several students, it is especially important for the teacher to be able to monitor (Pfiffner, 1996). If possible, the teacher should

set aside a special area away from other students in a distraction-free zone where a student with ADHD can go to complete independent work (Cooper & Bilton, 1999).

The way a teacher gives instructions can also be modified to increase on-task behaviors and academic performance. Using a "cue" word every time the teacher prepares to say something important will help students with ADHD realize that they should pay attention (Cooper & Bilton, 1999; Goldstein & Goldstein, 1998; Maag, 1999). Using a phrase like "Listen up!" consistently before giving instructions allows students to recognize that the teacher is expecting them to pay attention. It is also important to keep instructions simple and precise (Cooper & Bilton, 1999; Goldstein & Goldstein, 1998; Lerner, Lowenthal, & Lerner, 1995; O'Regan, 2005; Pfiffner, 1996; United States Department of Education, 2004). Children with ADHD typically do not respond well to lengthy instructions. Teachers can be mindful of their delivery and provide both verbal and written instructions for students (Goldstein & Goldstein, 1998; United States Department of Education, 2004). In addition, after instructions have been given to the class, the teacher can stop by and have the students repeat the instructions as they understand them regardless of whether or not they have started the task (Cooper & Bilton, 1999; Goldstein & Goldstein, 1998).

Theoretical Base of Interventions

All of the empirically validated interventions talked about in this study stem from an operant conditioning theory of behavior modification. During the 1950s, B.F. Skinner became worried about the educational practice in the schools and believed that operant learning procedures could be utilized in the improvement of educational practice (Snelbecker, 1985). Teachers and educators began reinforcing the appropriate behaviors they saw in their classroom with "tokens" or "rewards" rather than "reinforcing" the inappropriate behaviors with their time

and attention. The token economy is based on operant conditioning theory and relies on the positive reinforcement of behaviors by only awarding appropriate behaviors. The response cost system utilizes both positive and negative reinforcement principles by taking away or adding tokens to shape appropriate behaviors. Most uses of the Daily Behavioral Report Card are also based within operant conditioning, though the reinforcements can happen in the home and/or school setting. While these techniques were developed primarily in the special education setting, they soon had their advocates for use in the general education classroom. While the best practice interventions do not stem directly from a "pure" behavioral theory, Snelbecker (1985) argued that instructional styles and the classroom environment are "eclectic" forms of behavioral theory. By placing a student in a certain part of the classroom, a teacher is hoping to reinforce positive behaviors and discourage negative behaviors. A teacher's teaching style is normally based around positive and negative feedback and students learn by the tone of voice, words used, and pace of instruction and students are shaped by the variations teachers use. For instance, moving a child to the front of the room, a teacher can remove distractions and increase positive behaviors which are tied back to negative reinforcement. Teachers can also add repetitions to their instructions, elicit responses back from the students, and add verbal feedback for appropriate behaviors to increase positive classroom interactions which can be related to positive reinforcement.

Factors Related to Treatment Implementation

While researchers have investigated the factors that create barriers for the individuals that implement treatment (Kazdin, 2000; Kazdin et al., 1997; MacNaughton & Rodrigue, 2001), little is known about the problems that hinder the implementation of interventions outside of a clinical setting. Many school-based recommendations are supported in the empirical and best-practices

literature, though there is an absence of literature on the factors that might inhibit their implementation.

In response to his review of the token economy, Kazdin (1982) summed up the question that can be applied to all interventions: "The primary question is whether the token economy can be implemented effectively outside the context of demonstration, or research projects which include special features to sustain integrity of treatment and to overcome institutional obstacles" (p. 441). Witt (1986) advocated that in addition to evaluating the fundamental effectiveness of an intervention, it is also important to consider the time required to implement it, the theoretical orientation of the intervention, and the extent to which it is disrupting the natural order of the classroom, which he termed ecological intrusiveness.

Time Factors

The time it takes to implement and maintain an intervention can impact a teacher's perceived acceptability of an intervention, which in turn can be a barrier to implementation. Witt, Elliott, and Martens (1984) examined 180 preservice and student teachers' opinions of the acceptability of praise, home-based reinforcement, token economy, ignoring the behavior, response cost, and timeout interventions. A case scenario describing a behavior problem with an applied intervention was randomly assigned to each participant. After reading his or her case description, each participant completed the Intervention Rating Profile to measure the respondent's acceptance of the used intervention. Results suggested that the amount of teacher time required, severity of the behavior problem, effects on other children, and teacher skills required to implement the intervention all impacted the acceptability of the intervention.

In a similar study, Elliott, Witt, Galvin, and Peterson (1984) investigated teachers' rating of acceptability for positive interventions and negative or reductive interventions. Each

intervention set was divided up by the complexity of the intervention. Positive interventions used were praise (low complexity), home-based reinforcement (medium complexity), and token economy (high complexity). Negative interventions included ignoring (low complexity), response-cost lottery (moderate complexity), and seclusion time-out (high complexity). An intervention was classified as requiring a low amount of teacher time if it took less than 30 minutes a day to maintain the intervention, a medium amount of teacher time if it took one to two hours to maintain, and a high time requirement if it took more than two hours to start up the intervention and more than one hour a day to maintain it. Results indicated that teachers preferred the more complex interventions for the more severe behavioral problems, and positive interventions were shown to be more acceptable than negative interventions. In addition, teachers rated low teacher time interventions as more acceptable than those with high time requirements.

Parent Involvement

Parent involvement has been broadly defined, and there are different recommendations in the literature for whether or not parent involvement can be considered a barrier or a source of help. The United States Department of Education (2004) encourages parent involvement in planning what intervention strategy to use and how to implement it. They also recommend that teachers collaborate with parents to monitor student progress both at home and in the school. Layne (2001) found in a study of treatment acceptability that teachers had a higher acceptability rating of classroom interventions when there was parent involvement. However, parents can present a challenge when dealing with students with ADHD. Often teachers only communicate with parents when there is a problem with a student. Parents can become defensive and claim

that the school is the teacher's "territory" and the teacher should be able to handle the problem without parent involvement (Levin & Shanken-Kaye, 1996; Pfiffner, 1996).

Behavior Severity

The research on the impact of symptom severity on treatment follow-through and effectiveness has shown mixed results. Brown, Borden, Wynne, Spunt, and Clingerman (1988) researched treatment adherence among 71 children diagnosed with attention deficit disorder. The children were randomly assigned to a three-month plan of either cognitive therapy plus a placebo medication, cognitive therapy in addition to methylphenidate, methylphenidate with attention control, or a placebo medication plus attention control. The Children's Checking Task (CTT) was used as an indicator of the severity of the problems with attention along with a measure of academic achievement. Results indicated that children with lower rates of compliance had more impaired concentration and attention and had greater difficulties in self-control.

Kazdin and Mazurick (1994) examined child, parent, and family factors that predict dropping out of therapy among children referred to treatment for oppositional, aggressive, and antisocial behaviors. They extended a previous study (Kazdin et al., 1993) to examine whether factors that predict dropping out of treatment would differ based on early or late treatment drop out. The child domains included antisocial behavior and other emotional and behavioral problems, academic dysfunction, and social behaviors. Results indicated that early dropouts were characterized by family factors and child factors (more severe and chronic antisocial behaviors, lower IQ, academic delays, and contact with antisocial peers). In addition, child history of antisocial behaviors, IQ, poor adaptive functioning at school, having a younger mother, and living in a household headed by a nonbiological parent predicted later dropout.

However, parent domains were not reliable in predicting later dropout (Kazdin and Mazurick, 1994).

Kazdin and Wassell (1999) sampled 200 children who were referred for oppositional, aggressive, and antisocial behavior problems in order to examine the factors that influence positive therapeutic change. The authors predicted that the level of child dysfunction as well as socioeconomic disadvantage and parent psychopathology and stress at the time of the intake would predict the level of therapeutic change at the end of treatment. The results indicated that higher levels of these factors led to lower therapeutic improvement. In contrast, MacNaughton and Rodrigue (2001) found that the severity of child behavior problems was not significantly associated with parent compliance with treatment recommendations.

Acceptability

The perceived acceptability of a recommendation can be viewed as a barrier to implementation; if an intervention is not seen as acceptable, a teacher is less likely to implement it in the classroom. Martens, Witt, Elliott, and Darveaux (1985) examined the influence of behavior problem severity, the skill, time and effort it takes to implement an intervention, and modality of case presentation on teachers' judgments of the acceptability of school-based interventions. They gave 54 regular and special education teachers the Intervention Rating Profile for Teachers (IRP-15) to examine the reported acceptability of sending children to the office and making them stay in during one recess period versus a response-cost intervention (taking away slips of paper to signify the reduction of recess time). Teachers were also given the Semantic Differential Scale to assess intervention acceptability. Results showed that interventions were more acceptable when applied to the more severe behavioral problem. The

response cost intervention was also seen as more acceptable than sending the child to the principal.

Chafouleas et al. (2006) studied the reported use and acceptability of Daily Report Cards. They found that most of their participants (64%) had used the Daily Report Card in some form and generally found the tool to be acceptable and useful for multiple purposes (communication, changing behavior, and monitoring behavior).

McGoey and DuPaul (2000) investigated preschool teachers' ratings of acceptability for token reinforcement and response cost interventions. They gave two teachers the IRP-15 to measure the acceptability of the response cost and token reinforcement interventions used with preschoolers. Both teachers rated the token reinforcement intervention as acceptable and beneficial. The teachers also indicated that the response cost intervention was acceptable, though the response cost intervention was slightly more acceptable overall.

Perceived Fairness

Teachers' perceived "fairness" of an intervention has rarely been focused on in the literature, even though teachers' opinion of the fairness of an intervention to other students in their classroom could potentially be a barrier to their decision to implement a technique. Jayanthi, Epstein, Polloway, and Bursuck (1996) surveyed 708 general education teachers about their views on the acceptability of classroom accommodations for students with disabilities and their perceptions of their responsibility for making the adaptations, location of test administration for students with disabilities, helpfulness and ease of making the accommodations, communication with the parents of students with disabilities concerning adaptations, fairness of accommodations for other students in the class without disabilities, and specific adaptations used with students without disabilities. Results from the survey indicated that 47.1% of the teachers

were responsible for making the testing adaptations and 35.9% made them in conjunction with the special education teacher. Responses also indicated that 64.8% of the sample communicated with the student's parent about accommodations. Nearly 67% of the respondents indicated that they did not feel it was fair to make testing accommodations only for students with disabilities.

Administrative Factors

Administrative support in the school system can impact what methods of teaching and classroom management are used. Broughton and Hester (1993) examined the effects support from school administrators and the community had on teacher acceptance of two classroom interventions. The authors gave 84 teachers packets that contained a case description of a fictitious administration and community system as well as a description of two children experiencing behavioral and academic problems. The systems described were broken up into four groups: high-support administrators/low support community, high-support administrators/high community support, low-support administrators/high-support community, and low-support administrators/low-support community. The interventions consisted of a token reinforcement system and time-out. Teachers were asked to rate the intervention on a 5-point Likert scale. Results indicated that teachers preferred the token reinforcement system when there were higher levels of community and administrative support.

DuPaul (2007) looked at interventions for ADHD and commented about the current state and future directions of research on school-based interventions. One part of his suggestion included a focus on treatment integrity and acceptability. Based on his own research, DuPaul suggested that six factors influenced the degree to which an intervention is accurately used in a classroom setting:

> (a) resources (e.g., time and money) needed for implementation; (b) number of steps (i.e., complexity) to the intervention; (c) teachers' beliefs about the treatment's potential effectiveness; (d) feedback provided to the teacher regarding appropriate implementation; (e) the match between teaching style and intervention; and (f) teachers' readiness of motivation to intervene. (p. 189)

Several interventions have been shown to be effective in impacting the behavior and academic performance of students with ADHD. Many factors have been discussed that can potentially impact the implementation of these interventions. However, in a broad-based search using Academic Search Premier, ERIC, Health Source: Nursing/Academic Edition, MasterFILE Premier, MEDLINE, PsycARTICLES, PsycINFO, and TOPICsearch through EBSCOhost, only 12 articles were found using the search terms "school-based intervention" and "barrier" and only one pertained to the use of school-based interventions for ADHD. In a review of the literature, DuPaul (2007) noted that there was a gap concerning the lack of focus on factors that impact treatment integrity of ADHD interventions. Most of the interventions were studied through a researcher-supervised implementation, and factors that would impede or facilitate teachers' ability to implement the intervention on their own were not examined. Factors hindering ADHD intervention implementation in the classroom have not been studied to the author's knowledge. It is important to know if the interventions being recommended are feasible in the average teacher's classroom and if not, to identify the factors that stand in the way of implementation.

CHAPTER 3

METHODOLOGY

Research Design

An exploratory research study was conducted to compare the differences in perceived barriers across various commonly recommended interventions as well as to determine if teacher stress is related to the number of barriers they perceive. Teacher responses to two self-report measures were collected from various areas of a Southern state and from a Midwestern state and analyzed using six repeated-measure Analysis of Variance (ANOVAs) and a correlation. The means for each barrier reported by teachers, including an "other" category were examined. Repeated measures ANOVAs were used to examine differences in reported barriers for the different types of interventions, as well as whether there was a relationship between teacher stress levels and the number of barriers they perceived.

Participants

Surveys were e-mailed to a total of 3,000 kindergarten through sixth grade public school teachers. The participants were recruited from one Midwestern state and one Southern state to extend generalizability. Of the 3,000 surveys sent out, 136 were returned. Out of those responses, 62 surveys were fully answered and usable for the data analysis. To protect confidentiality, no identifying information was collected from participants, so demographic information is not available. However, the areas surveyed include a balanced mix between the

states in terms of economic level and population status. Specific areas of the states were sampled to represent a mix of micropolitan, rural, and metropolitan areas. According to the United States Census Bureau (n.d.), the Midwestern state's population in 2007-2008 was composed of 85.7% Caucasian residents, 8.6% African American residents, and 4.7% Asian or Other residents. The Southern state's population was composed of 60% Caucasian residents, 37.1% African American residents, and 2.5% Asian or Other residents. The median family income of the Midwestern state was $48,685, with 9.0% of the families living below the poverty level. The median family income of the Southern state was $46,413, with 16.7% of the families living below the poverty level.

Research Methods

Participants' e-mail addresses were obtained from their public school district's websites. Only districts that had the e-mail addresses within the public domain were included in this sample. Individual e-mails were sent to the teachers giving them a link to the web-based survey provided through Indiana State University's access to Qualtrics, which is a secure software program designed to host web-based surveys.

The collected data did not provide the researcher with any personally identifiable information or e-mail addresses of the participants. Once the teacher entered the survey, he or she first saw an informed consent statement. Those who agreed to participate in the study had to click on a button labeled "I agree" to a statement that acknowledged they understood the personal risks and risks to confidentiality and were giving their informed consent to participate in the study. If they did not click the "I agree" button, they were not allowed entrance into the rest of the survey. If they chose at this point to not participate, they were asked within the informed consent to exit their browser. After agreeing to the informed consent, the teachers were given

access to two surveys: the Teacher Stress Inventory (Fimian, 1987) and a researcher-developed survey to evaluate teachers' perceptions of barriers to intervention (See Appendices A & B).

Research Instruments

Teacher Stress Inventory

Fimian's (1987) Teacher Stress Inventory (TSI) was used to assess the level of teacher-reported stress. The TSI is made up of 49 stress-related items and 9 optional demographic items. Only the 49 stress-related items were used. These items measure five factors (Time Management, Work-Related Stressors, Professional Distress, Discipline and Motivation, and Professional Investment) and five manifestations of stress (Emotional, Fatigue, Cardiovascular, Gastronomic, and Behavioral). The survey has been normed on a sample of regular education and special education teachers. Each item serves to assess the strength of each stated event on a 5-point Likert-type scale ranging from 1 = "no strength; not noticeable" to 5 = "major strength; extremely noticeable." Respondents obtain a score on each of the ten factors by averaging the ratings of the items contained within each factor; a total score can be obtained by averaging all the individual factor scores. Cutoff points for each subscale and the total scale can be obtained based on samples of regular education teachers as well as special education teachers.

Poteat and Wiese (1992) examined the internal consistency reliability estimates for the TSI using Cronbach's coefficient alpha. The total scale alpha reliability was .93 and subscale reliability estimates ranged from .75 to .88. All reliability coefficients were considered adequate for inclusion in this instrument. Test-retest reliability was measured in a sample of 60 North Carolina special education teachers. The time between test administrations ranged from two hours to two weeks and reliabilities ranged from .67 (one-week interval) to .99 (two-week interval). Five samples of experts (individuals who had authored an article on stress, conducted

stress research, or conducted stress management seminars) were gathered to assess for content validity. Overall, there was more agreement on the causes of stress than in the manifestations. Principal components factor analysis was conducted, including varimax and oblique rotations to determine the stress factors. Ten factors emerged that accounted for 58% of the stress variance. Some drawbacks of this measure include the relatively small norming sample compared to the total number of teachers working in the United States and the fact that though regular education teachers were included in the sample, the majority of the respondents came from special education backgrounds. Overall, the TSI appears to be an adequate measure for examining teacher stress.

Teacher's Perception of Barriers to Intervention Survey

The author developed the Teacher's Perception of Barriers to Intervention Survey (TPBIS) to assess teachers' perceived barriers to intervention implementation. Each recommendation assessed for was pulled from the existing empirical literature and from authors who are considered to be experts in the area of behavioral management, ADHD interventions, or classroom modification.

A content expert was consulted to assess whether the list of interventions was a good reflection of those used in common practice. During the development of the literature review, articles on the implementation success of the previously mentioned interventions and reviews of school-wide program implementation were reviewed for discussions of possible barriers to the interventions. Some of the items (i.e., time, parent support, and acceptability) were mentioned as possible factors that influenced teacher's use of an intervention, but were not listed as barriers. During this process, a content expert was consulted about factors that could potentially hinder the use of the interventions in a classroom (i.e., administrative support, fairness, and level of

child difficulty). These items were then researched and included once empirical evidence was found from past studies.

As a result of the literature review, five interventions and six potential barriers were used as the basis of the TPBIS. The Daily Behavior Report Card, token economy, response cost, the classroom environment, and the teacher's instructional style made up the list of interventions. The amount of time it takes to implement and maintain an intervention, the level of parent involvement, the level of child difficulty, the acceptability of the intervention, the perceived fairness of the intervention to other students, and the level of administrative support were all considered to be potential barriers to the interventions used. Each intervention was briefly described and followed by survey items that targeted potential barriers. There were two items assessing teacher perceptions for time, level of parent involvement, child difficulty, acceptability and level of administrative support. One item was used to assess perceptions of fairness as a barrier, yielding a total of 11 items for each of the five interventions, or 55 items total. Each response was based on a five point Likert-type scale in which 1 = "would not get in the way," 3 = "would somewhat get in the way," and 5 = "would definitely get in the way" for the intervention listed. After the data had been collected it was determined that one of the questions assessing the acceptability of an intervention was not worded appropriately to represent a "barrier" and this question was removed from the data set. The "barrier score" was determined by averaging the responses for each two-item section and from the individual response given for the one-item sections.

CHAPTER 4

RESULTS

Descriptive Analysis

A total of 62 survey responses were analyzed and descriptive statistics were examined. The number of responses for each potential barrier ranged from 56 to 62. The total stress scores on the TSI ranged from 1.14 to 4.33, with a score of one reflecting low levels of stress and five reflecting high levels of stress, and had a mean of 2.53. A summary of group means and standard deviations of potential barriers to specific intervention recommendations on the TPBIS is shown in Table 1. Mean scores approaching three or above on the TPBIS (3 = would somewhat get in the way, 5 = would definitely get in the way) reflected that the item was seen by the teacher as a moderate to high barrier to implementation, while those with a score closer to 2 or lower reflected that the teachers did not see the item as a barrier.

Barriers

Overall, the level of child difficulty was seen as the biggest potential barrier across all interventions (M = 3.24). This potential barrier was seen as a moderately high barrier to the use of the Daily Behavioral Report Card (M = 3.77), the token economy (M = 3.33), the response cost interventions (M = 3.38), classroom environment (M = 2.80), and the instructional style (M = 2.90). While the mean scores for the level of administrative support were not three or above, the overall mean score for this potential barrier showed that this barrier had the second greatest

Table 1

Descriptive Statistics of Potential Barriers by Intervention

	M	*SD*
Time (*n* = 62)		
Daily Report Card	3.04	1.12
Token Economy	3.10	1.33
Response Cost	3.13	1.29
Classroom Environment	1.95	1.24
Instructional Style	2.32	1.38
Parent Support (*n* = 57)		
Daily Report Card	2.77	.73
Token Economy	2.37	.95
Response Cost	2.46	.95
Classroom Environment	1.91	.99
Instructional Style	1.95	1.02
Child Difficulty (*n* = 56)		
Daily Report Card	3.77	1.22
Token Economy	3.33	1.13
Response Cost	3.38	1.16
Classroom Environment	2.80	1.36
Instructional Style	2.90	1.22
Acceptability (*n* = 58)		
Daily Report Card	2.69	1.38
Token Economy	2.43	1.34
Response Cost	2.60	1.30
Classroom Environment	2.03	1.24
Instructional Style	2.24	1.22
Fairness (*n* = 61)		
Daily Report Card	2.57	1.24
Token Economy	3.10	1.40
Response Cost	3.13	1.44
Classroom Environment	1.93	1.25
Instructional Style	1.97	1.22
Administrative Support (*n* = 58)		
Daily Report Card	2.96	1.49
Token Economy	2.88	1.58
Response Cost	2.93	1.56
Classroom Environment	2.46	1.57
Instructional Style	2.43	1.56

impact on interventions (*M* = 2.73). The level of administrative support means for the daily report card (*M* = 2.96), token economy (*M* = 2.88), and the response cost interventions (*M* = 2.93) were each close enough to the cutoff mean score of three to be considered a moderate barrier. The potential barrier of time was seen as the third biggest barrier across interventions (*M* = 2.71). Time was seen as a moderately high barrier for the Daily Behavioral Report Card (*M* = 3.04), the token economy (*M* = 3.10), and the response cost interventions (*M* = 3.13) and had the least impact on the classroom environment intervention (*M* = 1.95). The fairness of an intervention was seen as a barrier for the token economy (*M* = 3.10) and for the response cost interventions (*M* = 3.13) and had the fourth largest total impact on all interventions (*M* = 2.54). The potential barriers of the level of parent support and the acceptability of an intervention both had mean scores well below 3, which indicated that these factors were not seen to be barriers for the individual interventions. The acceptability of an intervention (*M* = 2.40) and the level of parent support (*M* = 2.29) had the lowest overall mean barrier score across all the interventions.

Score Ranges for Barriers

The potential barrier of the fairness of an intervention had the greatest range in the mean scores. The means ranged from 3.13 (response cost) to 1.93 for the classroom environment. The potential barrier of time had the second greatest range in mean scores, with the mean scores ranging from 3.13 (response cost) to 1.95 (classroom environment). The mean scores for the level of child difficulty ranged from 3.77 (daily report card) to 2.80 (classroom environment). The mean scores for the level of parent support ranged from 2.77 (daily report card) to 1.95 (instructional style). The level of administrative support barrier had the smallest range in mean scores with the means ranging from 2.96 (daily report card) to 2.43 (instructional style).

Interventions

The daily behavioral report card had four direct barriers (time, level of parent support, level of child difficulty, and the lack of administrative support) and was impacted the most overall by all potential barriers ($M = 2.97$). The response cost intervention had four direct barriers (time, level of child difficulty, fairness of an intervention, and lack of administrative support) and was impacted the second most by all the potential barriers ($M = 2.94$). The token economy intervention was impacted moderately high by all the potential barriers ($M = 2.87$) and was directly impacted by time, level of child difficulty, the fairness of an intervention, and lack of administrative support. The classroom environment and instructional style interventions were the least impacted overall by all the potential barriers. These interventions were both directly impacted by the level of child difficulty barrier.

Score Ranges for Interventions

The daily report card intervention had the greatest range in mean scores, with scores ranging from 3.77 (level of child difficulty) to 2.57 (fairness of an intervention). The mean scores for the response cost intervention ranged from 3.38 (level of child difficulty) to 2.46 (level of parent support). The mean scores for the classroom environment intervention ranged from 2.80 (level of child difficulty) to 1.91 (level of parent support). The mean scores for the instructional style intervention ranged from 2.90 (level of child difficulty) to 1.95 (level of parent support). The token economy intervention had the smallest range in mean scores with the means ranging from 3.33 (level of child difficulty) to 2.37 (level of parent support).

Repeated Measures Analysis

A repeated measures ANOVA was conducted to answer the first research question, "Is there a significant difference across interventions based on the potential barrier of time spent on

the intervention?" Mauchly's test indicated that the data violated the assumption of sphericity, $W(9) = .614$, $p < .05$. Based on a Greenhouse-Geisser correction for the violation of sphericity, there was a statistically significant difference across the five interventions on the potential barrier of time, $F(3.14, 191.40) = 18.23$, $p < .05$, within-subjects $\eta^2 = .23$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that there were several significant differences in teacher perception of time as a barrier between the interventions. The means for time as a barrier across each intervention can be seen in Figure 1.

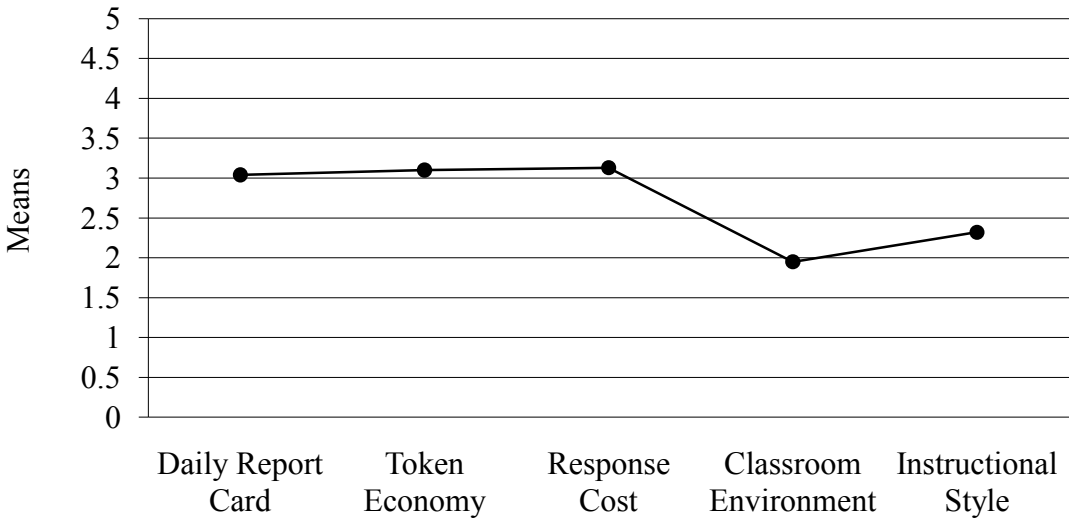

Figure 1. Means of time as a potential barrier across interventions.

Specifically, there were six significant differences in time as a potential barrier between interventions. Time as a barrier was significantly higher for the daily report card intervention ($M = 3.04$, $SD = 1.12$) than for both the classroom environment ($M = 1.95$, $SD = 1.24$) and instructional style ($M = 2.32$, $SD = 1.38$). Time as a barrier was also significantly higher for the token economy intervention ($M = 3.10$, $SD = 1.33$) than for both the classroom environment and instructional style interventions. Both the classroom environment and instructional style interventions also differed significantly from the response cost intervention ($M = 3.13$, $SD =$

1.29) in terms of time as a barrier. However, there were no significant differences between the daily report card, token economy, or response cost interventions on time as a potential barrier. In addition, time as a potential barrier did not significantly differ between classroom environment and instructional style.

A repeated measures ANOVA was conducted to answer the second research question, "Is there a significant difference across interventions based on the potential barrier of the level of parent support?" Mauchly's test indicated that the data violated the assumption of sphericity, $W(9) = .58$, $p < .05$. Based on a Greenhouse-Geisser correction for the violation of sphericity, there was a statistically significant difference across the five interventions on the potential barrier of the level of parent support, $F(3.08, 172.45) = 16.96$, $p < .05$, within-subjects $\eta^2 = .23$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that there were several significant differences on the potential barrier of the level of parent support between the interventions. The means for the level of parent support across each intervention can be seen in Figure 2.

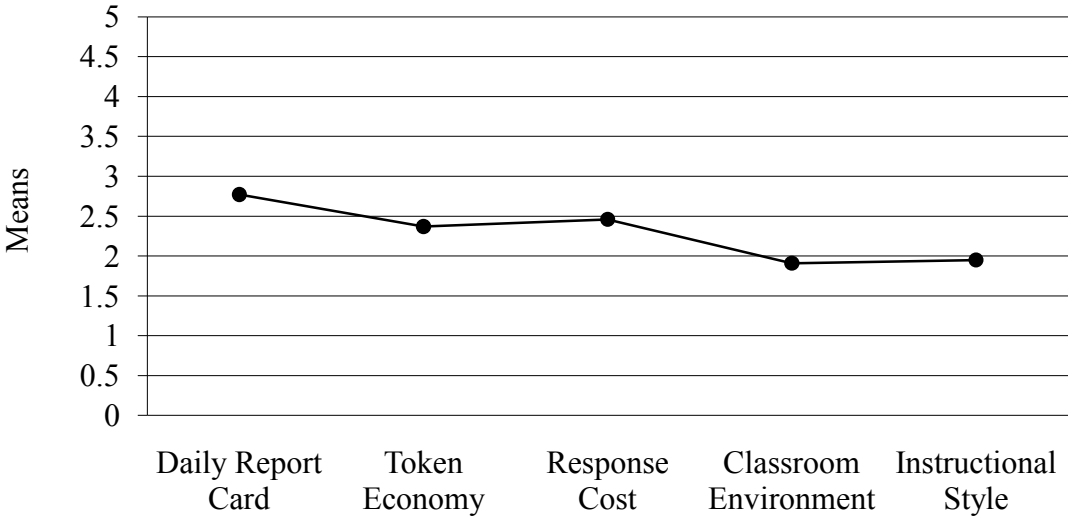

Figure 2. Means of the level of parent support as a potential barrier across interventions.

Specifically, the level of parent support was significantly higher for the daily report card intervention ($M = 2.77$, $SD = .73$) than for the token economy ($M = 2.37$, $SD = .95$), classroom environment ($M = 1.91$, $SD = .99$), and instructional style interventions ($M = 1.95$, $SD = 1.02$), but not the response cost intervention ($M = 2.46$, $SD = .95$). This barrier was larger for the token economy intervention than for the classroom environment intervention. The response cost intervention ($M = 2.46$, $SD = .95$) also differed from both the classroom environment and the instructional style interventions in terms of the level of parent support as a barrier. The classroom environment and instructional style intervention did not differ in the potential barrier of level of parent support.

A repeated measures ANOVA was conducted to answer the third research question, "Is there a significant difference across interventions based on the potential barrier of the level of child difficulty?" Mauchly's test indicated that the data did not violate the assumption of sphericity, $W(9) = .76$, $p > .05$. There was a statistically significant difference across the five interventions on the potential barrier of the level of child difficulty, $F(4, 220) = 11.77$, $p < .05$, within-subjects $\eta^2 = .18$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that there were several significant differences on the potential barrier of the level of child difficulty between the interventions. The means for the level of child difficulty across each intervention are shown in Figure 3. Specifically, the level of child difficulty as a barrier was significantly higher for the daily report card intervention ($M = 3.77$, $SD = 1.22$) than for the token economy ($M = 3.33$, $SD = 1.13$), classroom environment ($M = 2.80$, $SD = 1.36$), and the instructional style interventions ($M = 2.90$, $SD = 1.22$). The level of child difficulty was also seen as a greater barrier when using the token economy intervention over the classroom environment intervention. The level of child difficulty was seen as a greater

barrier when using the response cost intervention ($M = 3.38$, $SD = 1.16$) in comparison to both the classroom environment and the instructional style interventions. There was no significant difference between the classroom environment and the instructional style interventions.

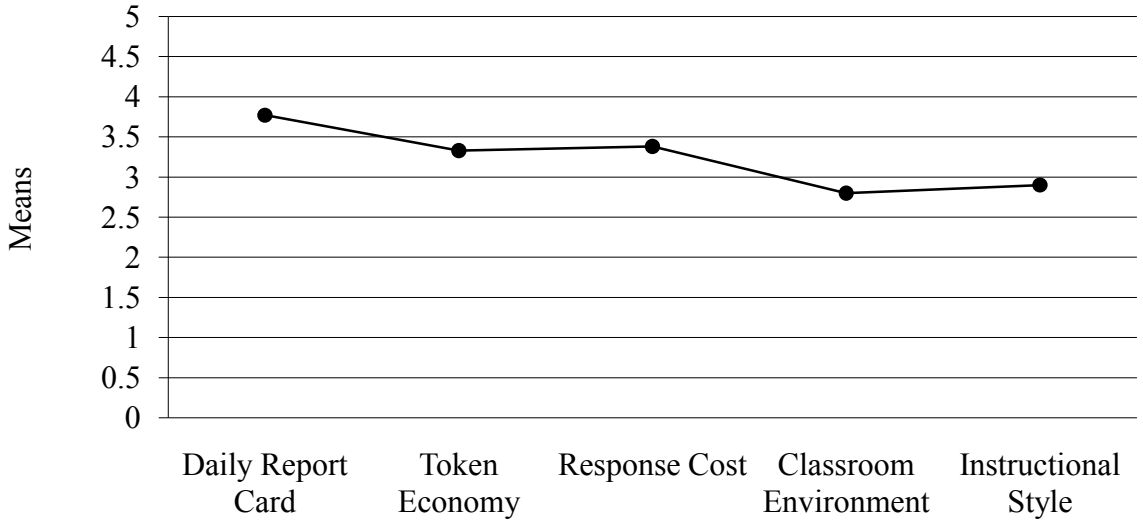

Figure 3. Means of the level of child difficulty as a potential barrier across interventions.

A repeated measures ANOVA was conducted to answer the fourth research question, "Is there a significant difference across interventions based on the potential barrier of the acceptability of an intervention?" Mauchly's test indicated that the data violated the assumption of sphericity, $W(9) = .70$, $p < .05$. Based on a Greenhouse-Geisser correction for the violation of sphericity, there was a statistically significant difference across the five interventions on the potential barrier of the acceptability of an intervention, $F(3.47, 197.61) = 3.30$, $p < .05$, within-subjects $\eta^2 = .06$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that there was one significant difference on the potential barrier of the acceptability of an intervention. The means for the acceptability of an intervention across each intervention are shown in Figure 4. Specifically, acceptability as a barrier was significantly

higher for the daily behavioral report card ($M = 2.69$, $SD = 1.38$) than for the classroom environment intervention ($M = 2.03$, $SD = 1.24$).

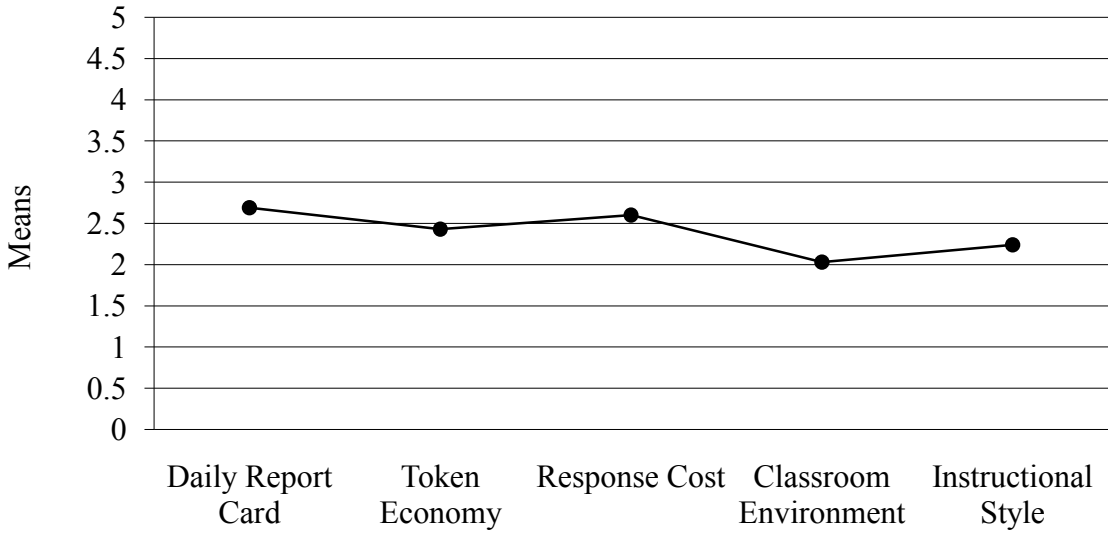

Figure 4. Means of the acceptability of an intervention as a potential barrier across interventions.

A repeated measures ANOVA was conducted to answer the fifth research question, "Is there a significant difference across interventions based on the potential barrier of the perceived fairness of an intervention?" Mauchly's test indicated that the data did not violate the assumption of sphericity, $W(9) = .78$, $p > .05$. There was a statistically significant difference across the five interventions on the potential barrier of perceived fairness of an intervention, $F(4, 240) = 19.37$, $p < .05$, within-subjects $\eta^2 = .24$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that there were several significant differences on the potential barrier of the perceived fairness of an intervention. The means for the perceived fairness of an intervention across each intervention can be seen in Figure 5. Specifically, the fairness of an intervention was seen to be a greater barrier for the daily behavioral report card ($M = 2.57$, $SD = 1.24$), the token economy ($M = 3.10$, $SD = 1.40$), and the

response cost intervention ($M = 3.13$) when compared individually to the classroom environment intervention ($M = 1.93$, $SD = 1.25$) or the instructional style intervention ($M = 1.97$, $SD = 1.22$). However, the classroom environment and instructional style interventions did not differ from each other.

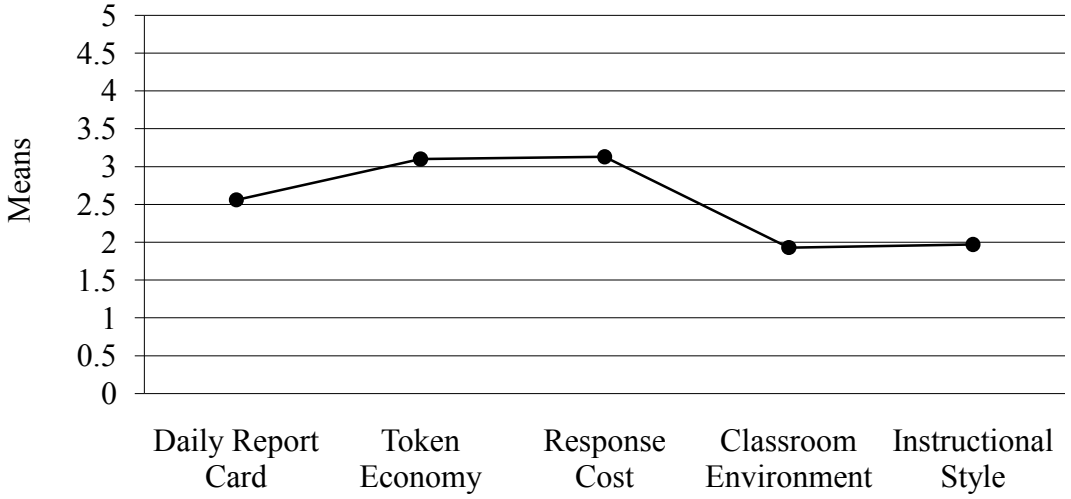

Figure 5. Means of the percieved fairness of an intervention as a potential barrier across interventions.

A repeated measures ANOVA was conducted to answer the sixth research question, "Is there a significant difference across interventions based on the potential barrier of the level of administrative support?" Mauchly's test indicated that the data violated the assumption of sphericity, $W(9) = .35$, $p < .05$. Based on a Greenhouse-Geisser correction for the violation of sphericity, there was a statistically significant difference across the five interventions on the potential barrier of the level of administrative support, $F(2.72, 154.98) = 5.52$, $p < .05$, within-subjects $\eta^2 = .09$. Pairwise comparisons using a Bonferroni correction to maintain an alpha level of .05 revealed that there was one significant difference on the potential barrier of the level of administrative support between the interventions. The means for the level of administrative

support across each intervention are shown in Figure 6. Specifically, the level of administrative support as a barrier was significantly higher for the daily report card intervention ($M = 2.96$, $SD = 1.49$) than for classroom environment intervention ($M = 2.46$, $SD = 1.57$). Table 2 shows results summaries from the repeated measure ANOVAs.

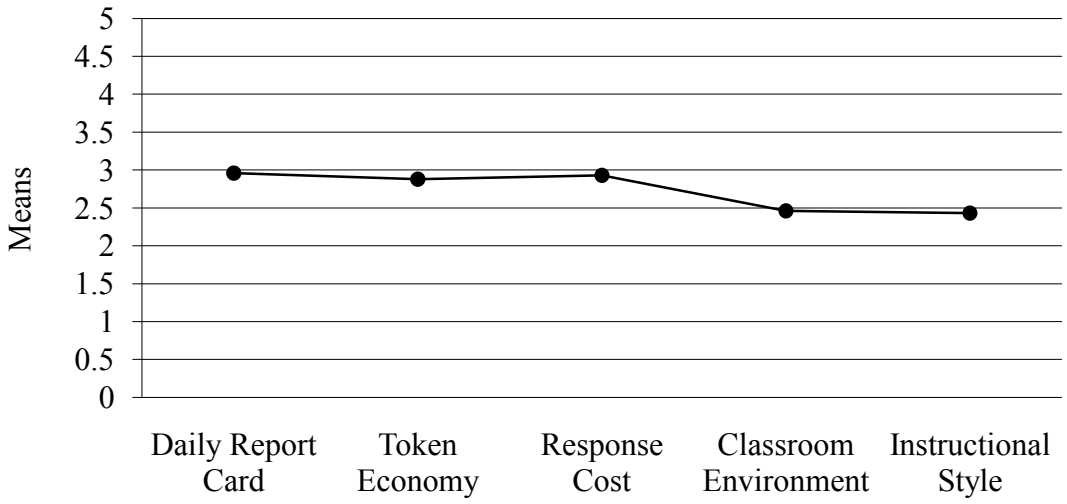

Figure 6. Means of the level of administrative support as a potential barrier across interventions.

Table 2

Analysis of Variance for Interventions Repeated-Measures Effects

Dependent Variable	*F*	*p*	η^2
Time	18.23	.000	.23
Level of Parent Support	16.96	.000	.23
Level of Child Difficulty	11.77	.000	.18
Acceptability of the Intervention	3.30	.012	.06
Perceived Fairness of the Intervention	19.37	.000	.24
Level of Administrative Support	5.52	.002	.09

Correlation of Teacher Stress with Perceived Barriers

A Pearson correlation was used to answer the last research question, "Will teacher stress correlate with the number of perceived barriers?" The level of teacher stress was obtained from the overall TSI score which ranged from one to five, with five reflecting high or extremely noticeable levels of stress. This was compared with the mean scores obtained from the TBIS which also ranged from one to five, with scores approaching three considered to be perceived as moderate barriers. There was a significant positive relationship ($r = .38$, $p < .01$, $n = 47$), indicating that as teacher stress levels increased, they perceived more barriers to interventions. Pearson correlations were also used to examine the relationship of teacher stress across each teacher's rating of individual barriers. There was a significant positive relationship ($r = .36$, $p < .01$, $n = 62$) between teachers' stress levels and the potential barrier of time, indicating that as teachers' stress levels increase, they perceive time to be more of a barrier to interventions. There was not a significant relationship ($r = .14$, $p > .05$, $n = 57$) between teachers' stress levels and the potential barrier of the level of parent support. There was a significant positive relationship ($r = .28$, $p < .05$, $n = 56$) between teachers' stress levels and the level of child difficulty, indicating that as teachers' stress levels increase, they perceive the level of child difficulty to be more of a barrier to interventions. There was not a significant relationship ($r = .17$, $p > .05$, $n = 58$) between teachers' stress levels and the acceptability of an intervention. There was a significant positive relationship ($r = .35$, $p < .01$, $n = 61$) between teachers' stress levels and the perceived fairness of an intervention, indicating that as teachers' stress levels increase, they perceive the fairness of an intervention to be more of a barrier. Lastly, there was also a positive significant relationship ($r = .31$, $p < .05$, $n = 58$) between teachers' stress levels and the lack of administrative support, indicating that as teachers' stress levels increase, they perceive the lack

of administrative support to be more of a barrier to an intervention. Table 3 shows results summaries from the Pearson correlations.

Table 3

Correlation Between Total Teacher Stress Score and Perceived Barriers

Perceived Barrier	*n*	*r*	*p*
Total for All Barriers	47	.38	.008**
Time	62	.36	.004**
Level of Parent Support	57	.14	.301
Level of Child Difficulty	56	.28	.034*
Acceptability of the Intervention	58	.17	.199
Perceived Fairness of the Intervention	61	.35	.006**
Lack of Administrative Support	58	.31	.018*

** $p < .01$, * $p < .05$

CHAPTER 5

DISCUSSION

To date, the author is unaware of any research on barriers to implementing school-based interventions for children with ADHD Studying the factors that may inhibit teachers from implementing an intervention may offer suggestions for modifying school-based interventions to facilitate implentation. Research has shown that several interventions can positively impact the behavior and academics of students with ADHD (Chafouleas et al., 2006; DuPaul, 2007; DuPaul, & Weyandt, 2006; Fabiano & Pelham, 2003). However, these interventions are not effective if teachers are unable to utilize them in their classrooms. The purpose of this study was to examine factors that could potentially act as barriers for specific interventions and to examine the relationship between teachers' stress levels and perceived barriers to interventions.

The results from this study indicated that teachers do perceive several possible barriers to specific interventions. Specifically, time spent on an intervention, the level of child difficulty, and the perceived fairness of an intervention were found to be moderate barriers to most of the interventions examined in this study. When considering the use of the daily report card, the token economy, and the response cost interventions, both the time spent implementing the intervention and the level of child difficulty were considered to be moderate barriers. In addition, fairness was perceived as a possible barrier for the use of the token economy and response cost interventions, both of which incorporate the use of a reward to help modify

behaviors. Finally, the level of teacher stress positively correlated with all potential barriers except for the level of parent support and the acceptability of an intervention. This indicates that as teachers become more stressed, they are more likely to view the time it takes to implement an intervention, the level of child difficulty, the perceived fairness of the intervention, and the lack of administrative support to be more of a barrier to the intervention being used.

Many factors can influence the use of interventions (Broughton & Hester, 1993; Chafouleas et al. 2006; DuPaul, 2007; Elliott et al., 1984; Jayanthi et al. 1996; Kazdin & Wassell, 1999; Layne, 2001; Martens et al., 1985; Witt et al., 1984). In particular, the time spent on an intervention, the level of child difficulty, level of parent support, level of administrative support, the perceived fairness of an intervention, and the acceptability of an intervention were found to be barriers at varying levels of impact for commonly used intervention recommendations for ADHD.

Daily Behavioral Report Card

Chafouleas et al. (2006) indicated that the use of the Daily Behavioral Report Card can be useful in managing the behaviors of children with ADHD in the classroom. In the current study, teachers viewed time to be a barrier when implementing this intervention. This intervention can require the teacher to constantly monitor multiple child behaviors in the classroom and teachers may perceive the need to make comments about those specific behaviors when completing the report. Depending on the number of behaviors and the number of children the teacher is asked to monitor in this way, the amount of time can easily vary from a few minutes to more than an hour. In the comment section, four teachers expounded on their view that this intervention could be a time burden. Two of those teachers indicated that their students changed classes throughout the day and they felt pressure to take the last few minutes of class time to fill out the notes so the

student would not be late going to the next class. The level of child difficulty can also become a barrier when using the Daily Behavioral Report Card. This barrier could potentially be linked to the barrier of time. The more severe a child's behavior becomes, the more time a teacher has to devote to that individual student. In terms of the Daily Behavioral Report Card, as the behavior severity increases, the teacher may feel that they need to write detailed comments, instead of just using a predetermined rating scale.

Given these results, it is important for psychologists to be mindful of the time constraints that teachers are already under and to assist teachers in coming up with a simple rating system for behaviors and learning how to monitor the target behaviors. It may be useful for teachers to only report on the targeted behaviors on the Daily Behavioral Report Card. In addition, the behavior report card process is designed to minimize the need for specific teacher comments, as teachers are asked to rate a specific pre-determined behavior using a rating scale. It may be beneficial to examine how frequently behavioral comments are needed during a week and to keep the level of child difficulty in mind when determining how many behaviors need to be targeted (i.e., tracking fewer particular behaviors as the severity of behaviors increases).

The level of parent support, acceptability of the intervention, perceived fairness of the intervention, and level of administrative support were not seen to be potential barriers to the Daily Behavioral Report Card intervention. In terms of parent support, teachers may view this intervention as more of a means of communication than a behavioral intervention and may not need parent feedback. However, within the comment section on this question, three teachers indicated that parents can become a barrier when using this intervention. One teacher indicated that sometimes parents want more details than they can provide in the note and that they must spend time on the phone communicating in greater detail. While teachers did not report the level

of parent support to be a barrier overall, it is important to remember that each teacher could face unique challenges with each intervention. In addition, teachers may feel that the Daily Behavioral Report Card is an acceptable means of communicating positive or negative behaviors that does not need support from administration. This intervention does not require outside incentives in the classroom and therefore may be seen as fair because the target student is not being treated different from other students in the classroom (other than greater observation).

Token Economy and Response Cost

Both the token economy and response cost interventions had similar results in that the time spent on an intervention, the level of child difficulty, and the fairness of an intervention were seen as barriers. These results support previous research showing that time (Elliott et al., 1984; Witt et al., 1984), fairness (Jayanthi et al., 1996), and behavior severity (Kazdin & Mazurick, 1994) can all impact the implementation of an intervention. A few comments made by teachers indicated that they would not feel comfortable using these interventions only for a student with ADHD but would incorporate them as a classroom management tool so that all students could gain rewards. Like a daily behavioral report card, a token or response cost system takes time to implement. One teacher commented in the survey that he or she felt that having a school counselor or school administrator provide the reward would help alleviate the time commitment. Another commented on the number of students in the classroom and how managing larger numbers could be difficult when providing individual rewards. Some of the researchers had teachers monitor behaviors several times a day and provide the appropriate reward or consequence multiple times a day for these two interventions (Carlson & Tamm, 2000; Carlson et al., 2000; Fabiano & Pelham, 2003; Miranda et al., 2002). In addition, teachers were

sometimes asked to have discussions with the student about classroom expectations to collaborate on the target goal and negotiate an acceptable reward.

As with the Daily Behavioral Report Card, the more severe a child's behavior becomes, the more time a teacher has to spend on this intervention. In the study by Fabiano and Pelham (2003), rewards were given for appropriate behaviors based on time intervals. Initially, shortened time intervals were used that required the teacher to monitor behaviors frequently and provide rewards. The time between reward intervals was eventually lengthened as the child's behavior improved. If a child's behavior is severe, a teacher could be required to initially spend more time monitoring behaviors and providing the appropriate reward or consequence with this intervention.

Five teachers indicated that the cost of supporting a token economy system could become a barrier to using these interventions. Educational funding is not always guaranteed from year to year, so teachers may have to provide rewards (stickers, pencils, novelty toys) from their own money. One teacher indicated that his or her school frowned on giving candy as a reward and found it hard to find cost-effective rewards. Another teacher commented that if the child is not motivated by the reward currently being offered, the intervention loses its effectiveness. This could potentially lead to a situation in which teachers constantly have to replenish the variety of rewards they are offering. Depending on how frequently they are asked to reward behaviors, this intervention could become costly. Furthermore, four teachers indicated that they felt that this was an extrinsic motivational factor for change, when they believed that motivation needed to come from the student themselves.

When giving these recommendations, it may be beneficial for psychologists to provide recommendations on how often to reward, how to include the whole class in the intervention,

and how to choose which target behaviors to reward or provide the response cost consequence for. Miranda et al. (2002) had teachers train their students to evaluate their own behavior based on the rules of the classroom and included the whole class in offering a weekly prize through a token system. Their example might help decrease the amount of time a teacher spends monitoring a single student as well as make the intervention appear fairer across the classroom.

The level of parent support, the acceptability of the intervention, and the level of administrative support were not seen as barriers to these interventions. Teachers often have some form of a reward system which they use as an immediate response to good or bad behaviors. They might believe that these interventions impact only the behaviors that occur within their class and do not carry over into the home setting or other school activities which would then need parent or administrative support. Teachers may view the token economy and response cost system as more acceptable because they see the direct impact within their room. Most teachers use incentive programs even if they are not directed at managing negative behaviors, which may increase the acceptability for these interventions for behavioral change. For example, a classroom might have a reading incentive program to improve students' reading skills in which students must read a certain number of books to earn a prize.

Classroom Environment and Instructional Style

Both the classroom environment and the instructional style interventions are considered to be best practice interventions and ways to positively impact problematic ADHD behaviors (Cooper & Bilton, 1999; Goldstein & Goldstein, 1998; Maag, 1999). Across the board, these interventions were seen to be the least impacted by potential barriers. This could be due to the fact that most teachers already incorporate modifications to their teaching style and teaching environment (giving directions both verbally and in writing, moving disruptive students to the

front of the classroom). One teacher commented that these interventions were the "easiest to implement." Previous research has shown that teachers look more favorably at interventions that are not time demanding (Elliott et al., 1984; Witt et al., 1984). Most of the classroom environment interventions require the teacher to take action only once and have been proven to reduce behavioral problems. For instance, moving a student to the front of the classroom and away from distractions is a commonly used intervention (Cooper & Bilton, 1999; Goldstein & Goldstein, 1998; Maag, 1999), and keeping instructions simple and direct has been proven successful in the classroom (Lerner et al., 1995; O'Regan, 2005; Pfiffner, 1996; United States Department of Education, 2004). These types of interventions may only take one administration for a teacher, do not require additional time or parent or administrative support, and may not be perceived as unfair to other students. However, teachers may "segregate" the student with ADHD from other children in the classroom in an effort to "remove distractions" and keep that child from disrupting his/her peers.

Theory Implications

The interventions used in this study all came from a behavioral orientation, with the goal of modifying problematic behaviors that students with ADHD can sometimes display. While behavioral theory has been applied to modifying the behaviors of students, the findings in the present study indicate a need to also take into account the behavioral impact these interventions have on teachers. Researchers have found that barriers to implementation of interventions can lead to a decrease in compliance behaviors (Brown et al., 1988; Kazdin, 2000; Kazdin et a. 1997; MacNaughton & Rodrigue, 2001). For example, the time spent on an intervention was a moderately high barrier for the DBRC, token economy, and response cost interventions and the level of child difficulty was a moderate to moderately high barrier for all five interventions

studied. While the actual use of these interventions was not assessed, it is possible that as more time constraints and more behavioral problems are manifested during a teacher's workday (barriers to interventions), the teacher's behaviors of using these interventions may go down and the barrier can become the positive punishment point for teachers. Teachers often change their instructional style and their classroom environment because of their students' needs or behavior problems. The student then becomes the point of behavior change for the teacher (reinforcement), though these interventions are targeted at changing the student's behaviors. Future research could look at the factors associated with interventions that could impact a teacher's behaviors. For example, looking at aspects of an intervention or classroom environment that would increase the teacher's behavior of using an intervention as opposed to decreasing their use of interventions could help insure that teachers are actually engaging in the interventions that lead to positive behavioral change for the students. Teacher-focused research could help us better provide support and resources and create positive behavior change at both the teacher and student levels.

Teacher Stress

Based on the current results, level of teacher stress is closely related to teachers' perception of barriers to commonly recommended interventions. Specifically, higher levels of teacher stress was associated with greater reports of time, level of child difficulty, lack of administrative support, and the perceived fairness of an intervention as a barrier. However, there was no relationship between the level of teacher stress and the acceptability of an intervention or the level of parent support. These results support previous research that time, having authority rejected by students or staff, the number of discipline problems in a classroom, and having to continually monitor behaviors are all factors that can increase a teacher's stress level (Fimian,

1984; Geving, 2007; Greene et al., 2002). As teachers become more stressed, time is likely to become more valuable; having to apply that time to intervene with disruptive behaviors will often leave less time for other classroom activities. Stress has been discussed in terms of physical reactions and cognitive/emotional reactions to environmental events. Sparks and Hammonds (1981) examined teachers' stress as an internal "imbalance" that can be caused by factors such as role conflict between the demands of administrators, peers, and students, time management conflict, institutional practices and policies, and managing disruptive student behaviors. Reactions to stressors in the environment can lead to several physical manifestations (fatigue, cardiovascular responses, gastrointestinal problems) and can have a negative impact on interpersonal relationships (Fimian, 1987; Sparks & Hammonds, 1981; Swick & Hanley, 1980). Swick and Hanley reviewed several research studies on teacher stress and found that teachers' with high level of stress experience loss of energy levels, experience a decline in their ability to handle classroom discipline problems, and tend to see problems in the classroom as caused by others (blaming responses). These studies support the current finding that there is a relationship between a teacher's stress level and the perceived barriers of time, level of child difficulty, and the lack of administrative support. These factors have already been shown in the literature to be sources of conflict that can lead to teacher stress and teachers may have more trouble implementing interventions where these factors may be a hindrance for use.

Research has shown that teachers experience increased stress when dealing with the disruptive behaviors of students with ADHD (Greene et al., 2002). The more severe a behavior becomes, the more time and attention a teacher has to devote to that student. Teachers may feel that their instructional time and ability to see to other students' needs is cut short by the disruptive behaviors of one student. Troman (2000) found that negative relationships with

colleagues and administrative support could also increase the level of teacher stress. Teachers who have a negative relationship with their colleagues or principal might not feel they have access to additional help in dealing with disruptive behaviors. They may feel that their workload or classroom expectations administered by their superiors are a source of stress or believe that administration does not understand the additional time or resources the interventions require, which could impact their perception of administrative support as a barrier.

Keeping in mind that teachers perceive more barriers to interventions as their level of stress increases, it may be beneficial for psychologists and other professionals to provide more support for teachers. Teachers may benefit from getting more direct assistance in setting up a daily behavioral report card or token system. Jones and Chronis-Tuscano (2008) reported that teachers with in-service training specifically for ADHD increased knowledge about this topic and special education teachers increased their use of the behavior modification techniques talked about in training. This suggests that providing more information for teachers specific to working with students with ADHD could help them with classroom management throughout the year. Providing programming to help teachers deal with stress may also be beneficial in getting them to implement interventions in the classroom.

Limitations

There are several limitations to the current study. The sample was drawn from teachers within school corporation systems as well as school districts in a Midwestern state and a Southern state. A school corporation is structurally and administratively different from a school district. Because demographic data was not obtained, there is no way to determine how many of the responses came from which administrative situation. Therefore, if there was a significant difference in the response rate from these two settings, the results may not be as generalizable to

the other setting. In addition, some of the current results may not generalize to other school settings, such as private schools.

A major limitation of the current study was the poor response rate. Teachers were recruited through a mass e-mailing asking for their participation in this study. Out of approximately 3,000 survey invitations sent, only 125 individuals started the survey, and from those, only 62 responses were complete and usable. There may be significant differences between the people who chose to respond to those who did not. For example, the level of teacher stress could have impacted the response rate in that highly stressed teachers were less likely to take the time to complete the full survey. The fact that a large portion of the teachers started the survey but did not finish potentially indicates that a non-response bias is present. Some teachers may have been dissuaded from completing the surveys due to the length and the fact that there were no markers within the survey to show how many questions needed to be completed to reach the end of the survey. Another issue that may have limited the response rate is the order that the surveys were administered. The fact that the TSI was given first may have had a negative priming effect that influenced the teachers' decisions to complete the whole survey. The instruments used were self-report measures of teachers' opinions of what would hinder their use of an intervention, not whether they have actually experienced that barrier; therefore, their responses may have be based on beliefs and not actual classroom procedures. While there were enough answers to provide a sufficient power level, the effect sizes ranged from extremely low to moderate (.06 to .24). This indicates that the differences in barriers between interventions might not be large enough to be noticed in an everyday setting. The TPBIS was a researcher-developed survey and there may have been things inherent to the survey that limited the results. For example, the language used might not have been clear to all surveyed teachers or the survey

topic might not have appealed to all teachers. There are no current norms or reliability studies for this instrument at the current time which could limit its ability to be generalized to other settings.

In addition, the recommendations mentioned in the survey do not encompass all of the empirically supported interventions or all the interventions that are considered to be best practice. There may be other interventions used in a classroom that would be impacted differently by these potential barriers and additional potential barriers to these interventions that were not explored. There may be other barriers operating within a classroom setting that would prevent teachers from using these interventions as well as other interventions that were not assessed.

Future Research

A review of the literature showed that there was a gap in research on what may keep teachers from implementing intervention recommendations for ADHD students in their classroom. The current study attempted to bridge this gap and found that there are several potential barriers to interventions. However, based on the low response rate and the limited geographic area respondents were taken from, further research should be done in this area to broaden the applicability of these findings. Teacher demographics were not collected during the present study. Future research could collect information such as age, number of years teaching, level of education, level of compensation, individual economic level, type of classroom (regular education vs. special education) and the number of students in the classroom in order to compare responses across these factors. A wider variety of interventions and potential barriers should also be explored. For example, only the level of child difficulty as a potential barrier was

examined, but the number of children with behavioral difficulties could be considered a separate barrier.

While this researcher looked at a few interventions commonly used for students with ADHD, teachers have students with a variety of diagnoses that may have differing intervention recommendations. The current study could be expanded to include varying interventions and diagnoses to determine if the same barriers apply. Similarly, researchers could target whether the barriers differ as the number of intervention recommendations increase or change. There are a variety of classroom settings (traditional, music, art, special education, etc.), and future researchers could also investigate whether the potential barriers remain the same across the different settings.

Research could also be targeted at helping teachers by examining whether modifications could be made to these recommendations that would lessen the barrier (e.g., time spent on an intervention). For example, future researchers could look at the response cost and token system interventions to see if there is an optimal length of time between behavioral monitoring intervals. In the current study, as teachers' stress levels increase, they reported seeing more factors as potential barriers. Researchers could expand on the current findings to see if specific sources of stress contribute to certain barriers.

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APPENDIX A: TEACHER STRESS INVENTORY

The following are a number teacher concerns. Please identify those factors which cause you stress in your present position. Read each statement carefully and decide if you ever feel this way about your job. Then, indicate how strong the feeling is when you experience it by circling the appropriate rating on the 5-point scale. If you have not experienced this feeling, or if the item is inappropriate for your position, circle number 1 (no strength; not noticeable). The rating scale is shown at the top of each page.

Examples:

I feel insufficiently prepared for my job. 1 2 3 4 5

If you feel very strongly that you are insufficiently prepared for your job, you would circle number 5.

I feel that if I step back in either effort or commitment,
I may be seen as less competent. 1 2 3 4 5

If you never feel this way, and the feeling does not have noticeable strength, you would circle number 1.

HOW STRONG?	1 no strength; not noticeable	2 mild strength; barely noticeable	3 medium strength; moderately noticeable	4 great strength; very noticeable	5 major strength; extremely noticeable

---

TIME MANAGEMENT

1. I easily over-commit myself.	1	2	3	4	5
2. I become impatient if others do things too slowly.	1	2	3	4	5
3. I have to try doing more than one thing at a time.	1	2	3	4	5
4. I have little time to relax/enjoy the time of day.	1	2	3	4	5
5. I think about unrelated matters during conversations.	1	2	3	4	5
6. I feel uncomfortable wasting time.	1	2	3	4	5
7. There isn't enough time to get things done.	1	2	3	4	5
8. I rush in my speech.	1	2	3	4	5

WORK-RELATED STRESSORS

9. There is little time to prepare for my lessons/responsibilities.	1	2	3	4	5
10. There is too much work to do.	1	2	3	4	5
11. The pace of the school day is too fast.	1	2	3	4	5

12. My caseload/class is too big.	1	2	3	4	5
13. My personal priorities are being shortchanged due to time demands.	1	2	3	4	5
14. There is too much administrative paperwork in my job.	1	2	3	4	5

PROFESSIONAL DISTRESS

15. I lack promotion and/or advancement opportunities.	1	2	3	4	5
16. I am not progressing in my job as rapidly as I would like.	1	2	3	4	5
17. I need more status and respect on my job.	1	2	3	4	5
18. I receive an inadequate salary for the work I do.	1	2	3	4	5
19. I lack recognition for the extra work and/or good teaching I do.	1	2	3	4	5

DISCIPLINE AND MOTIVATION

I feel frustrated...

20. ...because of discipline problems in my classroom.	1	2	3	4	5
21. ...having to monitor pupil behavior.	1	2	3	4	5
22. ...because some students would do better if they tried.	1	2	3	4	5
23. ...attempting to teach students who are poorly motivated.	1	2	3	4	5
24. ...because of inadequate/poorly defined discipline problems.	1	2	3	4	5
25. ...when my authority is rejected by pupils/administration.	1	2	3	4	5

PROFESSIONAL INVESTMENT

26. My personal opinions are not sufficiently aired.	1	2	3	4	5
27. I lack control over decisions made about classroom/school matters.	1	2	3	4	5
28. I am not emotionally/intellectually stimulated on the job.	1	2	3	4	5
29. I lack opportunities for professional improvement.	1	2	3	4	5

EMOTIONAL MANIFESTATIONS

I respond to stress...

30. ...by feeling insecure.	1	2	3	4	5
31. ...by feeling vulnerable.	1	2	3	4	5
32. ...by feeling unable to cope.	1	2	3	4	5
33. ...by feeling depressed.	1	2	3	4	5
34. ...by feeling anxious.	1	2	3	4	5

FATIGUE MANIFESTATIONS

I respond to stress...

35. ...by sleeping more than usual.	1	2	3	4	5
36. ...by procrastinating.	1	2	3	4	5
37. ...by becoming fatigued in a very short time.	1	2	3	4	5
38. ...with physical exhaustion.	1	2	3	4	5
39. ...with physical weakness.	1	2	3	4	5

CARDIOVASCULAR MANIFESTATIONS

I respond to stress...

40. ...with feelings of increased blood pressure.	1	2	3	4	5
41. ...with feeling of heart pounding or racing.	1	2	3	4	5
42. ...with rapid and/or shallow breath.	1	2	3	4	5

GASTRONOMICAL MANIFESTATIONS

I respond to stress...

43. ...with stomach pain of extended duration.	1	2	3	4	5
44. ...with stomach cramps.	1	2	3	4	5
45. ...with stomach acid.	1	2	3	4	5

BEHAVIORAL MANIFESTATIONS

I respond to stress...

46. ...by using over-the-counter drugs.	1	2	3	4	5
47. ...by using prescription drugs.	1	2	3	4	5
48. ...by using alcohol.	1	2	3	4	5
49. ...by calling in sick.	1	2	3	4	5

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http://www.instructionaltech.net/TSI/index.htm

APPENDIX B: TEACHER'S PERCEPTION OF BARRIERS TO INTERVENTION SURVEY

DAILY BEHAVIORAL REPORT CARD- An intervention in which the teacher provides daily feedback to parents/guardians regarding their child's progress on specific behavior goals.

Please rate, using the scale below, the extent to which each of the following factors could potentially get in the way of implementing this intervention for a child in your class with an ADHD diagnosis.

1-would not get in the way, 3-would somewhat get in the way, 5-would definitely get in the way.

TIME					
The time it takes to implement the intervention in class.	1	2	3	4	5
The time it takes outside of class to implement the intervention.	1	2	3	4	5
PARENT INVOLVEMENT					
A high level of parent/guardian cooperation/support.	1	2	3	4	5
A low level of parent/guardian cooperation/support.	1	2	3	4	5
LEVEL OF CHILD DIFFICULTY					
Extent to which child behavior disrupts class.	1	2	3	4	5
Extent to which child behavior impairs his/her progress.	1	2	3	4	5
ACCEPTABILITY					
This intervention is likely to be effective.	1	2	3	4	5
This intervention is not appropriate for students with ADHD.	1	2	3	4	5
FAIRNESS					
This intervention is unfair to other students in the class.	1	2	3	4	5
ADMINISTRATIVE SUPPORT					
Lack of acceptance for this intervention by my administrator (i.e. school principal).	1	2	3	4	5
Lack of acceptance for this intervention from my larger administrative and peer community	1	2	3	4	5

(i.e. school district supervisors, other teachers).

Are there any other factors not mentioned here, that could hinder the implementation of this intervention?

TOKEN ECONOMY **–**An intervention in which the student with ADHD is able to earn tokens daily for good behavior and meeting small goals. Tokens can then be exchanged daily or weekly for privileges or other rewards.

Please rate, using the scale below, the extent to which each of the following factors could potentially get in the way of implementing this intervention for a child in your class with an ADHD diagnosis.

1-would not get in the way, 3-would somewhat get in the way, 5-would definitely get in the way.

TIME					
The time it takes to implement the intervention in class.	1	2	3	4	5
The time it takes outside of class to implement the intervention.	1	2	3	4	5
PARENT INVOLVEMENT					
A high level of parent/guardian cooperation/support.	1	2	3	4	5
A low level of parent/guardian cooperation/support.	1	2	3	4	5
LEVEL OF CHILD DIFFICULTY					
Extent to which child behavior disrupts class.	1	2	3	4	5
Extent to which child behavior impairs his/her progress.	1	2	3	4	5
ACCEPTABILITY					
This intervention is likely to be effective.	1	2	3	4	5
This intervention is not appropriate for students with ADHD.	1	2	3	4	5
FAIRNESS					
This intervention is unfair to other students in the class.	1	2	3	4	5
ADMINISTRATIVE SUPPORT					
Lack of acceptance for this intervention by my administrator (i.e. school principal).	1	2	3	4	5

Lack of acceptance for this intervention from my larger administrative and peer community (i.e. school district supervisors, other teachers).	1 2 3 4 5

Are there any other factors not mentioned here, that could hinder the implementation of this intervention?

RESPONSE COST- An intervention in which a certain number of tokens (e.g. stickers, straws, coins, etc.) are given to a student at the beginning of each day. The student can lose tokens for inappropriate behaviors. The student can then exchange their remaining tokens at the end of the day or week for a reward (additional play time, pencils, small games, etc.).

Please rate, using the scale below, the extent to which each of the following factors could potentially get in the way of implementing this intervention for a child in your class with an ADHD diagnosis.

1-would not get in the way, 3-would somewhat get in the way, 5-would definitely get in the way.

TIME	
The time it takes to implement the intervention in class.	1 2 3 4 5
The time it takes outside of class to implement the intervention.	1 2 3 4 5
PARENT INVOLVEMENT	
A high level of parent/guardian cooperation/support.	1 2 3 4 5
A low level of parent/guardian cooperation/support.	1 2 3 4 5
LEVEL OF CHILD DIFFICULTY	
Extent to which child behavior disrupts class.	1 2 3 4 5
Extent to which child behavior impairs his/her progress.	1 2 3 4 5
ACCEPTABILITY	
This intervention is likely to be effective.	1 2 3 4 5
This intervention is not appropriate for students with ADHD.	1 2 3 4 5
FAIRNESS	
This intervention is unfair to other students in the class.	1 2 3 4 5
ADMINISTRATIVE SUPPORT	
Lack of acceptance for this intervention by my administrator (i.e. school principal).	1 2 3 4 5

Lack of acceptance for this intervention from my larger administrative and peer community (i.e. school district supervisors, other teachers).	1 2 3 4 5

Are there any other factors not mentioned here, that could hinder the implementation of this intervention?

CLASSROOM ENVIRONMENT - An intervention in which the classroom environment is structured to facilitate student success by minimizing classroom distractions (i.e. seating close to the teacher and/or away from air vents, windows, doors and other sources of distraction).

Please rate, using the scale below, the extent to which each of the following factors could potentially get in the way of implementing this intervention for a child in your class with an ADHD diagnosis.

1-would not get in the way, 3-would somewhat get in the way, 5-would definitely get in the way.

TIME	
The time it takes to implement the intervention in class.	1 2 3 4 5
The time it takes outside of class to implement the intervention.	1 2 3 4 5
PARENT INVOLVEMENT	
A high level of parent/guardian cooperation/support.	1 2 3 4 5
A low level of parent/guardian cooperation/support.	1 2 3 4 5
LEVEL OF CHILD DIFFICULTY	
Extent to which child behavior disrupts class.	1 2 3 4 5
Extent to which child behavior impairs his/her progress.	1 2 3 4 5
ACCEPTABILITY	
This intervention is likely to be effective.	1 2 3 4 5
This intervention is not appropriate for students with ADHD.	1 2 3 4 5
FAIRNESS	
This intervention is unfair to other students in the class.	1 2 3 4 5
ADMINISTRATIVE SUPPORT	
Lack of acceptance for this intervention by my administrator (i.e. school principal).	1 2 3 4 5

Lack of acceptance for this intervention from my larger administrative and peer community (i.e. school district supervisors, other teachers).	1 2 3 4 5

Are there any other factors not mentioned here, that could hinder the implementation of this intervention?

INSTRUCTIONAL STYLE- An intervention in which teachers modify delivery of their instructions/directions (i.e. provide directions in verbal and written forms, using a "cue word" to prompt student to pay attention, and having a student repeat back instruction).

Please rate, using the scale below, the extent to which each of the following factors could potentially get in the way of implementing this intervention for a child in your class with an ADHD diagnosis.

1-would not get in the way, 3-would somewhat get in the way, 5-would definitely get in the way.

TIME	
The time it takes to implement the intervention in class.	1 2 3 4 5
The time it takes outside of class to implement the intervention.	1 2 3 4 5
PARENT INVOLVEMENT	
A high level of parent/guardian cooperation/support.	1 2 3 4 5
A low level of parent/guardian cooperation/support.	1 2 3 4 5
LEVEL OF CHILD DIFFICULTY	
Extent to which child behavior disrupts class.	1 2 3 4 5
Extent to which child behavior impairs his/her progress.	1 2 3 4 5
ACCEPTABILITY	
This intervention is likely to be effective.	1 2 3 4 5
This intervention is not appropriate for students with ADHD.	1 2 3 4 5
FAIRNESS	
This intervention is unfair to other students in the class.	1 2 3 4 5
ADMINISTRATIVE SUPPORT	
Lack of acceptance for this intervention by my administrator (i.e. school principal).	1 2 3 4 5

Lack of acceptance for this intervention from my larger administrative and peer community (i.e. school district supervisors, other teachers).	1 2 3 4 5

Are there any other factors not mentioned here, that could hinder the implementation of this intervention?

APPENDIX C: INFORMED CONSENT

You are asked to participate in a research study conducted by Amy Stagg, as a requirement for completing the dissertation for a doctoral degree in Counseling Psychology. Your participation in this study is completely voluntary and you are under no obligation to participate. Please read all the information below and then decide whether you want to be included in this study.

The purpose of this study is to examine the extent to which teachers experience barriers to implementing common Attention-Deficit/Hyperactivity Disorder (ADHD) interventions. You are being invited to be in the study because you are a public school teacher, working with students within the Kindergarten to 8th grade range. In this survey you will be asked questions pertaining to your current stress level as a teacher and your perception of possible barriers to implementing common classroom ADHD recommendations.

This survey should take less than 20 minutes. There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study. We cannot guarantee anonymity; however, we will do our best to protect your anonymity and confidentiality by providing a secure site. However, we cannot guarantee that data may not be interrupted in transmission because this is an Internet survey.

Through your participation, we eventually hope to gain a better understanding of the problems teachers face when implementing ADHD interventions and to improve the recommendations given for the classroom setting. If you have further questions about your rights

as a participant you may call 812-237-8217 or contact irb@indstate.edu. If you have questions, concerns, or comments about the study, the informed consent process, or your rights as a research subject, you may contact Amy Stagg at 601-940-0212 or by e-mail at astagg@indstate.edu, or the faculty advisor of this project, Dr. Eric Hampton Department of Communication Disorders and Counseling, School, and Educational Psychology, Indiana State University at 812-237-2890 or by e-mail at ehampton@isugw.indstate.edu.

Your participation in this study is voluntary. You can choose not to take part in this study, and once started you may quit at any time or choose to omit any question. You are not permitted to take part in this study if you are less than 18 years of age.

By clicking on the "I agree" button you are acknowledging the risks, the risks to confidentiality, and giving your informed consent to participate in this study. If you do not agree, please click on the "I disagree" button to exit this survey.

Thank you for your time and help with this project.

Amy Stagg

Ph.D. Candidate, Counseling Psychology

Indiana State University