2021

Behavioral Strategies and Predicting Impulsive Aggression in Among Students With Attention-Deficit/Hyperactivity Disorder

Raul Alafa
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Raul Alafa

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Brandy Benson, Committee Chairperson, Psychology Faculty
Dr. Leslie Barnes-Young, Committee Member, Psychology Faculty
Dr. Rhonda Bohs, University Reviewer, Psychology Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2021

Abstract

Behavioral Strategies and Predicting Impulsive Aggression in Students With Attention-Deficit/Hyperactivity Disorder

by

Raul Alafa

MS, Walden University, 2017

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

August 2021

Abstract

Researchers have explored the relationship between the application of written attention-deficit hyperactivity disorder (ADHD) impulsive aggression (IA) behavioral intervention strategies with current public-school educational plans in reducing aggression and how exclusion of behavioral strategies may increase aggression and impact students' long-term ability to control emotions. However, the social learning theory of aggression suggests that positive self-efficacy and modeling may improve effective coping. This study explored the relationship between aggression as measured by the modified overt aggression scale and the individualized education program (IEP)/504 Plan behavioral strategies' effectiveness for ADHD aggression as measured by a repeated measured analysis of variance. Data were collected using IEP and 504 Plans of children with ADHD and recorded disciplinary reports in a charter school district in central Arkansas. The study results revealed that ADHD–IA was significantly related to their modifications. The study helps fill the knowledge gaps in the modification design for ADHD–IA and attempts to bring student ADHD coping to mainstream classrooms that will better serve the educational system. Possible implications for positive social change that could result from this study include improved strategies for teachers instructing students with ADHD and IA and improved educational outcomes among this population.

Behavioral Strategies and Predicting Impulsive Aggression in Among Students With Attention-Deficit/Hyperactivity Disorder

by

Raul Alafa

MS, Walden University, 2017

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

2021

Dedication

This dissertation is dedicated to my family, friends, and colleagues who provided me with moral and social support throughout this journey. Thank you for believing in me and encouraging me to finish. Many of you have expressed how I was an inspiration, but you undoubtedly remain in every respect my constant encouragement to never give up. To my kids, you all were my ultimate motivation and reason to become a better me, and you all are my most impressive accomplishment.

Acknowledgments

I would like to acknowledge my chair, Dr. Brandy Benson, for her support, inspiration, and encouragement throughout the dissertation process. I would also like to thank my committee members Dr. Leslie Barnes-Young and Dr. Rhonda Bohs for their valuable and inspirational guidance. I also like to thank my soul mate, Jamie Still, for genuinely believing in me and offering her unwavering support. Finally, I would like to express my humble gratitude to Britney Flud, an outstanding English teacher who took the time to generously help me by explaining and coaching through my bad writing habits. Without all of you, this dissertation would not be possible.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Introduction

There is an ever-growing and significant concern about the lack of research focused on children demonstrating attention-deficit/hyperactivity disorder (ADHD) with refractory behaviors, such as aggression, with respect to receipt of special education services in school (Schnoes et al., 2006; see also Fabiano et al., 2010). As children with functional deficits like ADHD are increasingly integrated into the regular classroom setting, individualized education programs (IEPs) and 504 plans are used to address ADHD. However, research shows these plans likely do not address associated aggressive behaviors and have become less useful at providing significant modification needed to develop proper coping skills in adverse situations (Karhu et al., 2018).

Children with ADHD may use aggressive behaviors to settle conflicts and to maintain control in social situations (Visser et al., 2009). Saylor and Amann (2016) identified impulsive aggression (IA) as a comorbid condition of ADHD that often affects children and adolescents. IA can escalate the psychosocial burden of ADHD, possibly leading to adult antisocial behavior (Saylor & Amann, 2016). Saylor and Amann further described that ADHD with the comorbidity of IA is regulatory aggression occurring out of dissatisfaction, irritation, or anger as a response to real or perceived provocations. Verbal aggression, aggression against property, auto aggression, and physical aggression are manifestations of the response to these stimuli (Connor et al., 2010). Inquiry into research-based behavioral strategies (RBBS) conducted in school systems where ADHD with IA is present could provide educators with better ways to write and implement

special education plans (SEPs). Ercan et al. (2014) argued that the presence of comorbid aggression in children with ADHD negatively impacts the long-term trajectory of a child's prognosis. The study of ADHD–IA and RBBS in SEPs is an underdeveloped area in psychological research that requires further research and exploration. The inclusion of RBBS in SEPs may result in positive social change as the students learn more effective anger management strategies to apply in the classroom and out of the classroom.

In Chapter 1, I provide background research on IA that relates to ADHD and SEPs in response to the level of effectiveness of behavioral strategies. In this chapter, I explain the evidence supporting the scholarly consensus that the problem is current, relevant, and significant in the problem statement. Likewise, the purpose of the study, research questions and hypotheses, and theoretical/conceptual framework are also addressed. Additional sections of the chapter include the nature of the study, the operational definitions, assumptions, scope and delimitations, limitations, significance, and a summary.

Background

In 2016, approximately 6.1 million children in the United States, from ages 2 to 17, held a diagnosis of ADHD (Centers for Disease Control and Prevention [CDC], 2018). In the 2016 National Survey of Children's Health study, approximately 52% of children with ADHD in the United States also demonstrated behavior or conduct problems (Data Resource Center for Children & Adolescent Health, 2018). Effective management of aggressive symptoms in an academic setting poses unique challenges for school administrators and teachers (Saylor & Amann, 2016). According to Hubbard et al.

(2010), 25% of special education services address childhood aggression in schools. These IA behaviors are disruptive to educators, students, and parents (Saylor & Amann, 2016).

Special education accommodations are designed to address the hyperactive and inattentive components of ADHD but these accommodations do not use RBBS to address the IA comorbidity of ADHD directly. The lack of RBBS to address IA may prevent students from learning and coping effectively in an academic setting. According to research conducted by Spiel et al. (2014), only 18% of IEPs and 504 plans were integrated RBBS studies that provided additional research for students with ADHD–IA. Furthermore, having RBBS integrated into SEPs could assist future development of ADHD special education programs by providing insight into more practical applications in student success.

In the school setting, children diagnosed with ADHD are often accommodated with a unique SEP comprised of either a 504 Plan or an IEP to establish an environment fitting for students with this disorder. Commonly applied accommodations for children with ADHD include (a) lowering noise level, (b) dividing work into smaller units, (c) highlighting key points, (d) eliminating or reducing the frequency of timed tests, and using cooperative learning strategies (U.S. Department of Education, Office of Special Education Programs, 2008). However, these accommodations do not use RBBS to address the IA comorbidity of ADHD (Sibley et al., 2016).

Educators may not be equipped with distinctive training for correcting the aggressive behaviors in the classroom related to children with ADHD-IA. According to Elsaesser et al. (2013), there is a lack of awareness and training in aggression strategies

so that teachers can identify relational aggression among students. RBBS interventions have been found to improve aversive patterns of behaving by targeting emotion regulation and social problem solving (Sukhodolsky et al., 2016).

According to the Arkansas Department of Education (2017), the process of developing SEPs (IEPs and 504 plans) requires an assessment team (parent, teacher, school counselor) to address the specific needs of the child. The Department of Education explains that data collection for creating or revising an SEP might include the use of behavioral assessments, academic tests, and student psychological profiles. Specific to aggressive behavior, Riffel (2007) argued that behavioral intervention plans should track students' behavioral outbursts by determining when, where, and even how long each event occurs to establish patterns that will help with creating an intervention plan. Thus, monitoring aggression among ADHD students should follow a system that includes: (a) recording daily or weekly occurrences, (b) printing out predetermined behaviors (rules), (c) implementing techniques for consequence strategy (positive reinforcement and rewards), and (d) punishing behaviors (Coelho et al., 2015).

Furthermore, mainstream classroom teachers may not have the resources or training to understand how to handle children with ADHD–IA behavioral problems. Children with ADHD may have an increased risk of IA when in response to internal or external irritants that challenge their social or academic abilities. Likewise, there is an association between poor social skills and low self-esteem that contributes to responses before considering consequences that affect a child's adaptive functioning (King & Waschbusch, 2010). Fortunately, aggression decreases as children develop their cognitive

and verbal communication abilities (Campbell et al., 2010). RBBS can assist children in learning adaptive coping mechanisms through operant conditioning. For example, among the RBBS concepts, children who have emotional and behavioral disorders have been shown to improve behavior through learning self-management strategies (Niesyn, 2009). However, the literature on special education accommodations that address components of ADHD and aggression fails to establish behavioral strategies for improving coping skills for learning. Student studies dealing with modification strategies for combined emotional and behavioral disorder are conducted in a generalized setting rather than in mainstream classrooms where the children receive primary instruction (Niesyn, 2009). The discretion in generalized settings poses a potential gap in the literature that has yet to determine the effectiveness of RBBS in reducing IA among the ADHD population (as qualified under the Individuals with Disabilities Education Act [IDEA] program) while in general academic settings.

Problem Statement

Despite the prevalence of ADHD among school-aged children, research exploring effective behavioral interventions that target students with ADHD who also display comorbid signs of aggression is minimal. Connor et al. (2019) concluded that the mediation of aggression interventions is poorly defined among research conducted with the ADHD–IA population. Instead, research has focused primarily on stimulant and nonstimulant medication interventions as facilitating classroom management (Weyandt et al., 2014). Moreover, few studies of SEPs have addressed nonacademic and behavior problems (Spiel et al., 2014). Published research has yet to identify a precise frequency

by which public school systems use psychological methodologies, such as RBBS, to guide the construction of educational plans for behavior modification. DuPaul and White (2006) directly echoed the absence of practical behavioral approaches without concurrent medicinal treatment for aggressive ADHD symptoms in the educational world. Identifying the effectiveness of educational plans that implement RBBS could provide school districts with a greater understanding of effective ADHD–IA modification strategies that directly correlate to positive development in behaviors. Implementing proper modifications would adjust the trajectories of undesirable behaviors and require less medication-based solutions, thus promoting positive coping in the individual's adaptive functioning process. Ultimately, teaching ADHD–IA students to manage emotions and develop social and behavioral coping skills may result in positive change in a way that medication cannot accommodate.

Purpose

The purpose of the study was to analyze the effectiveness of using RBBS in SEP for reducing IA in children with ADHD in the academic setting. The study was guided by the social learning theory of aggression (Bandura & Walters, 1963). I compared the frequency of aggressive behaviors in students who have IEPs/504 plans that include RBBS and with the frequency among students who have IEPs/504 plans that do not use RBBS. The frequency of aggressive behaviors is the dependent variable to measure impulsive aggression. Aggressive behaviors fall into categories related to students' use of verbal aggression, aggression against property, autoaggression, and physical aggression. The independent variable is the inclusion of RBBS, as defined by research-based

strategies integrated to use the token-economy system method for decreasing IA behaviors. In this quantitative study, I examined the number and effectiveness of educational plans with written RBBS and measured the frequency of IA behaviors in students with ADHD. Effectiveness is determined by decreased negative response impulsivity and increased engagement in desirable behaviors over time.

Research Questions and Hypotheses

The study was driven by three quantitative research questions and associated hypotheses. These quantitative research questions sought to understand the relationship between the application of written ADHD behavioral intervention strategies with current public-school educational plans in reducing aggression. Through this analysis, I intended to provide further information standard implementation procedures of educational student plans that deal with conformity in ADHD aggression. Extensive consideration of the literature review and classroom observations led to the development of my research questions. In Chapter 3, I present a more detailed discussion regarding the nature of the study.

RQ1: What is the relationship between the inclusion of recommended RBBS and IEPs/504 plans in the classroom setting and the frequency of aggressive behaviors among students with ADHD and IA for 3 months and 6 months?

$H_0$1: There is no significant difference between the elected response expected from the inclusion of recommended RBBS for students with ADHD–IA that will establish a measurable influence for predicting positive reinforcers as reflected in their educational plans after 3 and 6 months.

$H_1$1: The elected response expected from the recommended inclusion of RBBS for students with ADHD and IA established a measurable influence for predicting positive reinforcers as reflected in their educational plans after 3 and 6 months.

RQ2: What is the relationship between the longevity of recommended IEPs/504 plans including RBBS in the classroom setting that continues to decrease the frequency of aggressive behaviors as measured among students with ADHD and IA after implementation for 3 months and 6 months?

$H_0$2: There is no relationship between longevity and the elected response expected from IEPs/504 plans that include recommended RBBS in the classroom setting that decreases the frequency of aggressive behaviors among students with ADHD and IA after implementation for 3 and 6 months.

$H_1$2: There is a positive correlation between longevity of elected response expected from IEPs/504 plans that include recommended RBBS in the classroom setting that decreases the frequency of aggressive behaviors among students with ADHD and IA after implementation for 3 and 6 months.

RQ3: What is the relationship between ADHD–IA as assessed by the modified overt aggression scale (MOAS; Kay et al., 1988) and students' association of mainstream classroom activity as measured by the school system disciplinary database?

$H_0$3: There is no relationship between aggression as assessed by MOAS (Kay et al., 1988) and students with ADHD–IA in mainstream classrooms within the academic setting.

$H_1$3: There is a positive correlation between ADHD–IA as assessed by the MOAS (Kay et al., 1988) and impulsive aggression such that students who report a higher level of activity in the school system disciplinary database score higher in overall aggression as assessed by the MOAS (Kay et al., 1988).

Theoretical Foundation

The social learning theory of aggression by Bandura and Walters (1963) explains that behavior, including aggressive behaviors, has a cognitive component that develops through direct physical interaction with the social setting during the process of exposure. An individual uses this process to evaluate the effectiveness and consequences of a behavior, which strengthens their automatic response for achieving the objective. The approach provides details on individual cognitive, environmental, and behavioral factors that jointly influence the behavior based on whether there is perceived value. Further, subsequent research and application of Bandura and Walters's (1963) theory offers guidance on ways to establish behavioral predictors of attitudes within an individual's moral system to bring about deliberate, preferable behaviors (Steinmetz et al., 2016) while following an education plan. As applied to this study, the elected response of decreased aggression expected from the recommended RBBS for students with ADHD and IA establishes a measurable influence on the stereotypical patterns of the disorder for predicting positive reinforcers as reflected in their educational plans.

Conceptual Framework

In the study, the social learning theory of aggression was used; its evolvement maintains that aggression is learned by observation and strengthened through social

learning: attention, retention, motivation, and reproduction. Bandura uses the term *modeling* to describe behavior responsible for learning specific acts of aggression. According to the theory, self-efficacy develops into the defining process of learning aggression as the person observes the consequences of executing specific behaviors; as a result, their actions allow the person to gain control of the outcome by repeating that behavior. Through self-efficacy, children with ADHD struggle with habit-forming consequences that can result in adult antisocial behavior (McKay & Halperin, 2006). ADHD is broadly categorized to include academic and/or antisocial behavior, self-esteem, and social function outcomes (Shaw et al., 2012; see also Shelton et al., 1998), which contribute to the IA behavior that develops as a comorbid condition of ADHD. Therefore, further investigation is needed about neurological disorders and how attention, retention, motivation, and reproduction often become habit-forming behaviors in children with ADHD.

Children with ADHD are subject to significant social difficulties and, as a consequence, are likely to experience rejection from their peers (Rich et al., 2009). Moreover, children with ADHD handle emotions and interactions differently than students without ADHD. Peer rejection among ADHD children is common and often leads to IA (Saylor & Amann, 2016). The conceptual framework of the study suggests that using RBBS could change and redefine IA behavior by using operant conditioning in a more constructive way. Children with ADHD–IA allow self-efficacy to be molded by aggression, especially in a school setting where a SEP has not implemented RBBS and

the student may experience peer rejection. These reactions foster a motivation to reproduce negative behavior when left uncorrected.

ADHD With Comorbidity IA

According to *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM–5; American Psychiatric Association [APA], 2013), within the general population of ADHD children, it is permissible that opposition defiant disorder or conduct disorder may co-occur. The DSM-5 also explains that ADHD is a disorder in which those affected have poor control over their thoughts, feelings, and behavior, further affecting the child's inattentive abilities and or hyperactive-impulsive tendencies. A well-known symptom of ADHD is impulsivity. Impulsivity invokes immediate responses and prohibits the delay of impulses that typically allow consequences to be measured and assessed before the behavior occurs (Saylor & Amann, 2016). Behavioral disinhibition leads to poor planning and task management (Moonsamy et al., 2009). Therefore, impulsivity associated with ADHD often leads to an immediate adverse reactions followed by oppositional behavior (Kapalka, 2006).

RBBS

For the study, the method of application for RBBS focuses on using token-economy system strategies. RBBS is not a specific approach for any one individual. The method of application is dependent on the token-economy strategy for reviewing the individual's pattern of behavior and finding a suitable approach that provides intervention and modification to negative habits in behavior. With a large variety of intervention options available for teachers, it is crucial that the chosen systematic intervention

considers the link between the ADHD child's adaptive functioning and undesirable behavioral patterns (Coles et al., 2005). Therefore, behavior management protocols written in SEPs should have interventions that explain both the principles of reinforcement and consequences to increase engagement in desired behaviors and decrease undesirable behaviors (Purdie et al., 2002). Consequences for children with ADHD should be immediate and should provide instruction and feedback to guide them to improve their behavior (Martinussen et al., 2011).

Nature of the Study

The nature of this research was quantitative, and I used a nonexperimental, correlational survey design. Quantitative research is consistent with understanding how designed educational plans approach ADHD students with IA, which is the primary focus of this study. Maintaining the focus on ADHD students with IA, behavioral strategies should be consistent with Bandura and Walters's (1963) aggression expectation for behavioral social development (Saylor & Amann, 2016). Objective ratings of children's behavioral outbursts of aggression were evaluated across time to elucidate how ADHD comorbidity of IA affects children and adolescents. The measurement tool used was the MOAS as adapted from Kay et al. (1988). The MOAS (Kay et al., 1988) is used to determine students' individualized accommodation plans for the number of occurrences of verbal aggression, aggression against property, autoaggression, and physical aggression. Based on the method of design for RBBS, the research questions evaluated whether behavioral problems increase or decrease the frequency of IA occurrences.

Definitions

504 plans: A system similar to an IEP that protects students with special needs and is pivotal in providing classroom supports to students. Students provided with this accommodation do not meet full eligibility for special education services under the IDEA program (Blazer, 1999).

Academic setting: The structure in which the interventions are implemented. The classroom is driven to both decrease undesirable ADHD behavior and increase an on-task mindset toward improving behaviors (Dupaul & Wyendt, 2006).

Aggression: Disruptive behaviors, including destruction of property, fighting, attacking, screaming, verbal aggression, aggression against property, autoaggression, and physical aggression (Saltaris, 2002).

Application of RBBS: Instruction or options based on multileveled interventions and modification dependent on the individual needs that are based on research behavioral management strategies (Lessing & Wulfsohn, 2015).

Classroom management: The scope in which student success depends on the classroom seating arrangement, clear and visible classroom rules, and understanding of teacher expectations (Marzano & Marzano, 2003).

Frequency of aggressive behaviors: A recorded number of occurrences in which aggressive behavior has been documented through behavioral records. This may include interviewing the school's certified faculty who have reported aggression from students with ADHD, as a possible source for triangulation.

Individualized education program (IEP): A written document from the Department of Education that indicates special education services a child will receive under the Individuals with Disabilities Education Act (Center for Arkansas Legal Services, 2017). In this program, district employees and parents create written guidelines for teachers to implement in their classrooms based on a child's needs, goals, and accommodations for special education (Siegel, 2011).

Impulsive aggression (IA): A habit-forming comorbid condition of retaliatory aggression that stems from frustration, annoyance, or hostility to real or perceived provocations. This behavior resembles an unplanned and immediate response, reflecting defiant emotionality to gain control (Saylor & Amann, 2016).

Mainstream: Classrooms may contain both children with disabilities and children without disabilities in the same educational environment (Siegel, 2011).

Proactive aggression: Aggression where the act is specifically goal-directed behavior that anticipates external gratification (Salmivalli & Nieminen, 2002).

Reactive aggression: Aggression where the impulsive retaliation response is prompted by the perception of a threat and considered to be a defensive response (Card, & Little, 2006).

Token economy: An umbrella term for RBBS that uses a form of intervention to reward system for reinforcing positive behaviors (Zlomke & Zlomke, 2003).

Assumptions

In this study, I assumed that similar signs and patterns of IA in children with ADHD would lead to comorbidity, as indicated by Saylor and Amann's (2016) research,

because school SEP profiles rarely explicitly outline the IA comorbidity in ADHD. However, most profiles specify distinctive indicators or predictors for aggressive tendencies that result in the child's future trajectory of aggressive behavior. I assumed that experience learned from the results of the student's IA could be redirected to avoid impulsiveness or negative behavior. Further, I assumed that, although ADHD shares an impulsive drive to act before evaluating consequences, the child would cognitively learn alternative long-term ways of coping with triggers by understanding that consequences influence behaviors (from consistently implementing RBBS strategies). I also assumed that children with ADHD are not categorized as having a severe case of impulsiveness, attention issues that prohibit long-term learning abilities, and medication that is consistently administered at appropriate doses.

Scope and Delimitations

In this study, I examined a middle-school special education ADHD population in a mainstream classroom environment. The data were collected from three charter schools located in central Arkansas. The primary source for determining population comes from rating the existing and previous educational plans related to a diagnosis of ADHD and documenting difficulties with IA, as a possible covariate. School records for this study come from behavioral records management systems, SEPs (IEPs and 504 plans), and student profiles. The social development of aggression was measured and should be consistent with Bandura and Walters's (1963) theory of social aggression as a possible covariate. The MOAS (Kay et al., 1988) provides a rating system for verbal aggression,

aggression against property, autoaggression, and physical aggression displayed by students as potential indicators for an increase or decrease in aggressive behaviors.

Limitations

Limitations of the study may come from the type of data sources and measurement used. Specifically, the reported number of aggressive occurrences is dependent upon the consistency of reporting behaviors in the management system by the teachers. An additional limitation comes from the inconsistency of profiles written with RBBS application and vague description of the aggressive behavioral pattern in student profiles. Pharmaceutical treatment is not an exclusionary variable for the study. Therefore, medicated children could affect the internal validity, making it necessary to modify the categories to reflect differences in IA across medicated versus nonmedicated student groups. A final threat to internal validity comes from the lack of teacher training needed to understand how RBBS is applied in mainstream classrooms. The acute lack of personal instruction to adequately accommodate ADHD students with disruptive or aggressive behaviors inevitably appears to stem from preservice training and critical proficiency in management skills (Oliver et al., 2011). However, there is a severe gap in understanding and expectation of what schools can reasonably provide for training in this area.

Significance

This study fills a gap in the research by assessing the effectiveness of RBBS in reducing IA in the academic setting among children with ADHD. The project is unique to address the underresearched and ever-growing population of children with ADHD who

also demonstrate IA. The results of the study may identify the benefits of implementing RBBS in educational plans to promote a reduction in aggressive behaviors in children with ADHD (or promote an increase in behavior modification in children with ADHD). The extant research using RBBS reveals a significant gap in ADHD and IA studies and a need for additional study to explore the effectiveness of current educational plans on emotional and behavioral disorders (Simpson, 2004). Behavioral studies of ADHD suggest that 10% of school-age children carry the same behaviors into adulthood, but more alarming is the significant concern toward the subset that manifests into substance abuse, antisocial behavior, and mood disorders as adults (Pliszka, 2016). Identifying the effectiveness of RBBS for reducing IA in children with ADHD in classroom settings could directly affect and serve as an early intervention for the 10% of individuals who manifest more problematic behaviors into adulthood.

This research has the potential to enhance accommodations for students who struggle with managing aggression and ADHD behaviors. The potential for social change is rooted in the increased insight for implementing more effective behavior modification and functional coping strategies for these students. The research may help teachers and other educators to better understand effective behavioral strategies and how to implement them in the classroom, resulting in an improved classroom environment, improved peer and teacher interactions, and reduced stress levels for the teacher. The research may also offer psychologists insights into providing targeted recommendations for developing educational plans and working with students who exhibit aggressive behaviors paired with ADHD.

Summary

ADHD with IA is a growing problem in special education systems. As more children with disabilities are integrated into mainstream classrooms, IEPs and 504 plans are becoming less effective in addressing behavioral aggression. IA can escalate the psychosocial burden of ADHD, leading to adult antisocial behavior (Saylor & Amann, 2016). In academic settings and classroom management, children diagnosed with ADHD are typically provided SEPs lacking clear expectations effective in addressing IA. There is a high percentage of SEPs that do not use RBBS to address the IA comorbidity of ADHD. Strategies for monitoring aggression patterns should use a token-economy system to record aggressive occurrences and provide rules that include consequences or rewards.

In this research, I evaluated whether IA became less frequent when aligned with RBBS. Chapter 2 will include an in-depth literature review on ADHD and IA behaviors in addition to the relationship to RBBS in school programs designed to correct aggression.

Chapter 2: Literature Review

Introduction

In this quantitative research, I used a nonexperimental correlation to test the theory. For this dissertation, a quantitative research design was appropriate for seeking to understand how designed SEPs approach children with ADHD and IA behaviors. ADHD children with IA behavioral patterns should be consistent with Bandura and Walters' (1963) aggression theory and Saylor and Amann's (2016) ADHD–IA behavioral social development theory to explain an increase or decrease in aggression. The MOAS (Kay et al., 1988) was used to determine students' individualized accommodation plans for the number of IA occurrences.

The significance of ADHD and comorbidity of aggression and disruptive behavior is well-established in the literature. Children who receive behavioral therapy are able to internally cope with situations that would otherwise be overwhelming, resulting in significant outbursts, further suggesting that behavioral intervention deters detrimental outbreaks (Saylor & Amann, 2016). Behavioral intervention strategies that improve coping skills not only reduce the number of aggressive outbursts during a child's development, but also improve a child's quality of life by altering a negative long-term trajectory as they enter adulthood (Coelho et al., 2015; see also Riffel, 2007). Empirical research suggests that although behavioral therapy may typically include a significant variety of practical strategies, children with ADHD are significantly affected by child-specific adverse modifications for voluntarily reducing possible aggression. As children diagnosed with ADHD–IA are placed more frequently in mainstream classrooms, the

notable absence of RBBS in SEPs may be inadvertently contributing to continued disruptive behavior in public schools. The lack of valuable information on the social development of adequately dealing with ADHD–IA in school settings, specifically through using RBBS, invalidates the classroom behavior management plans set forth by classroom teachers. To address ADHD–IA behaviors and the SEP gap in mainstream classrooms, reports of aggression through the school disciplinary databases were used to examine the relationship between children's IEP and 504 plans and increases in the level of aggression.

Overview of Chapter

The primary focus of this quantitative study was to carefully analyze the potential effectiveness of using RBBS in SEP for sufficiently reducing IA in mainstream students with ADHD in Grades 6 through 8. The research carefully examines the social learning theory of aggression (Bandura & Walters, 1963). The theory meaningfully compares the practical application of RBBS and documented frequency of aggressive behaviors among mainstream students diagnosed with ADHD enrolled in SEPs. IA is measured using the dependent variable, documented frequency of aggressive behaviors. Specific IA behaviors include antisocial behavior, distraction, disruption, negative mood changes, violent outbursts, displays/reports of anger, arguing, yelling, throwing objects, frequent loss of temper, anger, rageful outbursts, persistent irritability, and physical violence (Blader et al., 2016; see also Hubbard et al., 2010). The independent variable represents the practical application of RBBS that is traditionally defined through the token-economy system to deter IA. In this quantitative study, I examined the specific number of academic

plans with written RBBS and measured the precise frequency of aggressive behaviors in diagnosed ADHD students exhibiting visible signs of IA.

Literature Search Strategy

The comprehensive literature review is comprised of research on *impulsive aggression, ADHD, special education programs, special education plans,* and *ED special education population*. For the literature review, I focused primarily on peer-reviewed literature published within the last 10 years. Topics of *ADHD, IA, school education plans*, and *social learning theory* were cross-referenced through the Walden University Library using PsycINFO, PsycARTICLES, and education databases until all searches became exhausted and monotonous. Research data on ADHD comorbidity of IA are limited and require further study to help conceptualize the method. The comprehensive review of literature primarily focused on ADHD impulsiveness, aggression, and IEP/504 plans. Searches were focused on *attention-deficit disorder in adolescence, aggression, 504 plans, IEPs, IDEA,* and *special education plans* used to understand the methodology and epistemology of the disorder. References found in selected articles generated other relevant resources needed for the literature review process.

Theoretical Foundation

Aggression Theories

Through 1960, aggression was typically considered a standardized category of behavior (Kempes et al., 2005). Today, among the prevailing theories of aggression, there are two pronounced subtypes for categorizing aggressive behaviors. The subtypes are based on an aggressor's motivation for a human behavioral response and can be defined

as either *reactive* or *proactive* (Kempes et al., 2005; see also Saylor & Amman, 2016). According to Evans et al. (2015), reactive aggression and proactive aggression are distinctly different according to possible motivation and the intended functioning of the aggressive behavior. Reactive aggression is a behavioral response to apparent provocation in which an individual believes the direct consequence of antecedent conditions are hostile or threatening (Vitaro et al., 2006). Proactive aggression is an anticipatory behavioral response to maintain control of a situation (Fite et al., 2009). However, Saylor and Amman (2016) explained that ADHD–IA can result in unplanned frustration, visible annoyance, or considerable hostility to direct provocation or social stressors.

Theory of Impulsive Aggression as a Comorbidity of ADHD

Saylor and Amman (2016) carefully examined the fundamental concept of ADHD and IA beyond the traditional scope. Historically, ADHD has had a relationship to potential aggression as an isolated externalizing behavior; however, the most recent research has perceived them as two different diagnoses. IA is frequently linked to emotional impulsiveness as a defect in emotional self-control. That declaration directly relates to personal events that favorably influence emotional reaction and emotional dysregulation deficiencies in cognitive ability to reasonably manage the emotional state (Wehmeier et al., 2010). Saylor and Amman identified that IA should be viewed as a notable effect that is merely amplified by the negative consequence of ADHD and requires preventive intervention with ADHD-specific aggression-targeted therapy. The underlying themes among the various analysis of impulsive behaviors typically include

correctly determining the elevated level of decreased inhibitory control, distinct lack of focused attention typically leading to quick and careless decision making, and a bigoted delay toward tangible rewards (Winstanley et al., 2006).

ADHD With Aggression

ADHD is a neurological disorder that affects an individual's ability to sustain attention, control overactivity, and anticipate consequences before acting (Danforth et al., 2014). The complexity of the disorder can produce adverse outcomes, which are believed to amplify other comorbid disorders often present in conjunction with ADHD (Kieling & Rohde, 2010). Children with ADHD are prone to specific issues of emotional self-control or an inability to self-regulate personal responses. According to Harty et al., (2009), the disruptive presence of comorbid disruptive behavioral disorders that affect overt aggression could result in changes in physical aggression, verbal aggression, and/or multiple measures of emotional control (primarily those of anger).

Social Learning Theory of Aggression

The social learning theory of aggression designed by Bandura and Walters follows conditioning model in more practical ways than other learning behaviorist philosophies. Bandura and Walters (1963) added that the cognitive activity for a specific action takes form between stimuli and response and is typically learned through the observation of their environment. The observation of conduct and attitude responses displayed by others is internally processed and compared to the viewer's socially acceptable behavior. Thus, according to Bandura and Walters, modeling aggressive

behaviors requires that the child (a) pay attention, (b) remember observed activity, (c) replicate the ascertained behavior, and (d) adequately maintain the observed behavior.

Research-Based Behavioral Strategies

The methodology of RBBS in public schools is to assist behavior modification and effective prevention by universally allowing a unified approach. The chosen approach should focus on determining individualized procedures that both personalize student activity goals and minimize possible risk factors of aggressive responses for those with ADHD–IA tendencies. According to Schultz et al. (2011), specific instruction on individualized behavior techniques can effectively reduce disruptive conduct. Study results have supported that interventions using behavioral strategies typically improve social problems and prevent aggression (Sukhodolsky et al. 2016). The practical application of RBBS outlines ways to determine frequent causes and direct results of IA and includes practical recommendations to address whether a student met behavioral expectations (Coelho et al., 2015; see also Riffel, 2007).

Impulsive Aggression and ADHD Behavior

The comprehensive review of RBBS effectiveness in reducing IA in the academic setting among children with ADHD remains a vastly underresearched area. It presents a compelling opportunity for growth in development education, given the ever-growing population of ADHD-IA students. Moreover, the literature is even more limited on how IA comorbid with ADHD responds to RBBS-designed educational plans. Thus, behavioral results for similar ADHD aggression are often inconsistent.

Evans et al. (2015) conducted a study that examines the functions of reactive aggression and the hyperactive-impulsive behaviors as intended to achieve a specific goal. Their collaboration indicated a consistent association between ADHD symptoms and social rejection in adolescence. Explicitly, the study linked IA, hyperactivity-impulsivity, and peer rejection. However, the study was limited to teacher assessments of peer rejection. Showing further research is required to examine the differences in perspectives and populations. Evans et al. also mentions a clear relationship between ADHD and social impairment. Data about the dimension of ADHD systems and aggression that contributes to that association is hardly available. Spiel et al. (2014) explored IEPs and 504 plans in middle-school students with ADHD to identify best practices and evidence-based services. Their results indicated that students listed under the program had mixed outcomes and that primary limitation lacked information regarding comorbid disability categories and limited applications of evidence-based services. Thus, the academic literature that expands upon the complicated relationship between ADHD and evidence-based services is insubstantial.

ADHD–IA comorbid characteristics, however, require focused research to decrease the current gap in available research or information. It is an overwhelmingly challenging process for concerned educators and active school guardians to properly design behavioral management procedures for SEPs with RBBS that will decrease IA behaviors in mainstream students. Using RBBS when constructing IEP and 504 plans for ADHD students takes the following in consideration: specific IA responses, emotional self-control, and practical social problem-solving skills. The results of the study could

positively enhance the comprehensive understanding of vigilant guardians, experienced teachers, and academic counselors for proper modification for ADHD comorbid IA.

Summary

Comorbid IA with ADHD represents a developed pattern of conduct linked to an individual's impaired executive functioning (Saylor & Amann, 2016). The antisocial behavior of aggression along with impaired executive functioning is found in about 35-50 percent of adolescent children with ADHD (Nigg et al., 2005). Special Education and mainstream curriculums do not support behavioral interventions or effectively manage aggressive behaviors (Kobak et al., 2001). The possible etiology of the elected response expected from the recommended RBBS could decrease IA and future development of potential aggression. More deeply understanding the psychological aptitude that children with ADHD typically possess will increase the use and effectiveness of active coping skills when students face emotional events while in school. This process is aimed at providing social change that will both uniquely prepare children with ADHD–IA for appropriately effective self-regulating responses and further enhance public coping skills for future life decisions. Chapter 3 includes further information on the methodology used to explore ADHD with IA as well as current programs that apply RBBS to decrease aggression among adolescent children.

Chapter 3: Research Method

Introduction

The target population for this dissertation was children diagnosed with ADHD who sufficiently demonstrate comorbid characteristics of IA. Children with ADHD can develop problems like oppositional defiant disorder and other conduct disorders that may impact their academic and social development (Connor et al., 2019; see also Harvey et al., 2016; Saylor & Amann, 2016). However, academic studies in which researchers critically examine the comparative effectiveness of RBBS to decrease IA among children with ADHD are limited (Saylor & Amann, 2016). In addition, most SEPs frequently fail to use RBBS congruent with ADHD and IA behavioral modification plans. In this chapter, I carefully present the research design for this study.

Research Design and Rationale

The nature of this research was quantitative, and I used a nonexperimental correlational survey design to accurately assess academic plans incorporating RBBS on ADHD students with specific behaviors of IA. The goal of the study was to determine whether RBBS supports decrease in students' frequency of disruptive behaviors in standardized classrooms for children with ADHD and IA. The quantitative research questions were created to evaluate whether IA incidents increase or decrease when RBBS are used. I conducted this study at charter middle schools in central Arkansas where children with ADHD–IA are given IEPs and 504 plans. A survey was conducted evaluating academic plans for RBBS measures and necessary modifications for active aggression and the notable number of frequent outbursts in these students. Through the

survey, I gathered data to find a consistent correlation for carefully examining the direct relationship between aggressive behaviors and individual diagnoses of ADHD–IA and IEP/504 plans that use RBBS. The findings may influence ADHD–IA SEPs for the mainstream classroom, classroom procedures, and teacher classroom management, and the results may potentially lead to changes in district guidelines. Conceptually, the internalization of change leads to engaging schoolchildren with disabilities, which leads to improved school counselor consultations and potentially improved student learning (Milsom et al., 2007).

The participants in the study come from archival data generated from the records of school children in Grades 6 to 8 with an academic plan where a diagnosis of ADHD and IA behaviors was indicated. According to a 2011 survey, approximate demographics and state-based patterns estimate an ADHD prevalence in Arkansas at 14.6% of children ages 4–17 (Visser et al., 2014). I reviewed the archival data of 24 participants' profiles from the population that indicated IA behaviors. The official selection of the sample size was uniquely determined based on parameters being met in their education plan. The generalized population sampling will consist of both male and female students from a school that is listed as ethnicity diverse. Analysis of the research is drawn from a repeated measured analysis of variance (ANOVA) and the F-test models to predict the probability of aggressive behavior occurrences. The selected sample was tested to review the school's behavioral management records for aggressive behavior. Higher ratings for a school could signify fewer acts of aggression in the school setting. Behavioral data measurement calculates psychological data from the sample with a record of aggression.

The lack of training has a significant role in a teacher's self-efficacy to successfully cope with tasks, obligations, and challenges as they are related to their professional duties (Caprara et al., 2006). Self-efficacy derives from the social–cognitive theory of behavior designed by Bandura (1977), which is displayed from situational and domain-specific constructs (Bandura, 1986). Low self-efficacy in qualified teachers is often accounted for by lack of training (Giallo & Little, 2003; see also Klopfer et al., 2019; Pigge & Marso, 1997; Stough, 2006; Tillery et al., 2010). Giallo also explained that 83.5% of graduate and student teachers have indicated they were moderately prepared and self-efficacious, which requires additional training in behavioral management to overcome. Saylor and Amann (2016) explained that more people need to be properly trained to deal with ADHD–IA to help improve the long-range behavioral effects of the comorbidity.

With the growing number of children who have an ADHD diagnosis, it is estimated that about 62% are receiving medicine and 64% also have another associated mental, emotional, or behavioral disorder (CDC, 2019). ADHD medication and behavioral therapy are well-established among academic research and can be applied alone or in combination with either medication or therapy starting before the other (Pelham et al., 2016). Pelham et al. additionally noted in their classroom observations that behavioral strategies used before medicine frequently result in significantly fewer schoolroom violations; and they also reported no significant change when the medication is applied between stages. Although medicine does help with the treatment of behavioral

issues in children with ADHD, behaviors that can be corrected without medication as a primary driver to treatment should be explored.

Methodology

Students diagnosed with ADHD are at higher risk of comorbidity for various behavioral disorders. In addition to fidgeting, restlessness, and excessive talking, many of these children experience concurrent difficulties with aggression (Newcorn et al., 2001). School-based interventions typically apply accommodations designed to lower distraction, mainly from high noise levels and disruptive movements, to assist with academic performance, and to decrease frustration that may result in mood changes. Typical accommodations include (a) dividing work into smaller units, (b) giving extra time on a test, or (c) placing students in small group learning sessions (U.S. Department of Education, Office of Special Education Programs, 2008). In this study, I sought to determine whether accommodations using RBBS to address the IA comorbidity of ADHD decrease the occurrences of aggressive behaviors more successfully than accommodations without RBBS.

Population

The collected data are from students in Grades 6 to 8 in three central Arkansas charter schools. According to the ADE DATA Center (n.d.) the middle-school population is estimated to be approximately 237 students in each grade level. The students range from 10 to 14 years old. The districts include the local cities of Jacksonville with a population of 28,637; Sherwood with a population of 30,590; North Little Rock population of 66,144; and Little Rock with a population of 197,780. The charter school

system was recognized by the Arkansas Department of Education for its high level of growth on the ACT Aspire 2017 academic assessment. Socioeconomic levels among students' families range from lower, middle, and upper-middle classes. Most families commute approximately 5 to 10 miles to enroll their students at a charter school. The target population size is estimated to be between 12 and 25 participants per each grade level at each of the three charter schools in the district.

Sampling and Sampling Procedures

The participants identified in the study consisted of children in Grades 6 to 8 who have an SEP (IEPs or 504 plans monitored by a school counselor) and whose profiles revealed ADHD and signs of aggression before the start of the 2019–2020 school year. To maintain student anonymity, preexisting plans were not altered, nor will identities be disclosed. I reviewed 24 participants from the sample population in which school profiles documented difficulties with IA and presented these behaviors in their education plan. Calculation of sample size is predicated on collecting repeated measurements that can simultaneously increase statistical power while providing an evaluation of change across time (Guo et al., 2013). A power analysis using G*Power 3.0.10 software (Faul et al., 2007) calculates sample sizes for a repeated measure ANOVA within factors statistical analysis with medium effect size f = .25, $\alpha = .05$, and power (1 -β err prob) = .8 for statistical analyses. The measurements indicated the total study sample size for SEP was approximately 12 students with ADHD and IA for a minimum sample size. With the power (1 -β err prob) = .99 for statistical analysis, the indicated sample size will be 25 for maximum student profiles; therefore, the estimated sample size ranges from 12 to 25

student profiles. The use of a repeated measure ANOVA in the study decreases the need for a large study population as a within-subject design allows for generalizations of the population to account for the data of a specific population (Guo et al., 2013). Thus, a lower population size can statistically validate the results.

Procedures for Recruitment, Participation, and Data Collection

Students were selected once approval from the Walden University IRB and the superintendents of the Charter schools was obtained. I provided information about the ADHD–IA population to school counselors. The schools use a software system called *DeansList* for teachers and administrators to report positive and negative behavior. If IA behavior was reported in the disciplinary system, the student's profile was checked to confirm whether RBBS was present in the SEP. MOAS (Kay et al., 1988) was the behavior analysis tool used. The school's counselor provided access to student educational plan records and I reviewed and evaluated them each for possible selection for the study. Being selected for the study indicated that the student was diagnosed with ADHD and had aggression listed among behavior issues. An initial report determined students identified for the study. The students' profiles and DeansList reports were examined twice using MOAS (Kay et al., 1988). An ANOVA statistical analysis was conducted to compare the third month from the study's commencement to the sixth month. The demographics of the children were those in sixth to eighth grade, ages 11 to 14. The sample contains both male and female students. Ethnicity and race were not considered as targeting factors because the school is listed as having a culturally diverse student population.

Instrumentation and Operationalization of Constructs

The instrument used is the MOAS as modified from Kay et al. (1988). The test, known initially as the *overt aggression scale,* was designed to make a countable record of severity of aggressive outbreaks (Oliver et al., 2007). According to Oliver et al. (2007), in the overt aggression scale, there are four main categories of aggression: (a) verbal aggression, (b) physical aggression against objects, (c) physical aggression against self, and (d) physical aggression against others. That scale later evolved into a weighted version called the MOAS (Kay et al., 1988). Kay et al.'s (1988) modification was based on Yudofsky et al. (1986) and was used to measure the prevalence of aggression for 264 aggressive adult psychiatric inpatients. The MOAS also tested intellectual disability and aggressive behavior with an intraclass correlation coefficient MOAS total score of .93 (Oliver et al., 2007). Furthermore, the MOAS showed to have a significant reliability on youths with autistic disorder ranging from ages 7 to 19 (Hellings et al., 2005). These findings support the reliability, validity, and retesting ability of the MOAS (Kay et al., 1988). The MOAS is now a widely used tool for measuring or assessing aggressive behaviors, risk factors, and effects of medication.

Student Profiles

The student profiles contain information on the students' psychological, medical evaluations. A profile is created when a student has been referred and contains the present level of performance and how the child's disability affects participation in the general education curriculum. The school and teachers are legally responsible for applying modifications for the respective student. For this study, the student profiles were

used to establish that the student had been diagnosed with ADHD, the psychology assessment indicated aggression in their behaviors, and that the student had been assigned an IEP or 504 plan. Descriptions of program modifications and supports for school personnel within the IEP or 504 plan filed in the profile were checked for wording that indicated aggression. In addition, the profiles provided other categorizing information, such as age, gender, grade, modification, and medication.

DeansList Software

DeansList software is a tool used by the school district to monitor classroom behavior and school culture. The program also provides direct family engagement and communication that helps a family track students' grades, attendance, behavior, homework, and referrals. The access to data is logged in the parent portal; in addition, the system also sends emails, text messages, phone calls, and positive reinforcement comments to parents. Teachers use this tool daily to award points for good behaviors and deduct points for bad behaviors. In the study, the recorded deducted points for aggression were used and gathered at 3-month and 6-month intervals.

Research Questions

This quantitative research was driven by three questions and associated hypotheses. In this quantitative study, I sought to understand the relationship between the application of written ADHD behavioral intervention strategies with current public-school educational plans in reducing aggression at 3 and 6 months.

RQ1: What is the relationship between the inclusion of recommended RBBS and IEPs/504 plans in the classroom setting and the frequency of aggressive behaviors among students with ADHD and IA for 3 months and 6 months?

$H_0$1: There is no significant difference between the elected response expected from the inclusion of recommended RBBS for students with ADHD–IA that will establish a measurable influence for predicting positive reinforcers as reflected in their educational plans after 3 and 6 months.

$H_1$1: The elected response expected from the recommended inclusion of RBBS for students with ADHD and IA established a measurable influence for predicting positive reinforcers as reflected in their educational plans after 3 and 6 months.

RQ2: What is the relationship between the longevity of recommended IEPs/504 plans including RBBS in the classroom setting that continues to decrease the frequency of aggressive behaviors as measured among students with ADHD and IA after implementation for 3 months and 6 months?

$H_0$2: There is no relationship between longevity and the elected response expected from IEPs/504 plans that include recommended RBBS in the classroom setting that decreases the frequency of aggressive behaviors among students with ADHD and IA after implementation for 3 and 6 months.

$H_1$2: There is a positive correlation between longevity of elected response expected from IEPs/504 plans that include recommended RBBS in the classroom setting that decreases the frequency of aggressive behaviors among students with ADHD and IA after implementation for 3 and 6 months.

RQ3: What is the relationship between ADHD–IA as assessed by the modified overt aggression scale (MOAS; Kay et al., 1988) and students' association of mainstream classroom activity as measured by the school system disciplinary database?

$H_0$3: There is no relationship between aggression as assessed by MOAS (Kay et al., 1988) and students with ADHD–IA in mainstream classrooms within the academic setting.

$H_1$3: There is a positive correlation between ADHD–IA as assessed by the MOAS (Kay et al., 1988) and impulsive aggression such that students who report a higher level of activity in the school system disciplinary database score higher in overall aggression as assessed by the MOAS (Kay et al., 1988).

Data Analysis Plan

Analysis of the research for educational plans written with behavioral strategies and aggression is drawn from the student's profile as long as it properly meets four key components of grade, age, ADHD-IA, constructs for addressing the behavior of IA. It is analyzed using correlations, repeated measure ANOVAs, and the F-test models to predict the probability of aggression in charter school students. The repeated measure ANOVA then compares the effect of the application of RBBS on the frequency of aggressive behaviors in students with educational plans. The repeated measure ANOVA and F-test procedures in SPSS are used to perform the analysis. Selected populations are tested to review schools' interventions for aggressive behavior. The higher the ratings for a school, the less likely the introduction of aggressive acts in school settings. Behavioral data measurement calculates data from the population with a record of aggression.

Educational plans centered around behavioral wording negatively contribute to aggression in schools among ADHD students.

All data collected from the ADHD-IA RBBS/behavioral profile questionnaire (see Appendix A) and MOAS (Kay et al., 1988) were entered, analyzed using SPSS, and stored on an external drive. Data collected during the study were retained using a password-protected personal computer and sealed in an encrypted portable thumb drive to secure participant information. The data collected were secured and will be kept up to 5 years, at which point all data containing personal details will be destroyed. The following guidelines of the Walden University Office of Research Integrity and Compliance will be used to delete necessary information.

In the study, the ADHD-IA RBBS/behavioral profile questionnaire (see Appendix A) contains the demographic, descriptive, and modification variables of student profiles and aggressive behavior activity. The MOAS (Kay et al., 1988) provides the moderating variable of aggressive behaviors demonstrated throughout the 3 and 6 months. Profiles that do not meet study parameters have been excluded. Profiles' meeting parameters have been examined by implementing a repeated measure ANOVA descriptive statistic to accurately compare the means based on repeated observations (Guo et al., 2013). Correlational statistics explore the relationship between the practical application of RBBS, SEP, and the documented frequency of aggressive behaviors.

Statistical Test

The G*Power 3.0.10 (Faul et al., 2007) software is used to accurately determine the adequate sample size needed to properly conduct a repeated measure ANOVA. The

IBM SPSS (version 25) is used to perform a consistent correlation to carefully examine the relationship between aggressive behaviors noted in school disciplinary monitoring system (Deans List) on the MOAS (Kay et al., 1988) and the moderator variables of individual IEP/504 plans, ADHD diagnosis, and listed factors of IA in the profile. A one-way repeated measured ANOVA evaluates the specific questions for change in the children with ADHD-IA IEP/504 plans behavioral IA scores over three and six months. The Wilks Lambda (Shi & The Odum Institute, 2019) is used to objectively assess whether the means of two or more continuous variables differ across two or more categorical variables in the data set. The value were consistent with the G*Power medium effect size 12 to 25 and $\alpha = .05$ to indicate a significant effect over time for an aggression score at three different times: initial, 3 months, and 6 months. The pairwise comparison determine notable change of aggression increased or decreased throughout the study. The following comparison indicated significance for each pairwise difference. For example, if $p < .01$ is reported, a significant increase in the score occurred over time, suggesting that the participants in the IEP/504 Plan groups increase in the student levels of aggression without written RBBS. Thus, proving significant evidence to reject or validate the testable hypothesis or the null hypothesis questions.

RQ1 Statistical Analyses

The statistical analyses tested the relationship between the inclusion of recommended RBBS and IEPs/504 Plans in the classroom setting and the frequency of aggressive behaviors among students with ADHD and IA for 3 and 6 months, thus uncovering patterns and trends for the frequency of occurrences. The repeated measured

analysis of variance (ANOVA) evaluated the null hypothesis that there is no change in frequency aggressive that occurred when measured before, during, and after a profile in students with ADHD and IA group to either accept or reject the null hypothesis. Follow up comparison used the pairwise difference determines non significance or significance. Significance indicatds an increase in scores over time, suggesting that profiles of students with ADHD inclusion of recommended RBBS levels of aggression frequency increased level of aggression.

RQ2 Statistical Analyses

The statistical analyses tested the relationship between the longevity of recommended IEPs/504 plans inclusion of RBBS in the classroom setting that continues to decrease the frequency of aggressive behaviors as measured among students with ADHD and IA after implementation for 3 and 6 months uncovered patterns and trends for the longevity of inclusion of RBBS in the classroom setting. The repeated measure ANOVA evaluated the null hypothesis that there is no change in longevity aggressive occurrence when measured before, during, and after a profile in students with ADHD and IA group to either accept or reject the null hypothesis. Follow up comparison using the pairwise difference determines non significance or significance. Significance will indicate a decrease in scores over time, suggesting that profiles of students with ADHD inclusion of recommended RBBS levels of aggression longevity decreased level of aggression.

RQ3 Statistical Analyses

The statistical analyses tested the relationship between the MOAS (Kay et al., 1988) and students association of mainstream classroom activities as measured by the system disciplinary database uncovered patterns and trends in the classroom. The repeated measured ANOVA evaluated the null hypothesis that there is no change in the school's system disciplinary database when measured before, during, and after students association of mainstream academic setting group to either accept or reject the null hypothesis. Follow up comparison using the pairwise difference determined non significance or significance. Significance indicated an increase in scores over time, suggesting that student's association of mainstream academic setting increased the level of occurrences in the school's system disciplinary database.

Threats to Validity

Sampling is conducted using students with ADHD and signs of aggression in three charter schools, in which classroom sizes are typically smaller than general public schools and may not be representative of the more extensive middle school settings in more prominent districts. Even though the SEP in the school system have specific guidelines, the inconsistency among school profiles may require a generalization of the findings, which may be limited.

Additionally, sampling a population where clear IA aggression is not a clinical diagnosis of comorbidity in the student's profile makes it difficult to establish if aggression is reactive or proactive. For example, distinguishing whether a student with ADHD hits another student in a thought out and proactive manner for external

gratification or in a reactive and impulsive manner for defense against triggers may be difficult. Proactive aggression indicates other deeper-rooted issues.

Ethical Procedures

All students' names remain under a controlled environment only accessible by the researcher. The school counselor receives the full listing of the student profiles pulled for review but the names of the selected students remains anonymous. Selected students for the study are assigned an identification number logged in a password-protected document. Paper copies of disciplinary reports, printed copies of IEP/504 plans, and MOAS (Kay et al., 1988) are locked in a safe box. All items about the study are held and secured up to 5 years, at which point all data containing personal information will be destroyed. However, SPSS-produced data are password-protected and stored according to IRB requirements. Furthermore, the researcher had no direct interaction with selected students to explain the study; in addition, students are not informed of their selection for the study.

Protection of Human Subjects

Children are considered vulnerable groups. The required information comes from archival data produced from the official records. Official records are provided from the student's IEP/504 Plan profiles and generated reports from the schools' disciplinary system to protect the confidentiality of the children. To ensure that no potential harm comes to the child, they are not engaged directly, and SEPs are not modified during the course of this study. The data collected for the research is secured on a password protected hard drive and hardcopies in a security box for 5 years. After this point, they

are deleted to ensure guidelines of the Walden University Office of Research Integrity and Compliance are met. The school receives a copy of the published results and are available following the successful completion of the study.

Ethical Considerations

Informed consent were obtained by the school superintendent. The informed consent clarifies that records are unmodified and that student profiles are confidential. Potential risks and benefits of the study were presented appropriately to all necessary participants before the quantitative analysis was conducted.

The researcher's potential bias in scoring is carefully avoided by preventing students from whom the teacher is directly involved in his or her education process. Additionally, permission to utilize the MOAS (Kay et al., 1988) is unrequired and determined to be a valid scale as well as accessible for practical use.

Summary

This quantitative, nonexperimental correlational survey examined middle-school children in charter schools that have ADHD with IA characteristics to determine RBBS effectiveness in SEP in decreasing reactive aggressive behaviors. The general descriptions are that students with ADHD and characteristics of IA may have poor social skills and may develop negative antisocial behavior. The power analysis for this study will be G*Power 3.0.10 software and a repeated measure ANOVA analysis to test the hypotheses.

Chapter 4: Results

Introduction

This quantitative nonexperimental study was conducted in the central Arkansas within an A-rated charter school district. The study's purpose was to interpret the effects of SEPs when proper RBBS were included regarding student aggression, the long-term trajectory of negative behavior, and the influences on standardized classroom conduct, particularly among schoolchildren with ADHD in mainstream classrooms. The inquiry was focused on the impact of RBBS on students' aggressive behavior directed by the specificity of the research questions. This study's outcome is intended to inform and guide school counselors in developing more quality accommodations to assist ADHD students in learning and behaving in the classroom. This study's results may also support parents, teachers, and counselors in better understanding and improving the SEP process, primarily when assisting ADHD students and the class environment. This chapter includes a review of the data collection process described in Chapter 3, the study characteristics, data analysis, quality of the trustworthiness, and a summary. The study was based upon the following research questions:

RQ1: What is the relationship between the inclusion of recommended RBBS and IEPs/504 plans in the classroom setting and the frequency of aggressive behaviors among students with ADHD and IA for 3 months and 6 months?

$H_0$1: There is no significant difference between the elected response expected from the inclusion of recommended RBBS for students with ADHD–IA that will

establish a measurable influence for predicting positive reinforcers as reflected in their educational plans after 3 and 6 months.

$H_1$1: The elected response expected from the recommended inclusion of RBBS for students with ADHD and IA established a measurable influence for predicting positive reinforcers as reflected in their educational plans after 3 and 6 months.

RQ2: What is the relationship between the longevity of recommended IEPs/504 plans including RBBS in the classroom setting that continues to decrease the frequency of aggressive behaviors as measured among students with ADHD and IA after implementation for 3 months and 6 months?

$H_0$2: There is no relationship between longevity and the elected response expected from IEPs/504 plans that include recommended RBBS in the classroom setting that decreases the frequency of aggressive behaviors among students with ADHD and IA after implementation for three and six months.

$H_1$2: There is a positive correlation between longevity of elected response expected from IEPs/504 plans that include recommended RBBS in the classroom setting that decreases the frequency of aggressive behaviors among students with ADHD and IA after implementation for 3 and 6 months.

RQ3: What is the relationship between ADHD–IA as assessed by the modified overt aggression scale (MOAS; Kay et al., 1988) and students' association of mainstream classroom activity as measured by the school system disciplinary database?

$H_0$3: There is no relationship between aggression as assessed by MOAS (Kay et al., 1988) and students with ADHD–IA in mainstream classrooms within the academic setting.

$H_1$3: There is a positive correlation between ADHD–IA as assessed by the MOAS (Kay et al., 1988) and impulsive aggression such that students who report a higher level of activity in the school system disciplinary database score higher in overall aggression as assessed by the MOAS (Kay et al., 1988).

Setting and Demographics

The participants' profiles were acquired from school counselors responsible for conducting meetings and writing SEPs for students with ADHD in mainstream classrooms. All profiles provided were for students assigned to mainstream classrooms. The study's 24 participants included students in Grades 6–8 with IEPs and 504 plans and a diagnosis of ADHD. Ethnicity and race were not considered as a variable factor for behavior in this analysis. There were 11 female student profiles and 13 male student profiles, with nine 504 plans and 15 IEPs. The students enrolled in the charter school district are expected to follow an academically rigorous curriculum to maintain the school's top 10% status among public middle schools in the state.

Data Collection

Permission was obtained from the Walden University institutional review board (IRB, Approval #10-30-20-0595752) to conduct a quantitative research study. As outlined in the data collection parameters described in Chapter 3, participant profiles were selected from school counselors' files. These files were screened to verify each

student had been diagnosed with ADHD. Students with ADHD were the focus of the study because of the growing population of these students in mainstream classrooms. The repeated measure ANOVA helped improve understanding and conceptualize children with ADHD–IA behavioral problems for educators. Counselors removed all identifying information from profiles before data were transmitted to me. Prior to the review, all profiles and disciplinary reports were classified with a single-digit number to identify specific files. Data received by the counselor were not shared with anyone, and profiles were placed in a safety lock box to ensure privacy and protection of secure data. The study's procedures followed the processes depicted in Chapter 3 for the study's research method. The data collection plan presented in Chapter 3 was followed by securing data per IRB suggestion. Data collection involved reviewing disciplinary information reported throughout 2019 and 2020 for each student profile. Student disciplinary reports provided a timeline of the frequency of behaviors, when the behaviors occurred, and types of positive or negative behaviors that occur while at school. In total, 24 profiles were used to complete the data set. The profiles were selected based on the availability of students with ADHD in Grades 6 to 8. This range in selected grade levels helped to target the ADHD population, which is scarcely studied in standardized classrooms. This number exceeded the minimum of 13 participants required to correlate the repeated measure ANOVA as determined by the statistical power analysis using G*Power 3.0.10 (Faul et al., 2007), the effect size $\eta^2 = \frac{F\ x\ df effect}{F\ x\ df error}$ for an Eta-squared within-subjects comparisons (Lakens, 2013).

Data Analysis

The statistical analyses were used to examine the relationship between the inclusion of recommended RBBS and IEPs/504 plans in the classroom environment and the frequency of aggressive behaviors among students with ADHD and IA at 3 and 6 months, thus uncovering patterns and trends for the consistency of occurrences. The analyzed correlations from the repeated measure ANOVA and F-test models were used to predict the probability of aggression in charter school students. The data for patterns were analyzed via a second repeated measured ANOVA using the school's disciplinary reports. The points accumulated to establish aggression patterns for each student at 3 and 6 months. The results from the repeated measure ANOVA were applied to compare the effect of the application of RBBS on the frequency of aggressive behaviors in students with academic plans. The data, in addition, were used to determine schools' interventions for aggressive behavior. Wilks' lambda (Shi & The Odum Institute, 2019) was used to assess the means of two continuous variables across the categorical variables in the data set.

Results

Preliminary Analysis

Students' profiles were reviewed using Appendix A; the questions provided the study with guidelines for selection and key information pertaining to the profiles selected. For instance, information in the appendix shows that more than half of the profiles did not contain RBBS. More than half the profiles explicitly contained a check mark for a section labeled no additional behavior requirements needed. However, in the comments

section, counselors did include recommendations that the student be redirected through "other behavioral modifications" as needed. The suggested "other behavioral modifications" did not have clarification or guidance that would have explained how to proceed with the additional modifications. The ADHD–IA RBBS/behavioral profile questionnaire indicated that Question 1 had a 67% no response for profile modification addressing RBBS for students' aggression behaviors.

Detailed Analysis

Data analysis was conducted using SPSS 25 software package. Exploratory data analysis appear in Table 1 based on the Wilks lambda test (Shi & The Odum Institute, 2019) for the repeated measured ANOVA, which indicated that change was present.

Table 1

Multivariant Tests, MOAS Over Time

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta squared	Noncent parameter	Observed power[c]
MOAS_Over_Time	.533	9.643[b]	2.000	22.000	.001	.467	19.286	.964

a. Design: Intercept, Within Subjects Design: MOAS_Over_Time; b. Exact statistic; c. Computed using alpha = .05

A repeated measure ANOVA was conducted to compare the effects of the independent variable *inclusion of RBBS* on the dependent variable *frequency of aggressive behaviors* to examine longevity and pattern conditions. There was a significant difference on the independent variable inclusion of RBBS in IA on students with ADHD throughout time, F (2, 22) = 9.64, $p < .05$; Wilk's $\Lambda = 0.533$, partial $\eta^2 = .47$. As Table 2 shows, in the first analysis for frequency and longevity, Mauchly's test of

sphericity indicated that the assumption of sphericity had not been violated, x^2 (2) = 4.345, p = .114.

Table 2

Mauchly's Test of Sphericity, MOAS Over Time

						Epsilon[b]	
Within subjects effects	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhous-Geisser	Huynh-Feldt	Lower-Bound
MOAS_Over_Time	.821	4.345	2	.114	.848	.908	.500

Note. Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed the dependent variable is proportional to an identity matrix. a. Design: Intercept, Within Subjects Design: MOAS_Over_Time; b. May be used to adjust the degree of freedom for the average tests of significance. Corrected tests are displayed in the Test Within- Subject Effects table.

As Table 3 shows, in the behavioral database report repeated measure ANOVA, there was a significant difference in the independent variable inclusion of RBBS in IA on students with ADHD throughout time, F (2, 22) = 16.72, p < .05; Wilk's Λ = 0.397, partial η^2 = .603.

Table 3

Multivariant Tests, Behavior Over Time

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent Parameter	Observed Power[c]
IA_Behavior_OverTime	.397	16.719[b]	2.000	22.000	.000	.603	33.439	.999

a. Design: Intercept, Within Subjects Design: IA_Behavior_OverTime; b. Exact statistic; c. Computed using alpha = .05.

For the second analysis for patterns and trends, see Table 4, Mauchly's test of sphericity, which indicated that the assumption of sphericity had not been violated, x^2 (2) = 1.369, p = .504.

Table 4

Mauchly's Test of Sphericity, Behavior Over Time

					Epsilon[b]		
Within Subjects Effects	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhous-Geisser	Huynh-Feldt	Lower-Bound
IA_Behavior_Over_Time	.940	1.396	2	.504	.943	1.000	.500

Note. Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed the dependent variable is proportional to an identity matrix. a. Design: Intercept, Within Subjects Design: IA_Behavior_Over_Time; b. May be used to adjust the degree of freedom for the average tests of significance. Corrected tests are displayed in the Test Within-Subject Effects table.

RQ1, Frequency Statistical Analyses

To test the first hypotheses, the relationship was assessed between the inclusion of recommended RBBS and IEPs/504 plans to determine the frequency of IA in classrooms. The MOAS was used to examine the classroom setting and frequency of aggressive behaviors among students with ADHD and IA. The repeated measured analysis of variance (ANOVA) conducted to evaluate the null hypothesis showed a change in frequency of aggressive occurrence. Within the first 3 months, there was an increase in behaviors according to descriptive statistics from behavioral reports (M = 2.33, SD = 2.036) and measured aggression (M = 7.46, SD = 8.145) as measured respectively, which

were found significant on both Wilks' lambda and pairwise comparisons. When IA was measured before, during, and after a profile in students with ADHD and IA group (N = 24), there was a significant behavior change. The results of the ANOVA indicated a significant time effect, Wilks' lambda = .533, F (2,22) =9.64, $p < .05$, $n^2 = 24$. As indicated on the multivariant tests using the Wilks' lambda, the scale value showed .533 with a significant value of .001, which is less than the alpha value of .05; thus, there was a statistically significant effect for change in aggression over the 6-month duration of the study. Further examining the Wilks' lambda showed the effect size .467 and observed power .964 to have a strong validity in accuracy. Thus, there is significant evidence to reject the null hypothesis. In Table 5, a follow-up comparison indicates that each pairwise difference was significant, $p < .001$.

Table 5

Pairwise Comparison

					95% Confidence Interval for Difference[b]	
(I) MOAS_Over_Time	(J) MOAS_Over_Time	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
1	2	-7.458*	1.663	.001	-11.751	-3.165
	3	-2.625	1.137	.091	-5.561	.311
2	1	7.458*	1.663	.001	3.165	11.751
	3	4.833*	1.403	.007	1.209	8.457
3	1	2.625	1.137	.091	-.311	5.561
	2	-4.833*	1.403	.007	-8.457	-1.209

Note. Based on the estimated marginal means; * = The mean difference is significant at the .05 level; b = Adjustment for multiple comparisons: Bonferroni.

RQ2, Longevity Statistical Analyses

The second hypothesis determines a relationship between the longevity of SEP inclusion of RBBS as measured by the MOAS and the decrease of the frequency of IA behaviors. A pairwise comparison was implemented to compare aggressiveness over time from the MOAS ratings from the student's initial starting IA score (M = .00; SD = .000), 3-month score (M = 7.46; SD = 8.15) and 6-month score (M = 2.62; SD = 5.57). The results F (2, 22) = 9.64, $p < .05$; Wilk's $\Lambda = 0.533$, partial $\eta^2 = .47$ indicated there was a significant relationship between the two variables, and the null hypothesis was rejected. The results indicated a significant relationship between time points (F (2,22) = 9.64, $p <$ .05) and the null hypothesis was rejected. Post hoc tests revealed that longevity with an RBBS written profile significantly related to behavior change among ADHD students' profiles. An increase over the first 3 months was detected and a slight decrease after that in scores over time. With 6 months still considerably higher than the initial start, this finding suggests that students with ADHD inclusion of recommended RBBS levels of aggression longevity increased IA level. Therefore, it is concluded that long-term inclusion of RBBS (6 months) has a statistically significant increase in ADHD–IA behavior, with the first 3 months of school being the most critical.

RQ3, Patterns and Trends Statistical Analyses

To test the third hypothesis that investigated the relationship between the MOAS and students association of mainstream classroom activities as measured by the system disciplinary database. A post hoc pairwise comparison was used to comparing aggression overtime scores on the DeansList behavioral database report from the student's initial

starting aggression score (M = .00; SD = .000), 3-month aggression score (M = 2.33; SD = 2.04), and 6-month aggression score (M = 1.38; SD = 1.97). The results indicated a significant relationship between the time and points awarded ($F(2, 22) = 16.72$, $p = .000$). The repeated measured ANOVA evaluated the null hypothesis that there is no change in the school's system disciplinary database as measured before, during, and after students' association with the mainstream academic setting group, which was found to reject the null hypothesis. A repeated measured ANOVA determined that IA behavior over time scores differed significantly across each time point. Therefore, concluding that the repeated measured ANOVA results indicate a significant time effect for the student's association of mainstream academic setting with increased occurrences in the school's disciplinary database system. Summary of the data determined that ADHD students with IA repeated behavior more frequently and was consist to social learning theory of aggression evolution of behavior as predicted by Bandura & Walters (1963). Thus, the lack of RBBS guidance in SEP modification utilized in the classroom made it possible to for the student to conclude that aggression was a viable solution to resolving interpersonal conflicts with relatively successful results.

Summary

This chapter contained a comprehensive look at the study's findings and results based upon the research questions period; the chapter also included in-depth explanations of the quantitative method of data collection, an inductive process of data analysis, and the findings of the results related to the research question. The study's focus examined the relationship between RBBS and SEP modification. That comprised three research

questions evaluating longevity, frequency, and the overall behavioral patterns for possible IA behaviors in ADHD students found in mainstream classrooms. A more in-depth look at RBBS modifications for students with ADHD indicates that students are more likely to demonstrate change in daily behavioral patterns when there is an inclusion of RBBS within IEP/504 plans. The frequency of the behavior changes is more likely to occur within the 1st three months. It may decrease or increase depending on the type of support given by educators. The longevity may decrease overtime provided there is positive correction utilized by the disciplinary system in which the student fines value. The majority of participant children's overall behavior patterns seemed to decrease after 3 months of discipline by the school district, as indicated by the drop in Pairwise Comparison (*7.46 vs 4.833, p = .007*) from 3 to 6 months. Further insight gains for the analysis are explored in Chapter 5, along with interpretations of the finding in relationships to the literature review, conclusions, limitations of the study, and future research recommendations.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In this quantitative study, I examined the relationship between RBBS and IA among ADHD students in mainstream classrooms in a central Arkansas charter school district. Educators are expected to follow interventions of standardized criteria for modifying behaviors for an increasing number of students diagnosed with ADHD–IA and those diagnosed with other disorders or deficiencies (Harrison et al., 2013; see also Joyce et al., 2020; Zendarski et al., 2020). This challenges educators to make proper student modifications that hinder reasonable learning expectations and behavioral adjustments, which can be overwhelming to the student, leading to a greater frequency of emotionally motivated reactive aggression (Slaughter et al., 2020). The extant literature indicates that children with ADHD may benefit from behavioral-specific modification that helps improve social skills (Ornaghi et al., 2014; see also Parke et al., 2018). Given the social influences that help mold ADHD–IA behavior, particularly the effects of schools' services and the limited research addressing the ADHD–IA students, there was a need for research revealing the influences of SEP modification on ADHD–IA.

The main findings from this study indicates that students with ADHD–IA who have SEPs that include RBBS are more likely to develop reactive aggression within the first 3 months. However, aggression among some students was slightly affected at 6 months by the school's overall disciplinary system. In addition, students with ADHD–IA had a positive correlation with identification to behavioral patterns to both increased frequency and longevity of aggression among IEP/504 plan modifications. Although the

school disciplinary system provided partial support, increased ADHD–IA among students was only significantly positively correlated to the inclusion of RBBS among SEP modifications. This chapter includes an overview of the study purpose, nature, key findings, interpretation of findings, limitations of the study, recommendations implications for positive social change, and the study's conclusion.

Interpretation of the Findings

The key findings in this study were revealed that in relationships between the inclusion of recommended RBBS in IEPs/504 plans and the frequency of IA in classrooms, frequency of IA was found to have significant increase in the daily activities of the student when they believed the successful outburst was acceptable. This is consistent with Saylor and Amann's (2016) results that children with ADHD–IA struggle with daily decisions related to social functioning and escalating dysfunction. This results is also consistent with Bandura's (1977/2017) theory on defensive forms of aggression which is frequently reinforced by their ability to minimize what is considered emotionally humiliating or painful. According to Allen and Anderson (2017), aggression has many forms among general aggression models; however, the common classifications are physical, verbal, and relational. For each child with ADHD, modifications written in their applicable SEP directly relate to the student's understanding, coping, and management of daily activities to better support behavioral functioning in the classroom. Standardized classroom management strategies as trained to teachers may not adequately address the needs of a student with ADHD–IA. According to Gaastra et al. (2020), this is a common phenomenon in which teachers report standardized classroom management strategies as

ineffective when trying to conform ADHD students to a model of evidence-based effectiveness of student learning.

The results of the second hypothesis that focused on a relationship between the longevity of SEP inclusion of RBBS, inclusion of RBBS was found to increase the student's aggressive trajectory that escalates the outburst of behaviors that manifest. There was a natural progression that transitions from verbal to physical outburst of aggression. This was consistent with Girard et al.'s (2019) finding that chronic engagement of functions of aggression create a greater risk of negative consequences. The frequency of ADHD–IA-related behavior had high growth within the first 3 months but then declined slightly by the 6-month time. The increased frequency of IA is consistent with a defensive form of aggression that is stimulated by the child's perception that they are experiencing an immediate threat; thus, their response automatically attempts to reduce or eliminate distressing situations through aggression if perceived to be successful (Connor, 2003; see also Veroude et al., 2016).

Associated with the third hypotheses is that student's aggression has an association to mainstream classroom activities that could be measured by the disciplinary database system, aggression in mainstream classrooms was found to have significant increases among students with ADHD–IA reports and school suspension. This was consistent with Reed et al.'s (2017) findings that adolescence predicted childhood characteristics for long-term school-based behavioral outcomes would have a 23%–76% chance of receiving school discipline. Students with ADHD–IA, particularly concerning SEP profiles, showed significantly increased IA in the classroom. Repeated patterns of

social–emotional impairment can interfere with progression of learning or interpersonal skills with peers or adults (Dickinson, 2017; see also Park & Lynch, 2014, Smith & Fox, 2003). Aggressive behaviors that are poorly addressed become progressively more difficult and resistant to maintaining child control with standardized classroom management (Young et al., 2020). Students with ADHD–IA, particularly concerning SEP profiles, showed significantly increased IA in the classroom. At 6 months, the frequency of IA remained significantly high among the profiles examined in the repeated measure ANOVA. Each student's disciplinary report showed these students also received Saturday school suspension due to the number of repeated disruptions. Thus, it is speculated that the Saturday school suspension successfully acted as a behavior modifier for some students. Saturday school suspension, when properly used, can significantly decrease the number of disciplinary referrals that occur in schools (Valenzuela, 2017). According to Connor et al. (2019), therapeutic treatment of IA in children with ADHD is currently an ongoing study among the literature, which must be explored further.

The social learning theory of aggression explains the reactive development of aggressive behaviors among student profiles that were analyzed over 6 months. Initially, aggression seemed to occur as a modeled response from previous exposure or unregulated emotion that developed into severe levels of aggressive behaviors (Hay, 2017). The responses are associated with the direct experience of events for which the child uses observational learning as a method of determining reward for acting aggressively (Bandura, 2001; see also Mischel & Shoda, 1995). Puiu et al. (2018)

explained that increased IA is due to the functional activity of the deviant prefrontal and cingulate cortex in ADHD children causing control network deficits.

Limitations of the Study

This study was intended to expand on the functional relationship between ADHD students and IA in standardized classrooms. The study expanded on the operative principle that the potential inclusion of RBBS sustained a significant impact on ADHD–IA students currently listed under SEP. The goals for this study were to consider the facts that resulted from the inclusion of RBBS to determine increased IA, increased frequency of IA behavior, and behavioral patterns among the ADHD population. Additionally, the importance of RBBS inclusion in SEP was evaluated to improve the long-term trajectory among students with ADHD–IA behaviors. Testing functional behavior of IA among students with ADHD in an active classroom environment typically holds possible limitations that need consideration. For example, external influences like a teacher's training, effective classroom management, family influences, and students' cognitive aptitudes to comprehend or process information have a significant role in child development. The individual-specific effects for IEPs and 504 plans were not separately tested for the relationship to IA. This was primarily to stay within the scope of the study and maintain focus on accessible data. However, further research might explore the relationship between aggression and SEP modification by isolating students with ADHD–IA either by their IEPs or 504 plans according to IA behavior, assessing the impact of student numbers with ADHD in standardized rooms and the frequency of behavior among the type of SEP assigned. However, results indicate that the methods used to study

the possible relationship between ADHD–IA behaviors and RBBS modification could be isolated to SEP to remain relevant.

I attempted to identify impulsive aggression and behavior patterns by studying students with ADHD profiles and school disciplinary reports documented by educational staff members. One fundamental limitation were the frequency that educators correctly reported and documented impulsive aggression on the disciplinary report as an offense. Teachers sometimes reported IA behavior in the student's disciplinary database as a weekly note, listing the IA types that occurred throughout the week and not on the day of the occurrence. The number of occurrences IA manifested in the student's behavior for those teachers who applied weekly notes is unknown. Thus, it is assumed that each manifestation listed occurred at least once and was added to the behaviors reported daily.

A second limitation is the experience, variation, and degree that the educator is trained in classroom management or behavioral interventions for students with ADHD. Educators may be limited in their understanding of how to address IA in mainstream classrooms effectively. Moreover, educators may not have the time to identify or understand the unique circumstances that manifest IA behavior in students with ADHD. There is also no control over the variances between the level of passiveness, stress, or frustration threshold needed for the educator to report IA in the students' disciplinary system.

The final limitation involved a limited resource of students with ADHD-IA listed as a disorder in the charters school SEP profiles. The population sizes were limited, and the number of students was small compared to much larger school districts. Only 24 of

the 83 students (30%) were classified as having ADHD in SEP at the charter schools where the study was conducted (ADE DATA Center, n.d.a). Typically, ADHD in special education programs is less than 50% in their corresponding program (IEP; 42.9% and 504 plans;13.6%) (DuPaul et al., 2019). I initially intended to use techniques that would isolate each grade for sixth, seventh, and eighth. Thus, it is challenging to communicate among multiple school counselors and obtain correct data for relationship methods. Additionally, because the two are small charter schools, it was challenging to acquire the necessary profiles to conduct each grade study. However, there is no advantage for differentiating a within-study of students with ADHD IA among SEPs to include RBBS grade-specific behavior category and students with ADHD IA among SEPs grouping toward inclusion of RBBS. In addition, students on different types of medication or nonmedication could affect the students' change in IA behavior. It could result in more or less responsiveness to behavioral modification techniques, including behavioral modification techniques at school and home. Therefore, the student with ADHD does not perceive behavioral modification techniques the same.

Recommendations

Future recommendations gained from the study should expand on research that explores additional categories that focus on IA behavioral modification and at a larger scale and in individual grades. The population of ADHD students should explore more of the nation's population that displays IA characteristic traits. Using a larger population and individual grades, which is nationwide, will help gain a better understanding of the actual population effect for the inclusion of RBBS. There is a greater need for special

services to align education policy with RBBS for students with ADHD-IA (Spiel et al., 2014). Future research could also explore using a mixed-method that incorporates both observations of educators' and parents' disciplinary tactics as they affect students with ADHD-IA and a quantitative method to measure IA's frequency among the student's behavior patterns. These practices could expand on the school method of discipline's overall effect. Additional support should explore the social support and school-supported behavioral intervention services to explore increased IA prevalence among students with ADHD.

Implications

The study's findings have important implications for school SEP coordinators in developing a program that is better suited for students with ADHD. It also is an avenue that mental health professionals can consider when consulting with schools (DuPaul et al., 2019). This information can potentially provide a social change in the student's peer-to-peer culture, teacher-to-student relationship, and school-led programs policies or procedures. Unlike other learning impairments that IEP and 504 Plans are designed to accommodate, students with ADHD-IA have adverse functioning contributing to adjustment problems in their social environment (DuPaul et al., 2019; see also Murray et al., 2020; Saylor & Amann, 2016). This study suggests that students with ADHD-IA have an increased level of functioning problems in the classroom environment. Unfortunately, academic modification serves as a primary intervention method for students with ADHD-IA that do not target their operational problems. The study's methodological research is based on a nonexperimental that explores the intricate relationship with IEP/504 Plans

and the fundamental psychological theories and predictions that, when applied, aims to explain ADHD-IA techniques and procedures in the education system. Providing explanatory research that aims to explain the cause and consequences of ADHD-IA's newly-identified issue in education. Taking a deductive approach to test the prevalence of social theory of aggression as a reason for behavioral change in children with ADHD-IA. Data used in this study is considered secondary as it takes the critical information from currently established IEPs, 504 Plans, and disciplinary reports to explore the results. The quantitative research is used to interpret RBBS found in SEP and ADHD-IA aggression in middle school children. The sampling for the study comes from a charter school district. It uses a longitudinal approach that gathers data that measures ADHD-IA in children at the initial, middle, and end of six months. RBBS methods help the individual cope with stressful situations found in the classroom (Wiener, 2020). For educators, the knowledge of incorporating RBBS to IEPs and 504 Plans may invoke positive social change that fosters redirection of IA that will assist the long-term trajectory of teaching ADHD students to cope, build trust, and increase focus on learning.

Conclusion

Few studies explore the relationship between SEP (IEPs and 504 Plans) that focus on the unique characteristics of students with ADHD-IA behaviors. More specifically, the direct effects of inclusion of RBBS related strategies in student profiles. According to Saylor and Amann (2016), children with ADHD symptoms eventually reduce. However, it is different when IA becomes a factor in the student's behavior pattern. Social functioning becomes a severe issue and more complex in their daily lives. Thus, this

study provides current research into the complex nature of developing IA behavior in students with ADHD in the special education system, filling the gaps in the current literature. Effective psychological-based recommendation into education SEP modification serves as positive social change for the program's services.

References

ADE DATA Center. (n.d.a). LISA Academy North Middle Charter School. Retrieved April 4, 2020 from https://myschoolinfo.arkansas.gov/Schools/Detail/6041705

ADE DATA Center (n.d.b) District Cycle 4: Cycles: ADE Data Center. Retrieved March 02, 2021, from https://adedata.arkansas.gov/statewide/ReportList/Cycles/DistrictCycle4.aspx

Allen, J. J., & Anderson, C. A. (2017). General aggression model. *The International Encyclopedia of Media Effects*, 1–15. https://doi.org/10.1002/9781118783764.wbieme0078

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Arkansas Department of Education. (2017). Arkansas Department of Education Special Education and Related Services 18.00 Program Standards (Attachment COM-18-005). http://adecm.arkansas.gov/Attachments/COM-18-005--FINAL_Emergency_Rule_--_SPED_Sec._18.00_RESIDENTIALPLACEMENT.pdf

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychology Review, 84*, 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1–26. https://doi.org/10.1146/annurev.psych.52.1.1

Bandura, A. (2017). Social learning theory of aggression. In *The control of aggression* (pp. 201–252). Routledge. (Original work published in 1977) https://doi.org/10.4324/9781315080390-7

Bandura, A., & Walters, R. H. (1963). Aggression. In *Child psychology: The sixty-second yearbook of the National Society for the study of education, Part 1* (pp. 364–415). National Society for the Study of Education. https://doi.org/10.1037/13101-010

Blader, J. C., Pliszka, S. R., Kafantaris, V., Sauder, C., Foley, C. A., Posner, J., Carlson, G. A., Crowell, J. A., & Margulies, D. M. (2016). Prevalence and treatment outcomes of persistent negative mood among children with attention-deficit/ hyperactivity disorder and aggressive behavior. *Journal of Child and Adolescent Psychopharmacology*, *26*(2), 164–173. https://doi.org/10.1089/cap.2015.0112

Blazer, B. (1999). Developing 504 classroom accommodation plans: A collaborative, systematic parent-student-teacher approach. *Teaching Exceptional Children*, *32*(2), 28–33. https://doi.org/10.1177/004005999903200204

Campbell, S. B., Spieker, S., Vandergrift, N., Belsky, J., Burchinal, M., & NICHD Early Child Care Research Network. (2010). Predictors and sequelae of trajectories of physical aggression in school-age boys and girls. *Development and Psychopathology*, *22*(1), 133–150. https://doi.org/10.1017/s0954579409990319

Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Journal of School Psychology*, *44*(6), 473–490. https://doi.org/10.1016/j.jsp.2006.09.001

Card, N. A., & Little, T. D. (2006). Proactive and reactive aggression in childhood and adolescence: A meta-analysis of differential relations with psychosocial adjustment. *International Journal of Behavioral Development*, *30*(5), 466–480. https://doi.org/10.1177/0165025406071904

Center for Arkansas Legal Services. (2017). Individualized Education Program Fact Sheet. https://www.arlegalservices.org/sites/default/files/individualized-education-program.pdf

Centers for Disease Control and Prevention. (2018, February 14). Key findings: National prevalence of ADHD and treatment. https://www.cdc.gov/ncbddd/adhd/features/national-prevalence-adhd-and-treatment.html

Coles, E. K., Pelham, W. E., Gnagy, E. M., Burrows-Maclean, L., Fabiano, G. A., Chacko, A., Wymbs, B. T., Tresco, K. E., Walker, K. S., & Robb, J. A. (2005). A controlled evaluation of behavioral treatment with children with ADHD attending a summer treatment program. *Journal of Emotional and Behavioral Disorders*, *13*(2), 99–112. https://doi.org/10.1177/10634266050130020301

Connor, D. F. (2003). *Aggression and antisocial behavior in children and adolescents: Research and treatment*. Guilford Press. https://doi.org/10.1176/appi.ps.54.1.119

Connor, D. F., Chartier, K. G., Preen, E. C., & Kaplan, R. F. (2010). Impulsive aggression in attention-deficit/hyperactivity disorder: symptom severity, co-morbidity, and attention-deficit/hyperactivity disorder subtype. *Journal of Child and Adolescent Psychopharmacology*, *20*(2), 119–126.

https://doi.org/10.1089/cap.2009.0076

Connor, D. F., Newcorn, J. H., Saylor, K. E., Amann, B. H., Scahill, L., Robb, A. S., Jensen, P. S., Vitiello, B., Finding, R. L., & Buitelaar, J. K. (2019). Maladaptive aggression: with a focus on impulsive aggression in children and adolescents. *Journal of Child and Adolescent Psychopharmacology, 29*(8), 576–591. https://doi.org/10.1089/cap.2019.0039

Danforth, J. S., Connor, D. F., & Doerfler, L. A. (2014). The development of comorbid conduct problems in children with ADHD: An example of an integrative developmental psychopathology perspective. *Journal of Attention Disorders, 20*(3), 214–229. https://doi.org/10.1177/1087054713517546

Data Resource Center for Children & Adolescent Health. (2018). 2016 National survey of children's health. https://doi.org/10.1037/t28445-000

Dickinson, S. E. (2017). An evaluation of IDEA Part C interventionists' knowledge and use of evidence-based practices for young children with challenging behavior. (Master's thesis, University of South Florida). https://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=7847&context=etd

DuPaul, G. J., Chronis-Tuscano, A., Danielson, M. L., & Visser, S. N. (2019). Predictors of receipt of school services in a national sample of youth with ADHD. *Journal of Attention Disorders, 23*(11), 1303-1319. https://doi.org/10.1177/1087054718816169

DuPaul, G. J., & White, G. P. (2006). ADHD: Behavioral, educational, and medication interventions. *Education Digest*, (7), 57-60. https://www.eddigest.com/

DuPaul, G. J., & Wyendt, L. L. (2006). School based interventions for children with attention deficit hyperactivity disorder: Effects on academic, social, and behavioral functioning. *International Journal of Disability, Development and Education*, *53*, 161–176. https://doi.org/10.1080/10349120600716141

Evans, S., Fite, P., Hendrickson, M., Rubens, S., Mages, A. (2015). The role of reactive aggression in the link between hyperactive-impulsive behaviors and peer rejection in adolescents. *Child Psychiatry & Human Development*, *46*(6), 903–912. https://doi.org/10.1007/s10578-014-0530-y

Fabiano, G., Vujnovic, R., Pelham, W., Waschbusch, D., Massetti, G., Pariseau, M., Naylor, J., Yu, J., Robins, M., Carnefix, T., Greiner, A., & Volker, M. (2010). Enhancing the effectiveness of special education programming for children with attention deficit hyperactivity disorder using a daily report card. *School Psychology Review*, *39*(2), 219-239. https://doi.org/10.1080/02796015.2010.12087775

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39,* 175-191. https://doi.org/10.3758/bf03193146

Fite, P. J., Stoppelbein, L., & Greening, L. (2009). Proactive and reactive aggression in a child psychiatric inpatient population: Relations to psychopathic characteristics. *Criminal Justice and Behavior*, *36*(5), 481-493. https://doi.org/10.1080/15374410802698461

Gaastra, G. F., Groen, Y., Tucha, L., & Tucha, O. (2020). Unknown, Unloved? Teachers' Reported Use and Effectiveness of Classroom Management Strategies for Students with Symptoms of ADHD. In *Child & Youth Care Forum* (Vol. 49, No. 1, pp. 1-22). Springer US. doi: https://doi.org/10.1007/s10566-019-09515-7

Giallo, R., & Little, E. (2003). Classroom behaviour problems: The relationship between preparedness, classroom experiences, and self-efficacy in graduate and student teachers. *Australian Journal of Educational & Developmental Psychology*, *3*(1), 21-34. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.545.5802&rep=rep1&type=pdf

Girard, L. C., Tremblay, R. E., Nagin, D., & Côté, S. M. (2019). Development of aggression subtypes from childhood to adolescence: a group-based multi-trajectory modelling perspective. *Journal of Abnormal Child Psychology*, *47*(5), 825-838. https://doi.org/10.1007/s10802-018-0488-5

Guo, Y., Logan, H. L., Glueck, D. H., & Muller, K. E. (2013). Selecting a sample size for studies with repeated measures. *BMC Medical Research Methodology*, *13*(1), 100. https://doi.org/10.1186/1471-2288-13-100

Harrison, J. R., Bunford, N., Evans, S. W., & Owens, J. S. (2013). Educational Accommodations for Students With Behavioral Challenges: A Systematic Review of the Literature. *Review of Educational Research*, *83*(4), 551–597. https://doi.org/10.3102/0034654313497517

Harty, S. C., Miller, C. J., Newcorn, J. H., & Halperin, J. M. (2009). Adolescents with

childhood ADHD and comorbid disruptive behavior disorders: Aggression, anger, and hostility. *Child Psychiatry and Human Development, 40*(1), 85-97. https://doi.org/10.1007/s10578-008-0110-0

Harvey, E. A., Breaux, R. P., & Lugo-Candelas, C. I. (2016). Early development of comorbidity between symptoms of attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD). *Journal of Abnormal Psychology*, *125*(2), 154. https://doi.org/10.1037/abn0000090

Hay, D. F. (2017). The early development of human aggression. *Child Development Perspectives*, *11*(2), 102-106. https://doi.org/10.1111/cdep.12220

Hellings, J. A., Nickel, E. J., Weckbaugh, M., McCarter, K., Mosier, M., & Schroeder, S. R. (2005). The overt aggression scale for rating aggression in outpatient youth with autistic disorder: preliminary findings. *The Journal of Neuropsychiatry and Clinical Neurosciences*, *17*(1), 29-35. https://doi.org/10.1176/jnp.17.1.29

Hubbard, J. A., McAuliffe, M. D., Morrow, M. T., & Romano, L. J. (2010). Reactive and proactive aggression in childhood and adolescence: Precursors, outcomes, processes, experiences, and measurement. *Journal of Personality*, 78(1), 95–118. https://doi.org/10.1111/j.1467-6494.2009.00610.x

Joyce, J., Harrison, J. R., & Gitomer, D. H. (2020). Modifications and accommodations: a preliminary investigation into changes in classroom artifact quality. *International Journal of Inclusive Education*, *24*(2), 181–201. https://doi.org/10.1080/13603116.2018.1453876

Kapalka, G. M. (2006). Avoiding repetitions reduces ADHD children's management

problems in the classroom. *Emotional and Behavioural Difficulties*, *10*(4), 269–279. https://doi.org/10.1177/1363275205058999

Karhu, A., Närhi, V., & Savolainen, H. (2018). Inclusion of pupils with ADHD symptoms in mainstream classes with PBS. *International Journal of Inclusive Education*, *22*(5), 475-489. https://doi.org/10.1080/13603116.2017.1370741

Kay, S. R., Wolkenfeld, F., & Murrill, L. M. (1988). Profiles of aggression among psychiatric patients. *The Journal of Nervous and Mental Disease*, *176*(9), 539–546. https://doi.org/10.1097/00005053-198809000-00007

Kempes, M., Matthys, W., De Vries, H., & Van Engeland, H. (2005). Reactive and proactive aggression in children a review of theory, findings and the relevance for child and adolescent psychiatry. *European Child & Adolescent Psychiatry*, *14*(1), 11-19. https://doi.org/10.1007/s00787-005-0432-4

Kieling, R., & Rohde, L. A. (2010). ADHD in children and adults: diagnosis and prognosis. *In* B*ehavioral Neuroscience of Attention Deficit Hyperactivity Disorder and Its Treatment* (pp. 1-16). Springer, Berlin, Heidelberg. https://doi.org/10.1007/7854_2010_115

King, S., & Waschbusch, D. A. (2010). Aggression in children with attention-deficit/hyperactivity disorder. *Expert Review of Neurotherapeutics*, *10*(10), 1581-1594. https://doi.org/10.1586/ern.10.146

Klopfer, K. M., Scott, K., Jenkins, J., & Ducharme, J. (2019). Effect of Preservice Classroom Management Training on Attitudes and Skills for Teaching Children with Emotional and Behavioral Problems: A Randomized Control Trial. *Journal*

of Hospitality & Tourism Research, *43*(2), 49–66. https://doi.org/10.1177/0888406417735877

Kobak, R., Little, M., Race, E., & Acosta, M. C. (2001). Attachment disruptions in seriously emotionally disturbed children: Implications for treatment. *Attachment & Human Development*, *3*(3), 243–258. https://doi.org/10.1080/14616730110096861

Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, *4*, 863. https://doi.org/10.3389/fpsyg.2013.00863

Lessing, A. C., & Wulfsohn, R. (2015). The potential of behavior management strategies to support learners with attention deficit hyperactivity disorder in the classroom. *Education as Change*, *19*(1), 54-77. https://doi.org/10.1080/16823206.2015.1024146

Martinussen, R., Tannock, R., & Chaban, P. (2011). Teachers' reported use of instructional and behavior management practices for students with behavior problems: Relationship to role and level of training in ADHD. *Child & Youth Care Forum*, *40*(3), 193–210. https://doi.org/10.1007/s10566-010-9130-6

Marzano, R., & Marzano, J. (2003). The key to classroom management. *Educational Leadership*, *61*(1), 6–13. https://www.researchgate.net/profile/Robert-Marzano/publication/283749466_The_Key_to_Classroom_Management/links/56f26c0908aed354e57293d3/The-Key-to-Classroom-Management.pdf

McKay, K. E., & Halperin, J. M. (2006). ADHD, aggression, and antisocial behavior

across the lifespan. *Annals of the New York Academy of Sciences*, *931*(1), 84-96. https://doi.org/10.1111/j.1749-6632.2001.tb05774.x

Milsom, A., Goodnough, G., & Akos, P. (2007). School counselor contributions to the individualized education program (IEP) process. *Preventing School Failure: Alternative Education for Children and Youth*, *52*(1), 19-24. https://doi.org/10.3200/psfl.52.1.19-24

Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*,102(2), 246–268. https://doi.org/10.1037/0033-295x.102.2.246

Moonsamy, S., Jordaan, H., & Greenop, K. (2009). Cognitive processing and narrative discourse production in children with ADHD. *South African Journal of Psychology*, *39*(3), 326-335. https://doi.org/10.1177/008124630903900307

Murray, A. L., Obsuth, I., Zirk-Sadowski, J., Ribeaud, D., & Eisner, M. (2020). Developmental relations between ADHD symptoms and reactive versus proactive aggression across childhood and adolescence. *Journal of Attention Disorders*, *24*(12), 1701-1710. https://doi.org/10.1177/1087054716666323

Newcorn, J. H., Halperin, J. M., Jensen, P. S., Abikoff, H. B., Arnold, L. E., Cantwell, D. P., Conners, C. K., Elliott, G. R., Epstein, J. N., Greenhill, L. L., Hechtman, L., Hinshaw, S. P., Hoza, B., Kraemer, H. C., Pelham, W. E., Severe, J. B., Swanson, J. M., Wells, K. C., Wigal, T., & Vitiello, B. (2001). Symptom profiles in children with ADHD: effects of comorbidity and gender. *Journal of the American*

Academy of Child & Adolescent Psychiatry, 40(2), 137-146. https://doi.org/10.1097/00004583-200102000-00008

Niesyn, M. E. (2009). Strategies for success: Evidence-based instructional practices for students with emotional and behavioral disorders. *Preventing School Failure: Alternative Education for Children and Youth*, *53*(4), 227-234. https://doi.org/10.3200/psfl.53.4.227-234

Nigg, J. T., Willcutt, E. G., Doyle, A. E., & Sonuga-Barke, E. J. S. (2005). Causal heterogeneity in attention-deficit/hyperactivity disorder: Do we need neuropsychologically impaired subtypes? *Biological Psychiatry*, *57*(11), 1224–1230. https://doi.org/10.1016/j.biopsych.2004.08.025

Oliver, P. C., Crawford, M. J., Rao, B., Reece, B., & Tyrer, P. (2007). Modified overt aggression scale (MOAS) for people with intellectual disability and aggressive challenging behavior: A reliability study. *Journal of Applied Research in Intellectual Disabilities, 20*(4), 368–372. https://doi.org/10.1111/j.1468-3148.2006.00346.x

Oliver, R. M., Wehby, J. H., & Reschly, D. J. (2011). Teacher classroom management practices: Effects on disruptive or aggressive student behavior. *Campbell Systematic Reviews*, *7*(1), 1-55. https://doi.org/10.4073/csr.2011.4

Ornaghi, V., Brockmeier, J., & Grazzani, I. (2014). Enhancing social cognition by training children in emotion understanding: A primary school study. *Journal of Experimental Child Psychology, 119*, 26-39. https://doi.org/10.1016/j.jecp.2013.10.005

Park, H. S. L., & Lynch, S. A. (2014). Evidence-based practices for addressing classroom behavior problems. *Young Exceptional Children*, *17*(3), 33-47. https://doi.org/10.1177/1096250613496957

Parke, E. M., Becker, M. L., Graves, S. J., Baily, A. R., Paul, M. G., Freeman, A. J., & Allen, D. N. (2018). Social cognition in children with ADHD. *Journal of Attention Disorders*, *25*(4), 519-529. https://doi.org/10.1177/1087054718816157

Pelham Jr, W. E., Fabiano, G. A., Waxmonsky, J. G., Greiner, A. R., Gnagy, E. M., Pelham, W. E., Coxe, S., Verley, J., Bhatia, I., Hart, K., Karch, K., Konijnendijk, E., Tresco, K., Nahum-Shani, I., & Murphy, S. A. (2016). Treatment sequencing for childhood ADHD: A multiple-randomization study of adaptive medication and behavioral interventions. *Journal of Clinical Child & Adolescent Psychology*, *45*(4), 396-415. https://doi.org/10.1080/15374416.2015.1105138

Pigge, F. L., Marso, R. N. (1997). A seven year longitudinal multi-factor assessment of teaching concerns development through preparation and early years of teaching. *Teaching and teacher education*, *13*(2), 225-235. https://doi.org/10.1016/s0742-051x(96)00014-5

Pliszka, S. R. (2016). Attention-deficit hyperactivity disorder across the lifespan. *FOCUS*, *14*(1), 46–53. https://doi.org/10.1176/appi.focus.20150022

Puiu, A. A., Wudarczyk, O., Goerlich, K. S., Votinov, M., Herpertz-Dahlmann, B., Turetsky, B., & Konrad, K. (2018). Impulsive aggression and response inhibition in attention-deficit/hyperactivity disorder and disruptive behavioral disorders: Findings from a systematic review. *Neuroscience & Biobehavioral Reviews*, *90*,

231-246. https://doi.org/10.1016/j.neubiorev.2018.04.016

Purdie, N., Hattie, J., & Carroll, A. (2002). A review of the research on interventions for attention deficit hyperactivity disorder: What works best?. *Review of Educational Research*, *72*(1), 61-99. https://doi.org/10.3102/00346543072001061

Reed, M. O., Jakubovski, E., Johnson, J. A., & Bloch, M. H. (2017). Predictors of long-term school-based behavioral outcomes in the multimodal treatment study of children with attention-deficit/hyperactivity disorder. *Journal of Child and Adolescent Psychopharmacology*, *27*(4), 296-309. https://doi.org/10.1089/cap.2015.0168

Rich, E. C., Loo, S. K., Yang, M., Dang, J., & Smalley, S. L. (2009). Social Functioning Difficulties in ADHD: Association with PDD Risk. *Clinical Child Psychology & Psychiatry*, *14*(3), 329–344. https://doi.org/10.1177/1359104508100890

Riffel, L. (2005). *Writing behavioral intervention plans (BIP) based on functional behavior assessments (FBA): Making data based decisions to change behavior*. Positive Behavior Support of Georgia. http://apbs.org/

Saylor, K. E., & Amann, B. H. (2016). Impulsive aggression as a comorbidity of attention-deficit/hyperactivity disorder in children and adolescents. *Journal of Child and Adolescent Psychopharmacology*, *26*(1), 19–25. https://doi.org/10.1089/cap.2015.0126

Saltaris, C. (2002). Psychopathy in juvenile offenders: Can temperament and attachment be considered as robust developmental precursors? *Clinical Psychology Review*, *22*(5), 729-752. https://doi.org/10.1016/s0272-7358(01)00122-2

Salmivalli, C., & Nieminen, E. (2002). Proactive and reactive aggression among school bullies, victims, and bully-victims. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *28*(1), 30-44. https://doi.org/10.1002/ab.90004

Sibley, M. H., Olson, S., Morley, C., Campez, M., & Pelham Jr, W. E. (2016). A school consultation intervention for adolescents with ADHD: Barriers and implementation strategies. *Child and Adolescent Mental Health*, *21*(4), 183-191. https://doi.org/10.1111/camh.12159

Schnoes, C., Reid, R., Wagner, M., & Marder, C. (2006). ADHD among students receiving special education services: A national survey. *Exceptional Children*, *72*(4), 483-496. https://doi.org/10.1177/001440290607200406

Schultz, B. K., Storer, J., Watabe, Y., Sadler, J., & Evans, S. W. (2011). School-based treatment of attention-deficit/hyperactivity disorder. *Psychology in the Schools*, *48*(3), 254–262. https://doi.org/10.1002/pits.20553

Shaw, M., Hodgkins, P., Caci, H., Young, S., Kahle, J., Woods, A. G., & Arnold, L. E. (2012). A systematic review and analysis of long-term outcomes in attention deficit hyperactivity disorder: effects of treatment and non-treatment. *BMC Medicine*, *10*(1), 1-15. https://doi.org/10.1186/1741-7015-10-99

Shelton, T. L., Barkley, R. A., Crosswait, C., Moorehouse, M., Fletcher, K., Barrett, S., ... & Metevia, L. (1998). Psychiatric and psychological morbidity as a function of adaptive disability in preschool children with aggressive and hyperactive-impulsive-inattentive behavior. *Journal of Abnormal Child Psychology*, *26*(6),

475-494. https://doi.org/10.1023/a:1022603902905

Shi, F., & The Odum Institute. (2019). Learn About Wilks' Lambda in SPSS with data from the Global Health Observatory (2016), 2-8. https://doi.org/10.4135/9781526474728

Siegel, L. M. (2011) *The complete IEP guide: How to advocate for your special ed child* (7th ed.). Berkeley, CA: Nolo.

Simpson, R. L. (2004). Inclusion of students with behavior disorders in general education settings: Research and measurement issues. *Behavioral Disorders*, *30*(1), 19–31. https://doi.org/10.1177/019874290403000104

Slaughter, K. E., Leaberry, K. D., Fogleman, N. D., & Rosen, P. J. (2020). Reactive and proactive aggression in children with and without ADHD and negative emotional lability. *Social Development*, *29*(1), 320-338. https://doi.org/10.1111/sode.12402

Smith, B., & Fox, L. (2003). Systems of service delivery: A synthesis of evidence relevant to young children at risk of or who have challenging behavior. *Center for Evidence-based Practice: Young Children with Challenging Behavior. https://ohiofamilyrights.com/Reports/Special-Reports-Page-4/Systems-of-Service-Delivery-A-Synthesis-of-Evidence-Relevant-to-Young.pdf*

Spiel, C. F., Evans, S. W., & Langberg, J. M. (2014). Evaluating the content of individualized education programs and 504 plans of young adolescents with attention deficit/hyperactivity disorder. *School Psychology Quarterly*, *29*(4), 452–468. https://doi.org/10.1037/spq0000101

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How effective

are behavior change interventions based on the theory of planned behavior? A three-level meta-analysis. *Zeitschrift Für Psychologie*, *224*(3), 216–233. https://doi.org/10.1027/2151-2604/a000255

Stough, L. (2006). The place of classroom management and standards in teacher education. NJ: Erlbaum. https://doi.org/10.4324/9780203874783.ch34

Sukhodolsky, D. G., Smith, S. D., McCauley, S. A., Ibrahim, K., & Piasecka, J. B. (2016). Behavioral interventions for anger, irritability, and aggression in children and adolescents. *Journal of Child and Adolescent Psychopharmacology*, *26*(1), 58–64. https://doi.org/10.1089/cap.2015.0120

Tillery, A. D., Varjas, K., Meyers, J., Smith Collins, A. (2010). General education teachers' perceptions of behavior management and intervention strategies. Journal of Positive Behavior Interventions, *12*(2), 86-102. https://doi.org/10.1177/1098300708330879

U.S. Department of Education, Office of Special Education Programs. (2008). *Teaching children with Attention Deficit Hyperactivity Disorder: Instructional strategies and practices.* https://doi.org/10.1037/e588242011-001

Valenzuela, E. B. (2017). *The Impact of a Saturday School Detention Program on Decreasing Referrals and Increasing Attendance* (Doctoral dissertation, Northern Arizona University). https://www.proquest.com/openview/440a5f700b7f28d586d26b4e867c78e9/1?pq-origsite=gscholar&cbl=18750&diss=y

Veroude, K., Zhang-James, Y., Fernàndez-Castillo, N., Bakker, M. J., Cormand, B., &

Faraone, S. V. (2016). Genetics of aggressive behavior: An overview. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, *171*(1), 3-43. https://doi.org/10.1002/ajmg.b.32364

Visser, M., Singer, E., Van Geert, P. L. C., & Kunnen, S. E. (2009). What makes children behave aggressively? The inner logic of Dutch children in special education. *European Journal of Special Needs Education*, *24*(1), 1–20. https://doi.org/10.1080/08856250802596717

Visser, S. N., Danielson, M. L., Bitsko, R. H., Holbrook, J. R., Kogan, M. D., Ghandour, R. M., Perou, R., & Blumberg, S. J. (2014). Trends in the parent-report of health care provider diagnosed and medicated ADHD: United States, 2003-2011. *Journal of the American Academy of Child and Adolescent Psychiatry*, *53*(1), 34-46. https://doi.org/10.1016/j.jaac.2013.09.001

Vitaro, F., Brendgen, M., & Barker, E. D. (2006). Subtypes of aggressive behaviors: A developmental perspective. *International Journal of Behavioral Development*, *30*(1), 12-19. https://doi.org/10.1177/0165025406059968

Wehmeier, P. M., Schacht, A., & Barkley, R. A. (2010). Social and emotional impairment in children and adolescents with ADHD and the impact on quality of life. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *46*(3), 209–217. https://doi.org/10.1016/j.jadohealth.2009.09.009

Weyandt, L. L., Oster, D. R., Marraccini, M. E., Gudmundsdottir, B. G., Munro, B. A., Zavras, B. M., & Kuhar, B. (2014). Pharmacological interventions for adolescents

and adults with ADHD: stimulant and nonstimulant medications and misuse of prescription stimulants. *Psychology Research and Behavior Management*, *7*, 223–249. https://doi.org/10.2147/prbm.s47013

Wiener, J. (2020). The role of school psychologists in supporting adolescents with ADHD. *Canadian Journal of School Psychology*, *35*(4), 299-310. https://doi.org/10.1177/0829573520923536

Winstanley, C. A., Eagle, D. M., & Robbins, T. W. (2006). Behavioral models of impulsivity in relation to ADHD: translation between clinical and preclinical studies. *Clinical Psychology Review*, *26*(4), 379-395. https://doi.org/10.1016/j.cpr.2006.01.001

Young, A. S., Youngstrom, E. A., Findling, R. L., Van Eck, K., Kaplin, D., Youngstrom, J. K., Calabrese, J., Stepanova, E., & Lams Consortium. (2020). Developing and validating a definition of impulsive/reactive aggression in youth. *Journal of Clinical Child & Adolescent Psychology*, *49*(6), 787-803. https://doi.org/10.1080/15374416.2019.1622121

Yudofsky, S. C., Silver, J. M., Jackson, W., Endicott, J., & Williams, D. (1986). The Overt Aggression Scale for the objective rating of verbal and physical aggression. *The American Journal of Psychiatry*, *143*(1), 35-39. https://doi.org/10.1176/ajp.143.1.35

Zendarski, N., Sciberras, E., Mensah, F., & Hiscock, H. (2020). Factors associated with educational support in young adolescents with ADHD. *Journal of Attention Disorders*, *24*(5), 750-757. https://doi.org/10.1177/1087054718804351

Zlomke, K., & Zlomke, L. (2003). Token economy plus self-monitoring to reduce disruptive classroom behaviors. *Behavior Analyst Today*, *4*(2), 177. https://doi.org/10.1037/h0100117

Appendix A: ADHD-IA RBBS/Behavioral Profile Questionnaire

1. Select students Gender:

   Male__ Female__

2. Child age listed in profile in years:

   (drop down menu for reporting exact age)

3. Are students enrolled in special education plan (IEP or 504 Plan):

   Yes___ No___

4. Please indicate grade:

   6^{th} ____ 7^{th} ____ 8^{th} ____

5. School district name for the child profile:

   (drop down menu of school campus for reporting)

6. Is ADHD indicated as diagnosis in profile?

   Yes___ No___

7. Does the child take ADHD medication?

   Yes___ No___

8. Student's profile express concerns of aggression

   Yes___ No___

9. Does profile modification on SEP address RBBS for students' behaviors of aggression?

   Yes = RBBS suggest modification to improve behavior

   No = indicates that modification for behavior is not provided

   Yes___ No___

10. Is the student enrolled in school psychology program?

Yes___ No___

11. IEP/504 Plans modification written with RBBS

Yes___ No___

12. Student meet with school psychologist. Meets should be scored as:

Once monthly = Rarely Twice monthly = Sometimes

Three times monthly = Often Four times a month = Always

Never	Rarely	Sometimes	Often	Always