

2020

Effect of Positive Behavioral Interventions and Supports on Middle School Students' Discipline

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Rick Thomas

has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

Effect of Positive Behavioral Interventions and Supports on Middle School Students'

Discipline

by

Rick Thomas

EdS, Valdosta State University, 2007

MS, Albany State University 2004

BS, Fort Valley State University, 1997

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

July 2020

Abstract

Research has documented that a pervasive problem affecting today's schools is disruptive student behavior and the long-term, negative outcomes associated with the use of out-of-school suspensions (OSS) to address it. The program, Positive Behavioral Interventions and Supports (PBIS), was implemented in a local middle school with a diverse student population at which there was a history of student discipline problems in an effort to improve student behavior and reduce discipline referrals. Guided by Skinner's theory of behaviorism, the purpose of this quantitative study was to examine the effect that PBIS had on the following discipline-related variables: number of office discipline referrals, number of incidents resulting in OSS, and total number of days of OSS. This ex post facto, quasi-experimental study analyzed preimplementation and postimplementation discipline data from 180 students (88 6th-7th grade students and 92 7th-8th grade students) to determine the effect of PBIS on discipline-related variables at this diverse, high-needs school. Repeated measures *t* test results indicated the PBIS program had a positive effect on discipline, as evidenced by significantly lower numbers of disciplinary referrals and lower numbers of incidents resulting in OSS; but there was no significant difference in the number of days of OSS per OSS incident. Findings indicate that PBIS can serve as a behavior support that may promote positive student behavior and improve discipline. Overall, PBIS is a valuable program that, with proper implementation and continuous monitoring of student outcomes, can support students' behavioral success thereby promoting positive social change in the education environment over time.

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Dedication

I dedicate this dissertation to my wife, children, parents, and brothers.

Janice, I am eternally grateful for you not only being my wife, but also my best friend. You have remained by my side for the duration of this tumultuous journey, always supported me, and encouraged me when things were challenging. The goals that we set several years ago are coming to fruition. Reese, Jalyn, E'Nya and the late Rick, Jr you all are the best children a father could ask for. I am truly thankful for your patience throughout this extremely challenging experience. You do not know how much your words of encouragement meant to me during my greatest moments of frustration. I also appreciate the trust that you all placed in me to continue to provide for our family. Dad, the late Frankie, Sr., thank you for teaching us to take care of our family and speak up when necessary.

My mother, Ms. Mary C. Thomas, you are the best mother that I could ever have. You raised us in a Christian home where you epitomized what it meant to put God first. Thank you for the life lessons that you instilled in me early in life, those lessons still resonate with me today. You have always taught us to always do things right the first time and so that we will not have to repeat the task a second time. You also taught us to always give our best effort in all that we do. I will be forever grateful for your unconditional love and support.

Frankie Jr., Dexter Sr., and Steve, Sr I appreciate your encouragement throughout the years to finish the task, no matter what the odds seem to be. I also am thankful for the love we have for each other, in spite of the different paths we took in life and the various experiences that accompanied our selected paths.

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Chapter 1: Introduction to the Study

Students in public schools in the United States engage in a variety of disruptive and violent behaviors (Gray & Lewis, 2015), which often incur varying forms of punitive measures (U. S. Department of Education, Office for Civil Rights [USDE, OCR], 2016). A common punitive measure is disciplinary exclusion, out-of-school suspensions (OSS) (Bowman-Perrott et al., 2011). It is especially damaging because it affects school attendance and thus keeps students out of the learning environment (Okonofua, Walton, & Eberhardt, 2016). Ultimately, disciplinary difficulties and corresponding, punitive responses can result in substantial negative consequences for the quality of students' experience in school, access to learning, and life outcomes (Okonofua et al., 2016).

While types and rates of problem student behavior may vary based on instructional level (elementary, middle, high), enrollment size, community type (city, suburban, town, rural; Gray & Lewis, 2015), and gender (USDE, OCR, 2016), rates and types also vary based on ethnicity (Gray & Lewis, 2015). Ethnicity also affects rates of chronic absenteeism and responses to poor student behavior (USDE, OCR, 2016). For both chronic absenteeism and OSS, African-American students are disproportionately represented (USDE, OCR, 2016). In Georgia, the location of the target school, African-American students are disproportionately represented among students who receive OSS (USDE, OCR, 2014a, 2014b).

In response to punitive measures, such as OSS, that remove students from the instructional setting, some education researchers and school administrators have taken a more positive approach to behavior management. One such approach is the School-Wide

Positive Behavioral Interventions and Supports (SWPBIS) system, a preventative, behavior-change system based on a number of key variables that have been shown to affect students outcomes, including research-based practices, data teams of professionals, school-wide systems of support, explicit social skills instruction, team-based implementation and professional development, and study of student outcomes (Sugai & Simonsen, 2012). Reinforcement also is a critical component of the system (National Technical Assistance Center on School-Wide Positive Behavior Interventions and Supports [NTACPBIS], 2016b). SWPBIS is commonly referred to as PBIS, although the original PBIS system was developed specifically for students with behavioral disorders (Sugai & Simonsen, 2012). As of 2018 over 25,000 U.S. schools were implementing PBIS (see <https://www.pbis.org/about/about>).

While the PBIS system does not dictate specific action plans or programs that should be used to manage student behavior, it does serve as a guideline for the types of behavior supports that should be put into place to achieve the goal of improving behavior (NTACPBIS, 2016b). The PBIS system also underscores the use of data to make appropriate decisions about implemented supports and it stresses the importance of monitoring to ensure fidelity of implementation and continued success (Sugai & Horner, 2002). By putting behavior supports in place using the PIBS system, schools can support positive student behaviors that encourage student learning and reduce problem behaviors that hinder learning (NTACPBIS, 2016b). Improvement in behavior may have an effect on reading proficiency, grades, attendance, and discipline referrals (Sugai & Horner, 2002).

Because the supports chosen by each school will vary in type, structure, and implementation, it is important that each school determine whether they are effective in bringing about desired outcomes (Sugai & Horner, 2002). Such a failure could result in wasted resources and the perpetuation of poor student attendance and behaviors. Ultimately, students may continue to be at risk for both immediate and long-term negative outcomes associated with the separation of students from the academic setting. This concern was especially relevant at the target school, a Title 1 school, where 98% ($N = 696$) are African American and approximately 10% of these students ($N = 69$) are at risk for chronic absenteeism and OSS (USDE, OCR, 2016).

This introductory chapter covers the following topics: background, problem, purpose, research questions, theoretical framework, nature of the study, definitions, assumptions, limitations, scope and delimitations, and significance.

Background

According to the U.S. Department of Education's Office for Civil Rights, about 2.7 million (between 5% and 6%) of all K-12 students received at least one OSS during the 2015–16 school year (2018). African American males accounted for 8% of enrolled students, yet accounted for 25% of students who received an OSS. While schools across the country adopt reforms that reject more punitive discipline measures, such as suspensions and expulsions, data still suggests these forms of discipline are in use. During the 2015–16 school year, the 2.7 million K-12 students who received one or more OSS accounted for 100,000 fewer than in 2013–14. Nonetheless, concerning racial disparities remain. For example, African American boys accounted for 23% of students

expelled, while 20% of students expelled were African American girls. Thus, African-American students still receive a disproportionate number of OSS when compared to students of other races (USDE, OCR, 2016). Compared to White students, African-American students are 3.8 times more likely to receive OSS (USDE, OCR, 2016). African-American students in Georgia in particular have OSS rates higher than the national average for both African-American and White students (see UDOE, OCR, 2014a, 2014b).

A Brookings Institution study discovered that Black students have twice the likelihood of receiving corporal punishment as compared to White students (Stirgus, 2016). Moreover, In the case of Georgia, a 2014 study published in the *Atlanta Journal-Constitution* indicated that nearly two-thirds of students who are suspended or expelled are African-American. African American students comprise 37% of Georgia's public-school students (Stirgus, 2016). Based on these data, attention to African-American students' disciplinary trends and resulting outcomes is an important area of investigation.

Evidence in the literature varies about the reasons for this disparity. According to the National Center for Education Statistics (NCES; Gray & Lewis, 2015), White students engage less often in disruptive and violent behavior than students in minority subgroups. According to Okonufua and Eberhardt (2015), African-American students at the primary, middle, and secondary levels of education nationally were punished with greater severity than White students who committed similar infractions. These findings are consistent with research which indicate that Black and Brown students are disciplined at a considerably higher rate by their teachers than their White and Asian peers, despite

showing similar levels and types of behavior problems (Carter, Skiba, Arredondo, & Pollock, 2017). In Georgia, African-American students receive OSS more than White students (USDE, OCR, 2014b) and that African-American students in Georgia receive OSS at rates greater than the national average for African-American students (USDE, OCR, 2014a, 2014b) for all frequency types of OSS data collected.

Although many options were available for promoting positive student behavior that could, in turn, reduce the need for disciplinary action such, as OSS, the target school in this study implemented the PBIS system. School administrators in the district where PBIS had been fully implemented developed a behavior policy and procedures for handling discipline referrals and PBIS lessons. They introduced a weekly recess period and monthly assembly for students who demonstrated positive behaviors at school, and implemented a positive behavior incentive program. In the 2017 Spring semester, the faculty/staff fully implemented the PBIS framework.

Evidence in the literature has demonstrated that the PBIS system and the programs and interventions based on this system can be an effective means of reducing problematic student behavior (Vincent, Swain-Bradway, Tobin, & May, 2011), behavior that may result in students receiving discipline referrals and OSS. Evidence also has shown that the system can help reduce the number of discipline referrals and OSS students receive. More specifically, the evidence has shown that using the PBIS system can reduce the disparity between the number of disciplinary actions received by African-American students and the number received by students of other ethnicities (Vincent et

al., 2011). Bradshaw, Waasdorp, and Leaf (2012) have called for additional research on the effect of PBIS on student attendance.

Problem Statement

With high rates of discipline referrals and OSS, students at the target middle school revealed the presence of serious issues. About 25% of its African American students were at risk for disruptive behavior, resulting in OSS (USDE, OCR, 2016). In order to address this problem, PBIS was fully implemented. However, the effect of this intervention has yet to be formally evaluated. Therefore, it is unknown whether implementation resulted in a decrease in the total number of discipline referrals during the current school year compared with those of the previous school year. This lack of evaluation, and thus not knowing the value of the PBIS program in decreasing the numbers of discipline referrals and OSS, could result not only in wasted school resources but also in the perpetuation of high rates of discipline referrals and OSS that might better be addressed using other programs. If the PBIS program is not addressing problematic student behavior, students will continue to be at risk of receiving OSS and experiencing both the immediate and long-term damage associated with separation from the academic setting.

Purpose of the Study

The purpose of this ex post facto, quantitative, quasi-experimental study was to determine the effect that the PBIS program had on student discipline—discipline referrals, in general, and OSS in particular. The independent variable was the implementation of the PBIS program. The dependent variables (DVs) were the number of

office disciplinary referrals, the number of students assigned to OSS, and the total number of days assigned. These DVs were measured in order to provide a full picture of the effect of PBIS on student behavior. Specifically, through disciplinary records kept by the administration, the DVs were measured by the number of office disciplinary referrals. The number of students assigned OSS was also tracked. Moreover, the total number of days students were assigned OSS were tracked through office record keeping in a data excel file. Multiple measures of discipline provided more information to determine the exact nature of the effect of PBIS. Differences in the means of the dependent measure obtained prior to and after the PBIS program implementation were used to test the study's hypotheses and answer the research questions.

Research Questions and Hypotheses

This study was based on three research questions, which, along with their hypotheses, are given below.

Research Question 1: What is the difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8?

H_0 1: There is no statistically significant difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

H_A 1: There is a statistically significant difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

Research Question 2: What is the difference in the number of students assigned to OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8?

H₀2: There is no statistically significant difference in the number of students assigned to OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

H_A2: There is a statistically significant difference in the number of students assigned OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

Research Question 3: What is the difference in the total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8?

H₀3: There is no statistically significant difference in total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

H_A3: There is a statistically significant difference in the total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

Theoretical Framework

The theoretical framework for this study was based on Skinner's (1953) theory of behaviorism. The underlying premise of this theory is that behavior can be changed as the

result of external stimuli (Skinner, 1953). Out of Skinner's work, applied behavior analysis (ABA) developed. In the ABA model, researchers investigate the motivation for specific undesirable behaviors and, to promote positive behavioral change, emphasize personalized intervention planning (Horner et al., 1990). According to Horner and Sugai (2015), PBIS incorporates the basic principles of applied behavior analysis, since it is applied, behavioral, analytic, and efficient, and it has a positive, generalizable effect on student behavior. Furthermore, a number of empirical investigations that show that implementing PBIS is associated with a lower number of office discipline referrals, fewer suspensions and expulsions, augmented social emotional competence, and improved academic achievement (Horner & Sugai, 2015). To date, over 21,000 schools have implemented the PBIS program to address behavioral issues (Horner & Sugai, 2015).

Skinner's behavior modification theory and ABA guided the development of PBIS, which presumes that even extremes in disruptive behavior can be changed with positive reinforcement (Sugai & Horner, 2002; Sugai & Simonsen, 2012). PBIS is a multitiered, comprehensive model for school-wide behavioral improvement. By integrating applied behavior analysis, successful schools research, and systems change theory, the intervention uses positive behavior support, which include specific strategies intended to address challenging behavior by implementing evidence-based methods (Horner & Sugai, 2015). A more detailed description of the theoretical framework is presented in Chapter 2.

The primary objective of this investigation was to evaluate whether positive reinforcement (i.e., PBIS) can be effective in reducing students' undesirable behavior at the target school, thereby reducing the need for exclusionary discipline, such as OSS.

Nature of the Study

This study used the ex-post facto research design, where the investigation commences after the study has taken place and without intervention from the researcher. Quantitative approaches, such as the ex-post facto design, are very common in education research and are useful when researchers are exploring measurable variables that are characteristic of a particular population (Kraska, 2010). The difference between the total number of OSS days assigned to students in Grades 6–8 before and after implementation of the PBIS program was measured; therefore, a quantitative study is appropriate for this study. The use of quantitative data to determine the effect of PBIS-related interventions is evident in the literature (e.g., Vincent et al., 2011). According to Simon and Goes (2013), despite investigating events that have already occurred, ex post facto research determines the influence of one variable on another, and evaluates claims using statistical testing techniques. In education research, an ex post facto investigation is used to observe an existing condition and search back in time for possible contributing factors, in this case, the implementation of PBIS.

The independent variable was the implementation of the PBIS program among all students at the target school. The DVs included the number of office disciplinary referrals, the number of students assigned to OSS, and the total number of days students are assigned OSS.

Because the PBIS program was first implemented at the target school in the Spring semester of 2017, the archival data from the Fall 2016 semester were considered preintervention data, while the Fall 2017 data were considered postintervention data. Because Spring 2017 was the first semester of PBIS implementation, it was not valid to assess for change. Moreover, it was more appropriate to compare the same semesters: Fall 2016 and Fall 2017. The data from these two semesters were used to determine the differences in frequency of the DVs, making the study ex post facto. Data were collected for all students in Grades 6–8 who were present and had discipline referrals during the Fall 2016 and Fall 2017 semesters.

Definitions

This section contains definitions for the study's terms. These terms are directly related to the variables in this study and provide a clear understanding of how the terms are used in this study.

Behavior management: According to the National Institute of Child Health and Human Development (NICHD; 2013), behavior management refers to actions taken to promote behaviors that are wanted and to discourage behaviors that are unwanted. Behavior management is often discussed in terms of therapy, which describes actions caregivers can implement before, during, after, and between episodes of problem behaviors (NICHD, 2013).

Positive Behavioral Interventions and Support (PBIS): The PBIS system is a preventative behavior change system focused on proactive prevention, evidence-based approaches, decision-making based on measurable data, social skills teaching, team-

based techniques to implementation and professional development, as well as a focus on positive student outcomes (Sugai & Simonsen, 2012). Reinforcement is a critical component of the system (NTACPBIS, 2016b). The goal of the PBIS system is to improve students' behavior as a means of improving their social and academic outcomes (Sugai & Horner, 2002).

Assumptions

This study was based on three assumptions. First, it was assumed that the teachers implemented the PBIS program with fidelity and as the program was intended. The PBIS team at the target school facilitated implementation of the PBIS program and trained teachers on how to implement the program. Although the PBIS team and administration followed up with teachers during individual and faculty meetings on their efforts, no data were collected to ensure that they implemented the PBIS program with fidelity. Nonetheless, it can be assumed that, as educators with a vested interest in improving the behavior patterns, the teachers in the target school did implement the PBIS program with a substantial level of fidelity and as the program was intended.

A second assumption was that data recorded by the school about discipline referrals and OSS was accurate and complete. To address this assumption, the PBIS team conducted intermittent checks on the data on two days each month to verify consistent data collection and to locate and correct for any missing data. A third assumption was that teachers instructed and implemented the program in an honest manner and did not intentionally withhold disciplinary referrals because of social desirability to support the PBIS team.

Scope and Delimitations

The scope of this study was intentionally limited. First, it was limited to the exploration of the effect of the PBIS program on two variables: student discipline referrals and OSS. Second, it was limited to a specific school, set of teachers, geographic region, middle school teacher training, and to the experiences and expertise of the researcher.

Limitations

In this study, typical ex post facto research limitations were present. Generalizability of the findings was limited because the sample was not chosen at random and because data were being used from only one school in an urban region of the country. Because there was no random assignment to treatment, there could be confounds in the variables examined and less ability to attribute changes in the dependent variables to the intervention. There was frequently little detail about any dropouts from the treatment, so students who transferred or dropped out may have differed from those who remained in some important ways that could not be captured. Moreover, because the study took place in the naturalistic school setting, there were no doubt extraneous variables and events that were not under researcher control (e.g., assemblies, state-wide testing, student illness). It is also important to note that assigning OSS was frequently more about the administrator than the student or even the behavior. How likely a particular administrator was to invoke OSS was an additional limitation.

Major advantages associated with conducting an ex post facto study include that the data have already been collected, and obtaining the needed permissions to conduct the

study tends to be less complex than when securing a new set of participants. In addition, the research process was less time intensive than studies that require development of new data (Simon & Goes, 2013). However, as is true of many of the commonly used, quantitative statistical models, with ex post facto research, only correlation, not causation, could be determined.

Significance

This study was locally significant because it could generate data about the value of the PBIS program in reducing the number of discipline referrals, OSS, and student absences at the target school. If the PBIS program is not addressing problematic student behavior, students are still at risk of receiving OSS and experiencing both the immediate and long-term damage of being separated from the academic setting. Also, if the PBIS program is not determined to be effective for improving student outcomes, valuable school resources can be reallocated to other more beneficial programs with a strong evidence base, which informs the broader literature on the topic. This study was expected to inform the larger field of education by providing additional verification of PBIS' effectiveness with African American students.

Summary

Student discipline constitutes a serious problem plaguing U.S. schools. OSS, a common approach to dealing with repeated disciplinary issues, is strongly related to students dropping out of school (US DOE, 2014). In fact, suspension and expulsion can influence a number of adverse education outcomes. Students who are expelled or suspended are nearly 10 times more likely to experience academic underachievement and

school failure, hold negative perceptions towards school, drop out, and experience incarceration compared to those who do not receive suspensions or expulsion (US DOE, 2014).

PBIS is a proactive model for addressing discipline problems in schools and its evidence base is well established. The target school of the present study identified the need for research-based programs to address student behavior problems and academic failure, and elected to implement PBIS. The PBIS program provides an avenue for students to achieve academic and social proficiency while simultaneously improving the student attendance rate for the duration of their middle school career. Thus, in an attempt to effectively address behavior concerns, this study examined PBIS and its role in reducing discipline referrals and OSS.

The following topics are covered in Chapter 2: (a) A review of the literature and a description of the literature review strategy, (b) the extant research regarding the negative effects of students being assigned OSS and the evidence base for PBIS and related approaches, (c) the theoretical underpinnings of behaviorism and ABA to demonstrate how these components of the PBIS framework informed the development of the intervention used in this study, (d) A synthesis of the current research and identification of what is known and still unknown, and (e) the relationship between the gaps remaining in the current literature and the manner in which the present study addresses those gaps.

Chapter 2: Literature Review

The primary objective of this investigation was to assess whether positive reinforcement (i.e., PBIS) is effective in reducing students' undesirable behavior at the target school, thereby reducing the need for exclusionary discipline, such as OSS. To that end, the extant literature was reviewed that is relevant to the purpose of this study, which was to identify and assess the effects and outcomes of the PBIS program initiative in relation to student discipline (disciplinary referrals generally, and OSS specifically). Many factors contribute to student behaviors and these same factors may affect the responses of school administrators and teachers to student behaviors. The findings of the literature review are presented in four sections: (a) literature review strategy, (b) theoretical framework, (c) findings of the review of literature relevant to key concepts and variables, and (d) synthesis, conclusions, and transition.

Literature Review Strategy

I sought to conduct a systematic review, that is, “to collate all empirical evidence that fits pre-specified eligibility criteria in order to answer a specific research question” (The Cochrane Collaboration, 2008, p. 6). The search process for this study focused on the identification and acquisition of English-language articles from scholarly, refereed journals through reputable online databases, to provide the best evidence available on the topic. Two databases were used: EBSCOhost and ProQuest Research Library. The following keywords were used in the search process: *discipline, disciplinary practices, out-of-school suspension, African-American students, positive. behavior support, and academic achievement, behavior.*

Theoretical Framework

As stated in the introductory chapter of this study, the theoretical framework for this study was Skinner's (1953) theory of behaviorism. The underlying premise of this theory is that behavior can be changed as the result of external stimuli. The theory applies to the PBIS system because the system is based on the understanding that behavior can be changed with positive reinforcement (Sugai & Horner, 2002; Sugai & Simonsen, 2012).

Skinner (1974) contended that it was possible, through the analysis and effectively addressing the external variables in one's behavioral environment to allow the individual to modify one's behavior in a constructive manner. The primary tool in this process was reinforcement, which may be positive in character or negative in character, depending upon the behavioral situation being addressed (Skinner, 1974). The causal chain of behavior, as envisioned by Skinner (1953) is three linked elements in the behavioral modification process.

The first link is an action or a situation as a three-link process. The first link was an external force, phenomenon, or situation affecting the individual. The second link was the internal psychological response of the individual to the external force. The third link was a responsive behavior on the part of the individual. Thus, the first and third links were connected by the second link.

Skinner (1974) postulated that reinforcement actions could, as stated earlier in this discussion, be either positive or negative, depending upon the situation and upon the desired behavior. Therefore, a teacher can introduce a stimulus, positive or negative, as a reinforcement to promote a desired, constructive change in a student's behavior. Skinner

(1974) stated further that stimuli, as positive and negative reinforcement, may be applied in some situations to effect simultaneous modification in multiple behaviors. This latter observation by Skinner (1974) obviously creates some element of risk for the teacher who must carefully assess situations before introducing stimuli as reinforcements (Wills, Kamps, Fleming, & Hansen, 2016).

Skinner's theory of behaviorism was useful in guiding the proposed study as the goal was to examine the effect of PBIS, an approach based on this theory, on student disciplinary outcomes. This framework guided the organization of the literature review in that existing research was closely examined related to the role of variables within the environment that govern interpretations of behavior, which linked directly to the theory of behavior. Moreover, the research questions that were explored also related to the examination of the role of PBIS, a system of positive reinforcement, on student behavior. Finally, the framework also informed the data collected (e.g., student disciplinary referrals) as the effect of PBIS was evaluated.

Literature Review Related to Key Concepts and Variables

In this review of the literature, the extant research was examined and synthesized to analyze the effect of disciplinary practices on students, specifically exclusionary approaches such as OSS, explore the differential application of OSS based on a number of variables (e.g., ethnicity, disability status), and examine the development of positive behavioral supports as a school-wide intervention to address challenges in school discipline. The findings of the review of literature relevant to key concepts and variables in this study are presented in relation to nine issues. These issues are as follows: factors

contributing to poor student behavior, contributing factors associated with disciplinary referrals, contributing factors associated with OSS, negative outcomes associated with OSS, non-punitive behavioral management options, development of the SWPBIS system, SWPBIS system: Successful implementation and sustainability, the effect of SWPBIS on Student Outcomes, and the effect of SWPBIS on other outcomes.

Factors Contributing to Poor Student Behavior

Glass (2014) identified an important factor related to the issue of student classroom behavior. Glass noted that “Educators face multiple forms of misbehavior in the classroom on a regular basis” (Glass, 2014, p. 372). Thus, it is quite unlikely that a one-size-fits-all solution to the problem of unproductive student behavior in classrooms will emerge, which, according to Glass (2014), implies that teachers and administrators must develop improved understanding of the causal factors underlying student classroom behavior if effective classroom management practices are to emerge.

Fantuzzo, Perlman, and Dobbins (2011) postulated that child maltreatment may product negative effects on academic achievement through a process of fostering unproductive classroom behavior. Child maltreatment may occur in the home, in the community, or, importantly, in the school environment, including the classroom. Skiba et al. (2011) also identified race and ethnicity as two prominent factors that are associated with unsatisfactory behavior by students in school classrooms. Their research found that one of the more important reasons for the higher school disciplinary rates among African American and Latino students than among white students is that punishment for “the same or similar problem behavior” is more severe for African American and Latino

subgroups than it is for white students (Skiba et al., 2011, p. 85; Skiba, 2015). More recently, Lamont (2013) confirmed previous research by demonstrating the predominant majority of OSS and expulsion takes place in the context of zero-tolerance policy applications involving black or Hispanic students and the exclusionary discipline practices are inequitably applied to minority racial and ethnic subgroups (Mitchell, Armstrong, & Armstrong, 2020). This is especially concerning given that the disadvantage for minority students in the school disciplinary process is linked to an increased likelihood of arrest and overrepresentation of minorities in the school–juvenile justice system pipeline later on (Rocque & Snellings, 2017).

Contributing Factors Associated with Disciplinary Referrals

Bryan, Day, Vines, Griffin, & Moore-Thomas (2012) investigated a sample of disciplinary referrals from a longitudinal data set from 2002. The researchers found that disproportionality effects schools nationwide in relation to several important educational outcomes and practices. Among these outcomes and practices that are characterized by disproportionality was discipline referral. The findings of the study also indicated that four factors — students' race, gender, previous disciplinary infractions, and teacher expectations-- were important contributing factors to the phenomenon of disproportionality (Bryan et al., 2012). Expanding the variables contributing to discipline referrals, Sullivan, Klingbeil, and Van Norman (2013) found that student disability and socioeconomic status also had an effect on disciplinary referral. The roles and effects of students' gender, students' race and ethnicity, prior disciplinary actions, and teachers'

expectations in relation to disciplinary referrals by classroom teachers are reviewed in the following discussions.

Student gender. Bryan et al., (2012) found that male students were 2.86 times more likely to receive disciplinary referrals than were female students. Booker and Mitchell (2011) also found disproportionality in disciplinary referrals when controlled for students' gender, albeit at the somewhat lower level of 2:1. Whitford and Levine-Donnerstein (2014), in a study population of Native American students, found that male students were 2.12 times more likely than were female students to receive disciplinary referrals. Sullivan, Klingbeil, and Van Norman (2013) found that male students were more likely to receive disciplinary referrals than were female students, but that the level of disproportionality varied in relation to students' race and ethnicity. The overall level of disproportionality, however, approximated 2:1. Bowman-Perrott et al., (2013), as well as Booker and Mitchell (2011) and Losen and Martinez (2013) all found that male students are more likely to receive OSS than are female students. African American male students were more likely than are other male students to receive OSS, and African American male students who received free/reduced price lunch are more likely to receive OSS than African American male students who do not qualify for this benefit (Sullivan, et al., 2013). Blake, Butler, Lewis, and Darensbourg (2011) found that: "Black girls are overrepresented in exclusionary discipline practices and Black girls' reasons for discipline referrals differ significantly from White and Hispanic girls" (p. 90).

Student race and ethnicity. Numerous researchers have found that African-American students are at greater risk for exclusionary disciplinary practices. For

example, Skiba, Horner, Chung, Rausch, May, and Tobin (2011) examined disciplinary referrals in relation to race and ethnicity. With respect to race and ethnicity, the classifications examined were Hispanic/Latino, African American, white, and Unknown/all others. Comparisons based on the ratio of (a) proportion of total referrals to (b) proportion of school population Hispanic/Latino and white students were underrepresented in disciplinary referrals while African American and Unknown/all others were overrepresented. The ratios were as follows: Hispanic/Latino: 0.45:1 elementary school students; 0.85:1 middle school students; White: 0.75:1 elementary school students; 0.62:1 middle school students; Unknown/all others: 1.66:1 elementary school students; 1.53:1 middle school students; African American: 1.67:1 elementary school students; 1.91:1 middle school students. Thus, the greatest overrepresentation in disciplinary referrals were among African Americans. Similarly, Gregory, Hafen, Ruse, Mikami, Allen, and Piñata (2016) found that African American students received disciplinary referrals “at two times the rate of other groups” (p. 172). Moreover, Vincent et al., (2011), as well as Booker and Mitchell, also found that African American experienced disproportionately more disciplinary referrals than did students in other racial and ethnic classifications. Despite recent evidence of declining rates in the use of exclusionary school discipline practices, (Musu-Gillette et al., 2018), school discipline continues to have a disproportionate effect on students of color (Welch, 2017).

Similarly, Gregory et al., (2016) reported comparable findings. Bowman-Perrott et al. (2013) also found that African American students are more likely to receive OSS than are students of other racial and ethnic groups. Strikingly, Sullivan et al., (2013)

found that black students were three to five times more likely to be suspended than their peers in other racial and ethnic groups. Confronting such unacceptable findings such as those discussed above, Tobin and Vincent (2011) found that: “Schoolwide Positive Behavior Support strategies, such as praise and positive reinforcement, were associated with reductions in disproportionate exclusions” (p. 192).

In the instance of interactive effects involving both gender and race/ethnicity, Okonofua and Eberhardt (2015) concluded that teachers were likely to view multiple discipline referrals by black students as a related pattern as opposed to the situation when applied to White students. Similarly, Bryan et al., (2012) found that, among female students, Black females were twice as likely (OR = 2.24) and multiracial females had three times greater odds (OR = 3.22) of being referred for disruptive behavior than was the case for corresponding white female students. Further, Bryan et al., (2012) described how Black girls in their investigation were overrepresented for exclusionary disciplinary correction and had a twice greater likelihood to be given in-school and OSS than all female students. Moreover, Black girls’ risk for overrepresentation in exclusionary disciplinary action was most pronounced when Black girls’ discipline infraction were compared to White female students as opposed to Hispanic female students.

Previous infractions. Okonofua and Eberhardt (2015) found that previous infractions tended to result in changes in the way in which teachers viewed subsequent infractions by the same student. The severity of this reaction was found to be greater with respect to African American students than with respect to white students (Okonofua & Eberhardt 2015).

Teachers' Expectations of Students

The formulation of student behavioral expectations and the presentation and explanations of these expectations to students by teachers, tend to be viewed by teachers as behavioral standards, which if breached, warrant disciplinary referral (Ross & Horner 2013). Correspondingly, when it comes to discipline, students may interpret their experiences with educators' disciplinary tactics as having a cultural basis based on teacher expectations of specific minority groups (Carter Andrews & Gutwein, 2020). The development and promotion of positive student behavioral expectations, however, have been found to lead to improvements in student behaviors, and, in turn, to reduced levels of disciplinary referrals over the long term (Bradshaw et al. 2012). Kennedy and Swain-Bradway (2012) reported a comparable outcome when student behavioral expectations were introduced as a component of a PBIS system. Fitzgerald, Geraci, and Swanson (2014) reported comparable outcomes in a study of student behavior in schools located in rural areas.

Other Contributing Factors Associated with OSS

OSS is a severe form of student disciplinary action. Skiba et al., (2011) identified factors that contribute to the infliction of OSS on students as (a) race, (b) socioeconomic status (c) cultural mismatch and/or racial/ethnic mismatch between teacher and student. Sullivan, Van Norman, and Klingbeil (2014) also cited student disabilities as a contributing factor. The consideration of contributing factors that were associated with OSS were explored further in the following discussions that related OSS to (a) students with special needs, (b) student race/ethnicity (c) student gender, (d) student social skills,

and (e) policy trajectory. These issues are of overriding importance because research has found “a significant inverse relationship between suspensions and achievement, along with a significant positive relationship between suspensions and dropout” (Noltemeyer, Ward, & Mcloughlin, 2015, p. 224). Additionally, Black (2016) found that

School leaders argue that these suspensions ensure an orderly educational environment for those students who remain. Social science demonstrates the opposite. The practice of regularly suspending students negatively affects misbehaving students as well as innocent bystanders. All things being equal, schools that manage student behavior through means other than suspension produce the highest achieving students. In this respect, the quality of education a school provides is closely connected to its discipline policies. (p. 1)

Therefore, current research suggests strongly that addressing behavioral problems through means other than suspensions is associated with more positive academic outcomes for students.

Student Special Needs Status

Although this study was not specifically investigating students with special needs, special needs status has also been found to be a factor closely related to disproportionate rates of disciplinary referral. Students with emotional/behavioral disorders, attention deficit hyperactivity disorder, and learning disabilities were most likely to be excluded and be excluded multiple times than students without disabilities or disorders (Bowman-Perrott et al., 2013). Hill and Flores (2014) further expanded this research on disability finding that office discipline referrals with a resolution of OSS are more likely to be

submitted by preservice school personnel who teach students with emotional/behavioral disorders require adequate training, resources and support to properly respond to students with the disorder, and that an absence of such training and support.

Finally, with respect to disability, research has demonstrated that Black students with disabilities are at a greater risk of suspension than are students from other socio-demographic subgroups and students of other racial/ethnic classifications (Sullivan et al., 2013). Losen and Martinez (2013) found that special needs students were three times as likely to be suspended than are non-special needs students. Moreover, Woodson and Harris (2018) found that Black male students, when compared to the total special education population, are disproportionately placed in programs for Emotional Disturbance, which often is a result of disciplinary issues. African American students with disabilities at the target school are among those who will be examined as part of this study.

Student Social Skills

Bowman-Perrott et al. (2011) found that higher levels of student social skills were associated with lower levels of OSS. Fantuzzo et al. (2011) found that child maltreatment at home, in the community, or in the schools can inhibit the development of positive social skills. Lee et al. (2011) found that students displaying aggressive attitudes and behaviors were more likely to be suspended, and the probability of becoming dropouts increased. Bullying behavior specifically was associated with OSS (Good, McIntosh, & Gietz, 2011). However, more severe student misbehaviors may result in suspensions which cannot be validated by various behavioral rationale with regards to racial

differences; however, school officials have the propensity to issue more severe punitive consequences to African American male students (Huang and Cornell 2017).

Negative Outcomes Associated with OSS

Out of school suspension (OSS) is designed as a punishment for students. The primary justification for the use of OSS is that such use creates a more positive learning environment for those students who remain in the classroom. A secondary justification for the use of OSS is that it will persuade offending students to adjust their behavior and return to the classroom. The first justification for OSS received some degree of support in the literature, as well as higher levels of support among classroom teachers and school administrators. The second justification received little support in either the literature or in the schools (Irby, 2013). A comparable finding was reported by Lee et al. (2011). Both groups of researchers also found that such outcomes (OSS and dropping out) are strongly associated by student race and/or ethnicity. Not surprisingly, Losen and Martinez (2013) found that OSS students drop out at a higher rate than is true of non-OSS students. Furthermore, Noltemeyer et al. (2015) reported a significant inverse correlation between suspensions and academic success, along with a notable positive relationship between suspensions and failure to complete high school. Similarly, Skiba et al. (2011) found that OSS was a chief contributor to variations in academic achievement by students in different racial and ethnic groups.

In a more recent investigation, Bottiani, Bradshaw, and Mendelson (2017) found that OSS were associated with Black students' perceptions of less school equity, less

school belonging, and increased adjustment problems. This study and others continue to show the range of negative outcomes linked to OSS, particularly for Black males.

Non-Punitive Behavior Management Options

Lane-Garon et al., (2012) identified conflict resolution education (CRE) as a nonpunitive behavioral management option that could be effective in school environments. CRE is a behavioral management process wherein student peer mediators assist other students resolve conflicts. The expectation was that process outcomes would be mutually beneficial, thereby preventing an escalation of the conflict (Lane-Garon et al., 2012). Positive outcomes emanate from a non-punitive behavioral management process that result in an agreement between the parties to the dispute that clearly states what each party will do should problems arise in the future.

Simonsen, Myers, and Briere (2011) identified another process an effective non-punitive behavioral management solution as the behavioral check-in/check-out (CICO) protocol. CICO is a “non-punitive behavior management intervention that is implemented with the intent of decreasing students with off-task and other problem behaviors” (Simeonsen et al., 2011, p. 31). A recent study of CICO found that the combination of social skills instruction and academic planning with the CICO mentoring program improved Black students’ academic planning and behavior, and reduced disciplinary infractions (Toms, Campbell-Whatley, Stuart, & Shultz, 2018). Hawken et al. (2011) reported on the application of a nonpunitive behavioral management intervention called the Behavior Education Program. The Behavior Education Program also involves the check-in/check-out intervention approach intended to equip students who are

experiencing conflict with strategies that prevent an escalation in severe behavior (Hawken et al., 2011).

The sustainability of school-wide positive behavioral interventions and supports are influenced by the most important perceived enablers and barriers which were identified in a study conducted by Pinkelman, McIntosh, Rasplica, Berg, & Strickland-Cohen (2015). The most effective enabling actions and the most obstructive barriers to the implementation of non-punitive behavioral management options were described. Enablers included staff buy-in, school administrator support, and consistency of implementation. Barriers were noted to include absence of staff buy-in, the amount of time devoted to the program, and funding support. From a review of both facilitators and barriers to long-term successful PBIS implementation, school administrators and teaching staff played critical roles.

Development of the SWPBIS System

School-Wide Positive Behavior Supports (SWPBS) gives an organizational structure for increasing the social behavior climate of schools and facilitating the effect of teaching and learning on achievement while also augmenting proactive management (Sugai, 2008). The foundations of the SWPBIS system are (a) behavioral theory, (b) applied behavioral analysis, and (c) positive behavior support. The concepts derived from each of the foundational pillars of SWPBIS will be discussed.

Behavioral theory posits that behavior is “learned, lawful, and manipulable” (Sugai & Horner, 2008, p. 2). Lawful is important. Learned and manipulable are critical to the effectiveness of SWPBIS. Applied behavior analysis implies that the behaviors to

which theory is applied are “socially important” and “observable” (Sugai & Horner, 2008, p. 2). Social importance is necessary. Observability is critical to the effectiveness of SWPBIS.

Positive behavior assumes that a significantly small percentage of students have a history of learning which enables school-wide interventions to be effective and individualized specific interventions are needed for those students (Sugai & Horner, 2008). The implication is that schools do not give up on students at risk with respect to discipline. Thus, school-wide discipline systems should be designed to support the majority of students, prevent the development of chronic problem behavior for high-risk students, promote identification of students who require specialized and individualized behavioral support, and then develop and provide such support (Sugai & Horner, 2008).

Applications of applied behavior analysis to promote the improving human behavior was introduced in the late 1960s by Baer, Wolf, and Risley (1968). The need for behavior management strategies that were non-punitive for the behavioral management of individuals with disabilities emerged in the 1980s, when federal funding for non-punitive behavioral support was authorized (Solomon et al, 2012). Positive behavior interventions and supports (PBIS) and functional behavior assessments were codified into school discipline and classroom management practices as a result of amendments made during the 1997 reauthorization of the Individual with Disabilities Act (Sugai & Horner, 2002).

The goal of the PBIS framework is to enrich the social behavior and academic outcomes for every student by (a) systemic allocation of resources to ensure effective implementation with fidelity; and (b) emphasis on the utilization of data to advise the

decisions about the progress monitoring of evidenced based behavioral practices, implementation, and selection (Sugai & Simonsen, 2013). PBIS systems proactively address the preemptive function of environmental and individual behaviors (Marchant, Heath, & Miramontes, 2012).

Programs that are being considered for implementation must have social validity in order to be considered relevant and valuable to the potential consumers it will serve. Society's evaluation of the applicability, reliability, and validity of a program will determine the social validity (Miramontes, Marchant, Heath, & Fischer, 2011). Evaluations should be conducted at each level of the programs' implementation to determine if goals, procedures, and outcomes were obtained (Miramontes et al., 2011).

Fitzgerald, Geraci, and Swanson (2014) noted that the effectiveness of educating children with disabilities, inclusive of behavioral and emotional disabilities, can be improved has been demonstrated in 30 years of research and experience through the development and application of PBIS systems. Sugai and Horner (2002) stated that the defining features of a PBIS system are: (a) the integration of four critical elements; (b) the adoption of a multi-systems perspective; and (c) providing a continuum of behavior support. Four critical elements that must be integrated include: social competence and academic achievement, building positive staff behavior, enhancing decision making, and improving student behavior. The PBIS tiers allow all student behavioral needs to be addressed using a system of proactive planning and support, with more specialized approaches reserved for students displaying the most intensive behavioral issues. The first tier centers on core, universal instruction and support. The second tier focuses on

specific instruction /intervention and supplemental supports, while the third tier provides intensive individualized supports based on student needs (Sugai & Horner, 2002).

SWPBIS System: Successful Implementation and Sustainability

A number of factors affect both (a) the successful implementation of a SWPBIS system and (b) the sustainability of such a system once implemented (Pinkelman et al., 2015). The effects of these factors are discussed in the following sections of this segment of the literature. The factors addressed in these discussions are school culture, consideration of culture effects, teacher buy-in, teacher and staff training, administrator buy-in, administrator support, program support, resource requirements, fidelity of implementation, and grade level. Similarly, McIntosh et al, (2014) also confirmed the importance of stakeholder involvement, administrator support, district support, training, resources, fidelity of implementation, and professional staff buy in. Decisions to adopt a SWPBIS also were found to be associated with school district predictors, as opposed to individual school predictors (Pas & Bradshaw, 2012). Pas & Bradshaw (2012) also found that “school-level indicators of need...are generally associated with” required level of teacher and staff training for PBIS, as well as with the adoption of SWPBIS (p. 545). School-level indicators of need were identified as (a) student suspension rates, (b) student mobility, and student academic achievement rates.

Both barriers and enablers of successful PBIS system implementation have been documented (Bambara, et al 2012). School professionals need to identify barriers and enablers. Bambara et al. (2012) found that the barriers that were perceived to be most problematic were also the barriers that were the most numerous. Debnam, Pas, and

Bradshaw (2012) indicated that although most schools have implemented school wide PBIS systems and address student behavior by utilizing SST's additional school-level training for a process of identifying evidenced-based interventions for students is needed.

Other researchers have identified additional barriers and enablers to PBIS sustainability. Pinkelman, et al (2015) identified barriers and enablers related to the sustainability of a SWPBIS system. The most frequently cited enabling factors with respect to sustainability were found to be (a) staff buy-in, (b) school administrator support, and (c) consistency in the application and the functioning of the SWPBIS system. The most frequently cited barriers with respect to sustainability were (a) staff-buy-in, (b) time devoted to the SWPBIS system, and (c) the adequacy of funds devoted to the SWPBIS system (McIntosh et al., 2015). Interestingly, staff buy-in was found to be implicated in SWPBIS sustainability as both an enabler and as a barrier. In a recent study of teacher-cited barriers to PBIS, Nichols (2017) found teachers with higher levels of self-efficacy and more positive attributions were more likely to endorse behavioral approaches aligned with the PBIS.

School culture. The successful implementation of a SWPBIS system and the sustainability of such a system requires the development of and the durability of a positive school culture. Positive and supportive social interaction within a school culture is essential to optimal learning (Barton & McKay, 2016; Reno, Friend, Caruthers, & Smith, 2017). Bambara et al. (2012) found that PBIS systems are less successful in schools in which the school culture supports punitive measures for addressing problem behaviors. On the other hand, when positive outcomes were observed (meaning that

student problem behaviors were successfully dealt with using PBIS-based practices), the effect on school culture was positive, and, in turn, the effectiveness of the SWPBIS, as well as the sustainability of the SWPBIS, was positive (Bambara et al., 2012).

Another positive outcome of a positive school culture occurs in situations where in schools implement both a PBIS and a Conflict Resolution Education) program to support the use of student peer mediators to assist other students resolve conflicts resulting in a mutually beneficial outcome (Lane & Garon et al., 2012). Concerns with school climate and problem behaviors should be addressed when identifying the social expectations of the PBIS expectations matrix. The reflection of students' cultural background can be facilitated by the inclusion of culturally diverse stakeholders (Gay 2013). Incorporating a bullying prevention campaign into a school culture also strengthens a SWPBIS system by creating a safe cultural environment (Gay, 2013).

Consideration of culture effects. Fallen, Okeefe, and Sugai (2012) concluded that student culture is an important factor in the success of PBIS-based programs. Further, the researchers suggested that SWPBIS program developers consider student culture in the development phase of these programs. Additionally, the cultural identity of students should be considered in an effort to establish cultural relevance into PBIS systems implementation (Lynass, Tsai, Richman, & Cheney, 2011). Freeman et al., (2015) found that a positive school culture strengthened the positive outcomes associated with a SWPBIS system by lowering drop-out rates and better preparing high school students for “post-school success” (p. 310).

Teacher buy-in. Swain-Bradway, Pinkney, and Flannery (2015) found that a number of negative outcomes that may occur in the functioning of SWPBIS programs can be attributed to an absence of or weak levels of teacher buy-in. Bohanon et al. (2012) found that a successful multiphase implementation process for an SWPBIS system improves the chances that teachers will support the SWPBIS system. Richter, Lewis, and Hager (2011) found that principal teacher leadership in the development and operation of a SWPBIS system is associated with higher levels of teacher satisfaction that, in turn, enhances the probability of teacher buy-in to the SWPBIS system. McIntosh, et al. (2013) found that teachers have a positive effect on both the implementation and the sustainability of a SWPBIS system. Conversely, the absence of teacher buy-in has an equally strong negative effect on both implementation and sustainability.

Teacher and staff training. The training of school professionals is a substantial factor in SWPBIS (Palmer & Noltemeyer, 2019). Coffey and Horner (2012) found that access to coaching by teachers and staff is significantly related to the sustainability of a SWPBIS system. Cavanaugh and Swan (2015) similarly found that benefits to both SWPBIS implementation and to the sustainability of such a system can be enhanced by training school personnel to become SWPBIS coaches. According to Bambara et al. (2012), school administrators should provide training in problem-solving protocol and practices for application in the functioning of SWPBIS systems.

Administrator buy-in and administrator support. McIntosh et al. (2013) found that administrator buy-in has a positive effect on both the implementation and the sustainability of a SWPBIS system. Conversely, the absence of administrator buy-in

tends to dim the changes for SWPBIS system success. McIntosh et al. (2014) found that administrator support is a major component that exerts a positive effect on the implementation and on the sustainability of a SWPBIS system. Richter et al. (2011) concluded that administrator support is a key component in the development of a socially proactive school environment. Kennedy and Swain-Bradway (2012) stated that passive school administrator behavior, together with administrator behavior that are not vocal leaders in the support of SWPBIS systems create situations where in a SWPBIS system will not in all probability create positive outcomes on student behavior.

Program support. Program support, within the context of the SWPBIS system concept, refers to both (a) support for the SWPBIS system from school administrators, school staff, teachers, and entities external to a school system that includes both organizations and individuals (especially parents), and (b) support provided by the SWPBIS system to students in need of behavioral modification. Each facet of program support has the potential to enhance or to retard the successful implementation of a SWPBIS, as well as the sustainability of a SWPBIS (McBride, Chung, & Robertson, 2016). Program support from all stakeholders is essential to successful implementation of this approach school-wide.

Resource requirements. Time, primarily in the form of the time that individual school administrators, classroom teachers, and other staff members of a school organization are committed to devote to the implementation, functioning, and sustainability of a SWPBIS system is one of the more critical of the resource requirements for a SWPBIS system (Bambara et al, 2012). Equally important in terms of

resource support for the implementation, functioning, and sustainability of a SWPBIS system is the adequacy of funding (Swain-Bradway et al., 2015).

Fidelity of implementation. Implementation with fidelity implies that, when implementing a SWPBIS system, administrators and program developers adhere both accurately and consistently with the standards, goals, objectives, and underlying philosophy of the PBIS concept. Freeman et al. (2015) found that schools implementing SWPBIS with fidelity for more extended periods of time may have a greater likelihood for reductions in dropout rates, thereby attaining one of the goals of PBIS systems. Furthermore, Swain-Bradway et al. (2015) found that fidelity of implementation leads to positive outcomes with respect to (a) awareness of teacher workload, (b) student voice in the preparation of lesson plans, (c) enhanced teacher choice, and (d) the teaching of behavioral expectations.

Bradshaw, Mitchell, and Leaf (2010) found that a high fidelity of implementation of PBIS system was related to significant levels of integration of school processes and programs. Coffey and Horner (2012) found that administrator support and communication are the strongest predictors of fidelity of implementation. Coffey and Horner (2012) also found that fidelity of implementation is a function of SWPBIS team functioning which includes knowledge and ability level of the team members and the attendance of regular scheduled meetings. The utilization and development of local staff members to deliver PBIS training and coaching was found to positively affect the fidelity of implementation (Newton, Algozzine, Algozzine, Horner, & Todd, 2011). Simonsen et

al. (2012) found that an absence of fidelity in implementation and functioning makes it difficult to measure the effectiveness of PBIS systems.

To address this issue, more recently, researchers have developed a school-wide PBIS measure to ensure fidelity. The SWPBIS Tiered Fidelity Inventory is used to provide a valid, reliable assessment of the extent to which school professionals are implementing behavioral interventions and core features of PBIS are consistently in place (Algozzine et al., 2014). This inventory contains suggested scoring criteria, data sources for school personnel, and sample inventory measures to enable school teams to evaluate their own implementation fidelity and make adjustments as needed (Algozzine et al., 2014). This tool also has strong construct validity for evaluating fidelity at all three tiers, strong interrater and 2-week test–retest reliability, high usability for action planning, and correlations with existing SWPBIS fidelity measures (McIntosh et al., 2017).

Grade level. Bohanon et al. (2012) found little evidence regarding the effect of PBIS at the high school level. This finding, according to the researchers, suggests that grade level of students may mediate the effect of PBIS system implementation. Bradshaw et al. (2010), however, found that results vary according to school level (elementary, middle, high), and that: “Larger statewide evaluations of SWPBIS have documented significant reductions in suspensions among elementary and middle schools and reductions in office discipline referrals among middle and high schools trained in the school-wide model” (p. 135). Such findings from a decade ago suggest variability in effect of PBIS on discipline among students.

More current research indicates there is an emerging evidence base for the positive effects of SWPBIS at the high school level (Flannery, Hershfeldt, & Freeman, 2018). Freeman et al., (2016) conducted a study to examine the connections between implementation of SWPBIS and academic, attendance, and behavior outcomes across a sizeable sample of high schools from 37 states. Although there were some difficulties with SWPBIS implementation at the high school level, evidence suggests positive relationships between SWPBIS implementation and behavioral outcomes as well as attendance among high schools that demonstrated fidelity of implementation. Similarly, Flannery, Fenning, Kato, & McIntosh (2014) found in their study of 12 high schools that as fidelity of implementation increased, student behavioral problems significantly increased.

Effect of SWPBIS on Student Outcomes

SWPBIS systems are designed to create positive student outcomes. As behavioral modification systems, SWBIS systems by their very nature are intended to foster improvements in student behavior. Beyond that important goal, however, SWPBIS systems are intended to produce additional positive student outcomes. These positive outcomes, which are addressed further in the discussions that follow, are as follows (Pas & Bradshaw, 2012): student behavior, disciplinary referrals, student suspension, student attendance, and student achievement.

Student behavior. Bradshaw, Waasdrop, and Leaf (2012) found that the effective implementation and functioning of SWPBIS systems lead to decreases in the frequency of student problem behavior. Schools with high fidelity of PBIS implementation

experienced a decrease in the number of students requiring additional behavior support (McIntosh, Bennett, & Price 2011). Simonsen, Myers, and Briere (2011) found that students showed a reduction in the frequency of problem behaviors as a result of the functioning of a Check-In/Check-Out Intervention segment of a SWPBIS system. Similar findings on the positive influence of PBIS on student behavior has been confirmed in more recent studies as well (Childs, Kincaid, George, & Gage, 2016; Flannery et al., 2014; Freeman, et al., 2016).

Disciplinary referrals. Vincent et al. (2011) found reduced overall numbers of office discipline referrals system among students with Individualized Education Programs (IEPs) in elementary schools that implemented a SWPBIS system. There were some inconsistencies among student outcomes in both the PBIS implementing schools and control schools. It was also found, however, that the inconsistencies were likely due to the small number of Asian and Native American students included in the study, as well as the researchers' inability to access IEP data about all the students at the participating schools. Another problem involved incomplete reporting of student ethnicities by school administrations (Vincent et al., 2011). The conclusion drawn, however, was that the SWPBIS system did help reduce overall numbers of office discipline referrals among the schools that implemented a SWPBIS system. While Black students still experienced greater numbers of office discipline referrals than students of other ethnicities, the equity gap was lesser in the schools that implemented the PBIS system (Vincent et al., 2011).

Both Bohanon et al (2012), as well as Bradshaw et al. (2012) found that decreases in disciplinary referrals followed the successful implementation of SWPBIS systems.

Bradshaw et al. (2012) found that the implementation of a SWPBIS system led to a decrease in discipline referrals, with positive outcomes more prevalent among students who had been exposed to the system since kindergarten. McIntosh et al. (2011) found that reductions in the rate of student suspensions occurred in schools in which SWPBIS systems were implemented and operated with a high degree of fidelity in relation to PBIS standards. Moreover, Simonsen et al. (2012) and Bartosik (2014) reported similar outcomes with respect to reductions in office discipline referrals and student suspensions following SWPBIS. Additionally, Good et al. (2011) found that SWPBIS systems characterized by high level fidelity produced positive outcomes related to student suspensions wherein bullying behavior was a causal factor. Finally, Holcomb (2016) reported that one middle school in Maryland reduced its disciplinary referrals by 98% following implementation of SWPBIS, from referring over 1200 students to the principal's office to under 30 in a single year.

Student attendance. Freeman et al. (2015) found that positive results related to student attendance occurred at high schools where WPBIS systems had been implemented with a high level of fidelity. These included students showing fewer absences and unexcused tardies, among other benefits (Freeman et al., 2019). Caldarella, Shatzer, Gray, Young, and Young (2011), also reported decreased rates of unexcused student absences in schools where SWPBIS systems has been implemented successfully and with fidelity.

Student achievement. Low academic achievement is often associated with problem behavior (Fleming, Harachi, Cortes, Abbott, & Catalano, 2004). However,

McIntosh, et al. (2011) Kennedy and Swain-Bradway (2012), as well as Chaparro, Smolkowski, Baker, Hanson, and Jackson (2012) found that improved levels of student academic achievement follow the implementation of SWPBIS systems to address student behavior. A recent study conducted by Madigan, Cross, Smolkowski, and Stryker (2016) assessed the long-term influence of schoolwide positive behavioral interventions and supports (PBIS) on student academic achievement across 21 elementary, middle, and high schools. Results suggested that implementation of PBIS was significantly correlated with increased student academic achievement and that the rate of change for student achievement in PBIS schools was greater than for students in matched control schools. However, more recent studies have questioned the extent PBIS impacts student achievement (Notelmeyer, Palmer, James, & Petrasek, 2019).

Effect of SWPBIS on Other Outcomes

As important as student outcomes attributable to the implementation and functioning of SWPBIS systems are, there are also other outcomes that are associated with SWPBIS systems that are important. These other outcomes include the effects of the successful implementation of SWPBIS systems on (a) school culture, (b) school safety, and (c) teacher efficacy. These outcomes are addressed in the discussions that follow below.

School culture. Caldarella et al. (2011), Richter et al. (2011), as well as Miramontes et al. (2011) found that the successful implementation and functioning of a SWPBIS system led to positive changes in school culture. It was found that schools implementing SWPBIS systems also implement problem-solving teams, identify

behavioral expectations, and establish a system of reinforcement for students displaying the expected behaviors. Ross and Horner (2013) found that these actions lead to positive changes in school culture. Finally, Nocera, Whitbread, and Nocera (2014) found that their SWPBIS implementation at the middle school level resulted in statistically significant improvement in school climate as measured by a school climate and student resiliency survey.

School safety. Ensuring a safe, healthy school climate where all students are free from violence is critically important. Federally-issued annual reports demonstrate the importance of monitoring school violence as these profiles provide a detailed account of safety and climate across the nation's schools (Musu-Gillette, Zhang, Wang, Zhang, & Oudekerk, 2017). Moreover, disruptive behavior and safety frequently top the list of parents and teachers' concerns about education. SWPBIS serves as an alternative to punitive, exclusionary practices, such as OSS and expulsions, and has been shown to improve school climate (Skiba & Sprague, 2008). In PBIS, when significant and serious instances of problem behavior occur, a rapid response is required in order to ensure student and staff safety as well as to effectively de-escalate the behavior. Safe crisis management steps are needed and should be in place in advance (Ohio PBIS, 2013). With its focus on prevention of minor and major behavioral issues, support systems, individualized consequences, and reteaching plans for major discipline problems, PBIS addresses issues of school safety as an integral part of its framework to provide a positive experience for all students (James, Smallwood, Noltemeyer, & Green, 2018).

Perceptions of improved school safety, as well as actual threats to safety in school environments, have been reported on in several recent studies. For example, James et al. (2018) surveyed teachers, administrators, school staff and students at a SWPBIS school to gather perspectives about school safety and the role of PBIS in improving school climate. Overall, respondents indicated safety was a strength of their school since SWPBIS implementation. Relatedly, Flannery et al. (2014) found significant decreases in student office discipline referrals in SWPBIS schools, with increases in referrals in matched comparison schools. Moreover, as fidelity of implementation of the program increased, disciplinary referrals decreased. Similar findings were reported by McIntosh et al. (2011), Good, McIntosh, & Gietz, (2011), and Bradshaw et al. (2012). In each instance, the outcomes were associated with the successful implementation and functioning of SWPBIS systems in schools. In the case of Bradshaw et al. (2012) students who attended SWPBIS schools were a third less likely to receive discipline referrals than students in comparison schools, with the greatest positive results among children who initially received SWPBIS in kindergarten. Therefore, SWPBIS has the potential added benefit of improvements in overall safety at school, from the earliest grades.

Teacher efficacy. Teacher efficacy reflects a teacher's feeling of competence as it relates to his/her ability to affect the outcome of students, especially the students who are difficult to teach and are not motivated (Ross, Romer, & Horner, 2011). Teachers who are reinforced for their efforts to improve academics and behavior outcomes of students experience higher levels of efficacy and are more likely to continue to repeat that effort in the future. Teachers who do not feel reinforced for their efforts to improve academic and

behavior outcomes of students are less likely to continue to give the effort, which results in diminished efficacy. Teachers in schools where SWPBIS has been successfully implemented with fidelity have expressed higher perceptions of teacher efficacy than teachers in schools where SWPBIS has not been successfully implemented with fidelity (Kelm & McIntosh, 2012). Increased teacher efficacy was experienced by teachers who provided students with more general verbal praise (Reinke, Herman, & Stormont, 2013). Teachers who report low efficacy should be provided with additional training and support in areas of identified weaknesses (Reinke et al., 2013).

Summary and Conclusions

The literature reviewed in this chapter clearly substantiates the validity of the theory of behavioral change as a theoretical basis for understanding the relevance of the SWPBIS system concept and structure as a conduit for the development of positive changes in student behaviors and student outcomes. The findings of the literature review indicate that the implementation and the sustainability of SWPBIS systems are not easy tasks, but neither are they beyond the capacity of school administrations. Implementation and sustainability of the SWPBIS system concept, however, does require commitment and diligence in effort by all members of implementing school systems. The following chapter of this study describes and explains the methodology that was employed in the pursuit of the investigation of the research problem addressed by this study.

Chapter 3: Research Method

The purpose of this quantitative, ex post facto study was to determine the effect of the PBIS program on student discipline, for example, on the number of student office discipline referrals, the number of students to whom OSS was assigned, and the total number of days OSS assigned before and after PBIS implementation. This chapter includes a discussion of the research design, the population, the sampling and sampling procedures, archival data, operationalization of constructs, setting and sample size, and methods of data collection and analysis.

Research Design and Rationale

This study employed a form of causal–comparative/quasi-experimental research known as ex post facto research (Salkind, 2010). In an ex post facto study, nonexperimental designs are used where one or more preexisting conditions are examined to determine the effect of the condition on differences observed in participants. An independent variable is identified, but not manipulated, and the effect of the independent variable on the DV is measured. Moreover, regarding participants in the design, in this study, participants were not randomly assigned. Instead, all students of the school were included as participants since the PBIS program was implemented school-wide. Researchers attempt to discover whether differences between—or in this case, within—the same groups, have resulted in an observed difference in the DVs (Salkind, 2010).

The causal–comparative approach was the most appropriate approach when attempting to determine whether there was a statistical difference in the students' records

before and after implementation of the PBIS program. Choosing treatment groups that are preexisting or naturally formed is one of the most commonly used approaches when conducting research and was applicable to the present study. At the target middle school, the pretreatment (Fall 2016 semester) variable (PBIS) was compared to discipline referrals and OSS of the posttreatment (Fall 2017 semester) variable. In this design, I investigated the effect of the PBIS program after the treatment had already occurred. Specifically, a single group, pretest–posttest design was used to determine the answer to the research questions.

Population

The target middle school was located within a school district in a small southeastern city in the United States. The city's estimated demographics as of December 2019 were as follows: 56,426 residents, residing in 23,445 households and a total of 11,234 families. The city's racial makeup is 51.9% African-American, 42.4% White, and 1.9% designated as Other. The percentage of children under age 18 who are living below the poverty level was 21.6% (U.S. Census Bureau, 2019). The target middle school was 97% African-American, 2% White, and 1% of Other. The local economy consists mainly of factories, manufacturing plants, agriculture, a local university, and a local Air Force base.

The local school district has about 8,390 students enrolled in nine schools, including six elementary schools, two middle schools, and one high school. The average student enrollment at the target school in the 2016–17 school year was 730 students and in the 2017–18 school year it was 745 students, on average, in Grades 6-8 (approximately

240–245 students per grade level). The student population was comprised of 410 students for the 2–year timeframe of this study. The students were in Grades 6–7 for the 2016–17 school year and they continued enrollment in Grades 7–8 for the 2017–18 school year. Of those 410 students, 180 had one or more discipline referrals during the study time frame and they comprised the final sample.

Sampling Procedures

Purposeful sampling supports selecting participants who contributed meaningful information to the study. In this study, the school had been selected purposively as it contains the student population of interest and has implemented PBIS school-wide. In addition, convenience sampling was used in this study as the student population constitutes a readily available group that is easily accessible to the researcher. The study sample consisted of 6th–7th grade students from Fall 2016 preimplementation who progressed to 7th and 8th grade students in the Fall 2017 semester postimplementation with at least one discipline referral. Archival data were used for this study because PBIS had recently been implemented and the staff was attempting to determine the statistical significance of PBIS on the discipline referral pattern.

As described, students in grades 6 and 7 preimplementation and who progressed to grades 7 and 8 following implementation at the target school with at least one discipline referral are included in the study. The implementation of PBIS was done on a school-wide basis; therefore, the disciplinary data of 6th–8th grade students with an office discipline referral was included for the purposes of evaluating the effect of the program.

It was presumed that PBIS is a positive program for all students, thus all students were the focus of this investigation.

Sample Characteristics

Pre-PBIS Data on disciplinary referrals, incidents resulting in OSS, and total days of OSS were collected during the 2016–2017 academic year from 268 6th–7th grade students. Post-PBIS Data for the same three DVs were collected during the 2017–2018 year from 268 7th–8th grade students. Of these students, the sample used to test the study's three hypotheses consisted of only those who had both a pre-PBIS and a post-PBIS scores for at least one of the three variables. Repeated-measured pre-/post-PBIS data for disciplinary referrals and days of OSS were obtained from 142 students.

Post-Hoc Analysis of Observed Power

The G*Power 3.1.9.4 power analysis tool was used to calculate the observed power obtained for each dependent variable. Using an alpha level of .05 and a power level of .80, an effect size of .30 can be detected with a sample of 88. This effect size is slightly larger than the .20 threshold for what Cohen (1988) labelled a small effect. This indicates that for all three DVs the sample achieved a sufficient level of power to correctly reject the null hypothesis when effects of in DVs are present.

Treatment

The PBIS framework was the treatment for this study. According to the Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports, 2015), the PBIS framework emphasizes three levels of intervention with students to address behavior: primary, secondary, and tertiary. The

primary level includes universal supports intended to prevent the development, or incidence, of problem behaviors through the proactive implementation of high-quality instruction across students, staff, and settings. At the secondary level, targeted efforts are made to reduce the prevalence of problem behaviors among students for whom the primary, universal interventions have not been effective. At this level, more targeted, small-group interventions are provided. Finally, the tertiary level is geared toward reducing problem behaviors that have been resistant to change and are unlikely to be effectively addressed by the 1st and 2nd tier interventions. At this level, interventions are individualized for students and include responses to contexts where challenging behavior is likely to occur (OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports, 2015).

Regarding school staff training and support, PBIS emphasizes organizational supports that provide school personnel with the capacity to employ evidence-based interventions correctly. These systems of support include: team-based leadership, data-based decision-making, continuous monitoring of student behavior, regular universal screening of student behavior, and useful, continuous professional development (Ohio PBIS Network, 2013). The leadership team must be constructed, with agreement among stakeholders coming prior to implementation of PBIS. The leadership team coordinates the implementation, collects and disseminates progress data, and monitors the action plan (Ohio PBIS Network, 2013).

In actual practice, PBIS as an intervention includes several best teaching approaches in the proactive set up of the classroom and in terms of responses to student

behavior. These best practice techniques form the major part of the PBIS intervention used in this study. For example, the foundations of PBIS include effective physical design of the classroom, development and implementation of predictable classroom routines, and use of positively stated classroom rules. In PBIS classrooms, students are provided with ample opportunities to participate, are provided with prompts and active supervision of their learning and are provided with specific praise and other tangible reward structures to promote compliance and positive behavior. Teachers then use classroom behavioral data to regularly monitor student progress, adjusting supports as needed and requesting additional assistance for students evidencing more intensive behavioral needs (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008).

The PBIS framework was implemented school-wide at the target school during the Spring 2017 semester. PBIS lessons, behavior matrixes, positive behavior reward point charts, and incentives and rewards were displayed and reinforced throughout the school year. Discipline data for students in the 6th and 7th grade from Fall 2016 semester (preimplementation) and discipline data for students in the 7th and 8th grade Fall 2017 semester discipline data (postimplementation) will be compared in the study.

PBIS and its Implementation

The PBIS framework was implemented during the Spring 2017 semester. The PBIS team members received extensive training by certified PBIS trainers and developed the PBIS components (lessons, behavior matrixes, positive behavior reward points, incentives, and the PBIS Rewards Program). The PBIS team members facilitated faculty/staff training on the PBIS components during professional learning sessions. The

faculty/staff then introduced to the PBIS framework components and taught the PBIS lessons to the students. Student who have earned the designated number of PBIS Rewards points during the week will be eligible to attend Panther Prowl and students who have earned the designated number of PBIS Reward Points during the month will be eligible to attend the PBIS monthly assembly. Homeroom teachers will register eligible students for the weekly and monthly events. The PBIS Reward points will be redeemed after the student attends the event. This professional development also included teams' self-assessment regarding fidelity of implementation of the PBIS framework. These questions included the following:(a) Are a majority of students benefiting from PBIS implementation? (b) Does the leadership team provide continuous implementation support and supportive guidance to school staff? (c) Are fidelity and outcome data reviewed on a monthly basis? (Ohio PBIS Network, 2013). School personnel had the opportunity to review and respond to these and other questions during ongoing professional development.

Instrumentation

The SWIS Suite was the instrument used to collect data for this study. SWIS Suites is a web-based information system of the component of PBIS Apps. SWIS Suite summarizes, collects, and utilizes student behavior data to inform decisions regarding student behavior. Office Discipline referrals data was inputted into the SWIS Suite and disaggregated discipline data reports were generated. School administrators used the discipline data reports to identify patterns, such as the presence of repeat student offenders, the time of day, the location, etc. to inform decisions regarding student

discipline, adjustments to duty locations of school personnel, and how to increase positive behavior.

Archival Data

The independent or treatment variable in this study was the PBIS program, which was implemented during the Spring semester 2017. The dependent, or outcome variables in this study are the number of office disciplinary referrals, the number of incidents resulting in OSS, and the number of days of OSS (OSS) assigned for each incident. These DVs were compared from Fall 2016 preimplementation with Fall 2017 post implementation data.

Operationalization of Constructs

There were three dependent variables: Number of discipline referrals was defined as the number of discipline referrals generated as a result of a discipline violation. The number of incidents that resulted in OSS observed for each student was the second DV while the third DV included the total number of days of OSS assigned to individual students.

Data Analysis

The SPSS statistical analysis software package was used to analyze the data for this study. SPSS was selected due to its capability to permit users to perform data entry and analysis and to create tables and graphs. SPSS also handles large data sets and can perform all of the analyses of interest in the present study, including descriptive calculations (means, *SDs*) as well as inferential statistics (e.g., *t* tests).

Inferential Statistical Test Used to Test Hypotheses

To test the hypotheses pertaining to the mean number of disciplinary referrals, incidents resulting in OSS, and days of OSS reported for each student in the sample prior to and after PBIS implementation, a paired-samples *t* test was conducted. This statistical analysis is appropriate to evaluate the data as each participant in the sample will have two sets of related scores on the three key DVs of interest: the number of office disciplinary referrals, number of students OSS assigned, and the total number of days of OSS. A comparison of these DVs means for 6th–8th grade students prior to and following the PBIS implementation was conducted. The *t* tests were administered to evaluate the implementation of the PBIS program at the .05 level ($p < .05$).

Justification for Use of Paired-samples *t* Test

The repeated measures *t* test is the appropriate statistic to use when determining if the means obtained from two sets of interval- or ratio-level observations conducted on a single sample before and after an intervention differ significantly (Kirkwood & Stern, 2003). Because all three research questions involve comparisons of ratio-level data for points obtained prior to and after the PBIS implementation, this is the appropriate test for the hypotheses generated by those three research questions.

Threats to Validity

Internal validity refers to the extent to which an experimental treatment makes a difference, and whether there is adequate evidence supporting the claims (Cook & Campbell, 1979). Several threats to internal validity exist that may affect the results of the present study. Maturation is always an issue when studies involve children who are still in the developmental period. Maturation refers to the processes within subjects that

occur with the passage of time. For example, because this study covers two semesters, some participants may improve their performance unrelated to the treatment.

Instrumentation refers to any changes in observers, or scorers which may produce changes in outcomes. If there are changes to instructional personnel, then results could be affected by differences within observers. Finally, the John Henry effect may also be a concern. John Henry was a worker who outperformed a machine because he was aware he was being compared to one. Students who are aware that their behavior is being evaluated as a result of receiving the PBIS intervention may alter their behavior as a function of this knowledge and not because of the power of the intervention. In addition, it is challenging to control for the effect of any prior teacher and classroom level interventions geared toward addressing academic or behavioral concerns that were part of naturally occurring instruction. With respect to external validity, the results of the study may not be generalizable to settings other than the target school since a true experimental design is not being employed.

Ethical Procedures

I was previously the principal of the target school; however, I am currently the transportation director for the local school district. The data collected as part of the normal operations in the school and I did not have any direct influence over the manner the data was entered at that time. The downloaded discipline data was saved to a jump drive in masked deidentified format. The purpose, expectations, and procedures of the study was reviewed by the faculty and staff members of the study site in order to increase their buy-in and ensure the purpose of the team approach to PBIS implementation. All

paperwork required to receive approval from the local school district and the Institutional Review Board (IRB Approval Number 12-05-18-0082952) to conduct the study prior to initiating any research will be obtained. All data will be electronically stored on a jump drive after the analysis is completed and secured for 5 years after approval of my doctoral study is granted, after which data will be destroyed.

Summary

In this chapter, the methods for conducting the study were described. The setting, participants, variables, data collection procedures, data analytic plan, and threats to validity have all been discussed in detail. It is hoped that through consistent and thoroughly implemented sound methods, in particular, use of the ex post facto design, all research questions regarding the effect of PBIS can be adequately addressed and the results will add to the current knowledge base on effective interventions for addressing behavior in diverse schools. In Chapter 4, the results based on the statistical tests conducted will be presented by each research question, with applicable graphical displays.

Chapter 4: Results

The purpose of this quantitative, ex post facto study was to determine the effect of the PBIS program on student discipline, specifically, on the number of student office discipline referrals, the number of students to whom OSS was assigned, and the total number of days OSS assigned before and after PBIS implementation.

This chapter presents the descriptive statistics for the DVs examined in the study as well as the inferential statistics that were used to test the study's hypotheses, as generated by the following three research questions:

Research Question 1: What is the difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8?

H_01 : There is no statistically significant difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

H_A1 : There is a statistically significant difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

Research Question 2: What is the difference in the number of students assigned to OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8?

H_02 : There is no statistically significant difference in the number of students assigned to OSS between preimplementation of the PBIS

program and postimplementation of the PBIS program for students in Grade 6–8.

H_{A2}: There is a statistically significant difference in the number of students assigned OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

Research Question 3: What is the difference in the total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8?

H₀₃: There is no statistically significant difference in total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

H_{A3}: There is a statistically significant difference in the total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8.

Descriptive Statistics

Data were examined only from those students for whom there were disciplinary referrals (DR) and OSS totals available for both 2016 and 2017. Data from students enrolled during only one of those years were excluded from the analyses. This resulted in an *n* of 88 6th–7th grade students for DR and OSS, and an *n* of 92 7th–8th grade students for incidents resulting in OSS.

The descriptive statistics examined include the means, standard deviations, medians, modes, ranges, and skew values of the number of disciplinary referrals, the

number of incidents that resulted in OSS and the total number of days of OSS recorded for each 6th–7th grade student with at least one disciplinary referral in 2016.

Additionally, the DR and OSS number recorded for each of these students in 2017 following the implementation of the PBIS intervention is also described.

Table 1

Descriptive Statistics of Dependent Variables Pre- and Post-PBIS Implementation

Dependent Variables	<i>M</i>	<i>SD</i>	Median	Mode	Range	Skew
Number of disciplinary referrals pre-PBIS	4.55	4.01	3.50	1.00	1–19	1.89
Number of disciplinary referrals post-PBIS	2.99	2.42	2.00	1.00	1–12	1.70
Number of incidents resulting in OSS pre-PBIS	1.57	1.33	1.00	0.00	0–5	0.48
Number of incidents resulting in OSS post-PBIS	1.13	1.01	1.00	1.00	0–4	0.85
Days of OSS assigned pre-PBIS	2.78	2.65	2.00	0.00	0–11	0.98
Days of OSS assigned post-PBIS	3.15	3.49	2.00	0.00	0–17	1.96

Individual Pre- and Post-PBIS Dependent Variables

Preimplementation disciplinary referrals. For disciplinary referrals prior to PBIS implementation, students in the sample had a mean of 4.55, half had three or fewer, and the most common number was one; 25% had that amount. After implementation, the mean number of disciplinary referrals dropped to 2.99, half had two or fewer, and the most common number again was one; 33% had that amount.

Preimplementation incidents resulting in OSSs. Prior to the implementation of PBIS, the sample had a mean of 1.57 incidents of OSS, and the modal number was zero; 27% had no incidents resulting in OSS. Following implementation, the mean dropped to 1.13, but the mode increased to one; 40% had one incident that resulted in OSS. The divergence in these two measures of central tendency stemmed from post-PBIS decreases in higher incident totals. Students with two or more incidents resulting in OSS decreased from 48% of the pre-PBIS sample to 30% of the post-PBIS sample.

Preimplementation OSSs. The mean number of days of OSS assigned Pre-PBIS was 2.78, half had two or fewer days, and the most common number of days assigned was zero; 24% had no days of OSS. Following PBIS implementation, the mean number of days of OSS increased to 3.15, although half continued to have two or fewer days, and the most common number was again zero; 21% had that number post-PBIS.

Postimplementation disciplinary referrals. A mean of 1.56 fewer disciplinary referrals post-PBIS was obtained for the sample. Half had decreases of two or more disciplinary referrals, although increases as large as nine did occur. The most common difference score was zero; 19% of the sample did not have a pre-to-post change in disciplinary referrals.

Postimplementation incidents resulting in OSSs. Students in the sample had a mean of 0.44 fewer incidents resulting in OSS post-PBIS. Although the modal change value was zero, 42% decreased the number of OSS incidents by one or more, and decreases by as much as 4 occurred.

Postimplementation OSSs. Unlike the result for disciplinary referrals, the mean number of days of OSS increased by 0.36 following PBIS implementation. The median value of zero obtained for this variable indicates that the proportion with increases was nearly equal to those with decreases. The actual distribution of OSS change score direction was as follows: 43% had an increase, 17% remained the same, and 40% decreased their days of OSS. The zero score obtained for those without a change was the most common outcome for this variable. Because it was not possible for the 24% of the sample who had no OSS prior to implementation to decrease their score on this variable, a modal change value of zero is to be expected.

Inferential Statistics

The inferential statistic used for all three research questions was the repeated measures *t* test. This test was used to assess the statistical significance of the difference in disciplinary referrals, incidents resulting in OSS and number of days of OSS observed for each student prior to (2016) and after (2017) PBIS intervention.

Assumptions Underlying the Repeated Measures *t* Test

According to McDonald (2014) the repeated measures *t* test assumes that the distribution of the differences obtained from the two dependent variable measurements must be normally distributed. When applied to the present study, this means that the distribution of difference between the pre- and post-PBIS score on each DV obtained across the sample must be normally distributed. Normal distributions are symmetrical with the greatest frequency at the mid-point (Gravetter & Walnau, 2009). As such the distribution's mean, median, and mode should be equal, and there should be no skew.

Although, as Table 1 indicates, this is not the case for either the paired pre/post-PBIS difference in disciplinary referrals ($M = 1.56$; $Mdn = 1.00$; $Mode = 0.00$; $Skew = 1.02$), incidents resulting in OSS ($M = 0.44$; $Mdn = 0.00$; $Mode = 0.00$; $Skew = -0.01$), or OSS Days ($M = -0.36$; $Mdn = 0.00$; $Mode = 0.00$; $Skew = 1.27$), the t test is not very sensitive to violations of this assumption (McDonald, 2014) particularly when the sample size is greater than 30 (Gravetter & Walnau, 2009). Pandis (2015) discourages the use of statistical tests of normality such as the Shapiro-Wilk because they frequently foster erroneous conclusions. Instead, he recommends examining the distribution's frequency histogram because distributions that are relatively close to the shape of a normal distribution permit the use of the paired-samples t test. Illustrated in Figures 1-3 are frequency histograms of the paired difference distributions for disciplinary referrals, incidents resulting in OSS, and days of OSS. As the superimposed normal curves indicate, the pattern of all three distributions closely approximates normality. Therefore, the repeated measures t test is justified for examining pre- and post-PBIS changes in all three dependent variables.

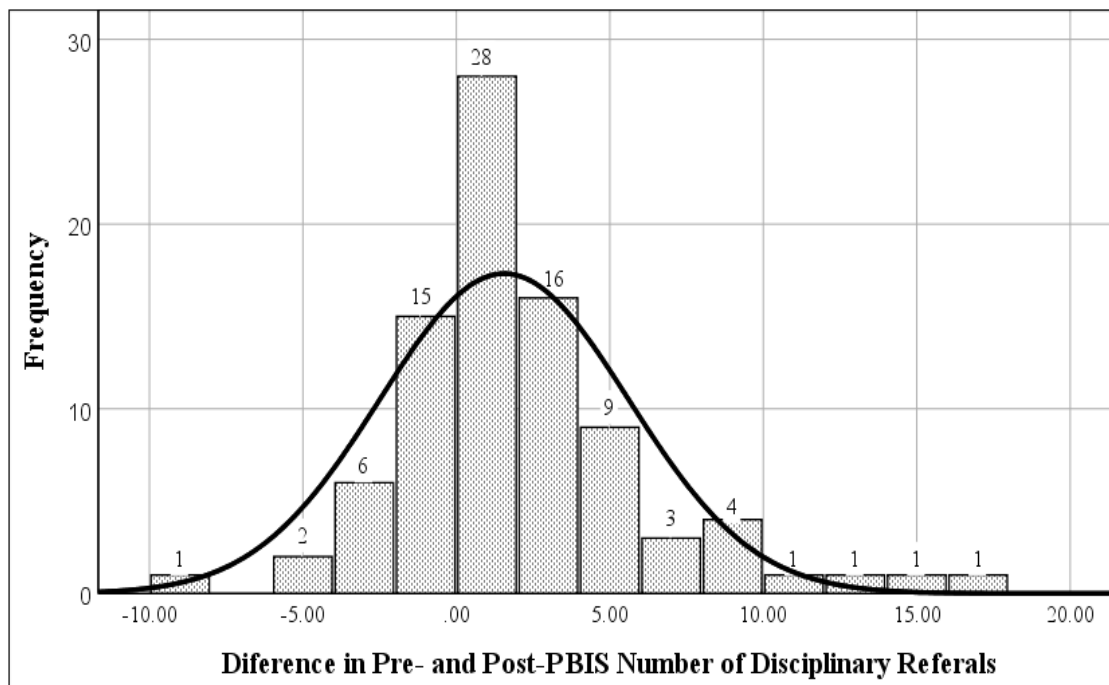


Figure 1. Frequency distribution with normal curve for pre-PBIS minus post-PBIS difference in disciplinary referrals. The chart illustrates the frequency distribution of the result of subtracting each participant's post-PBIS number of disciplinary referrals from the participant's pre-PBIS number of referrals. An X-axis value of -10.00 indicates that the participant had ten more disciplinary referrals post-PBIS than prior to the intervention; an X-axis value of 15.00 indicates that the participant had 15 more referrals pre-PBIS than post-PBIS.

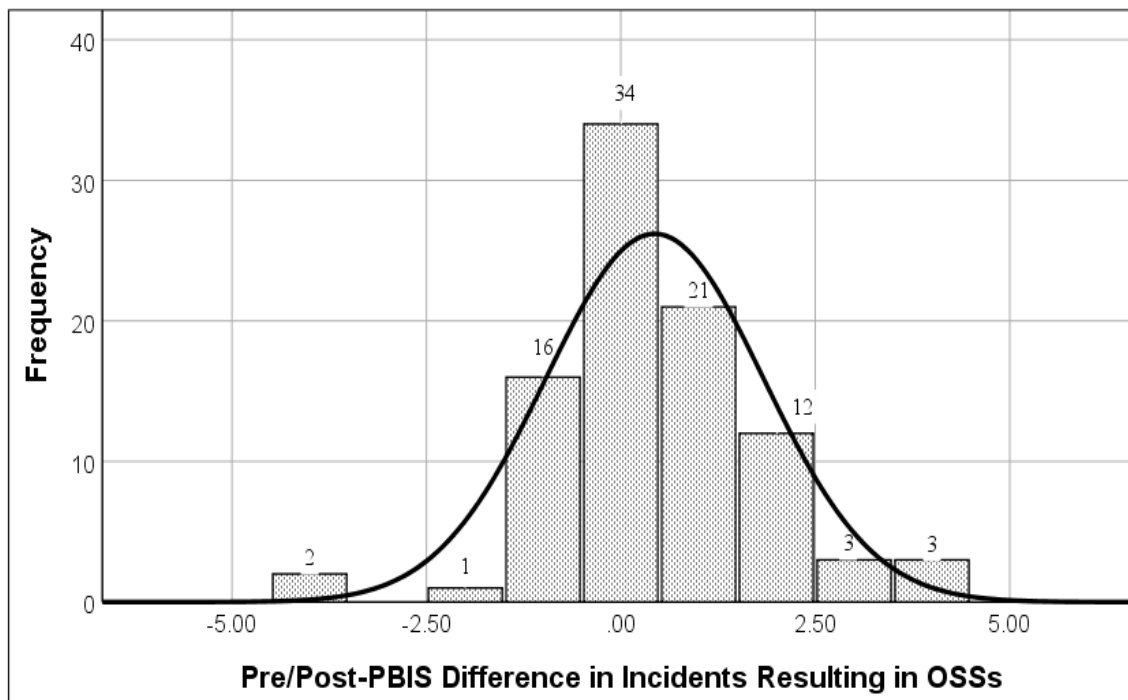


Figure 2. Frequency distribution with normal curve for pre-PBIS minus post-PBIS difference in the number of incidents resulting in OSS. The chart illustrates the frequency distribution of the result of subtracting each participant's post-PBIS number of incidents resulting in OSS from the participant's pre-PBIS number of OSS incidents. An X-axis value of -5.00 indicates that the participant had five more incidents resulting in OSS post-PBIS than prior to the intervention; an X-axis value of 5.00 indicates that the participant had five more incidents resulting in OSS pre-PBIS than post-PBIS.

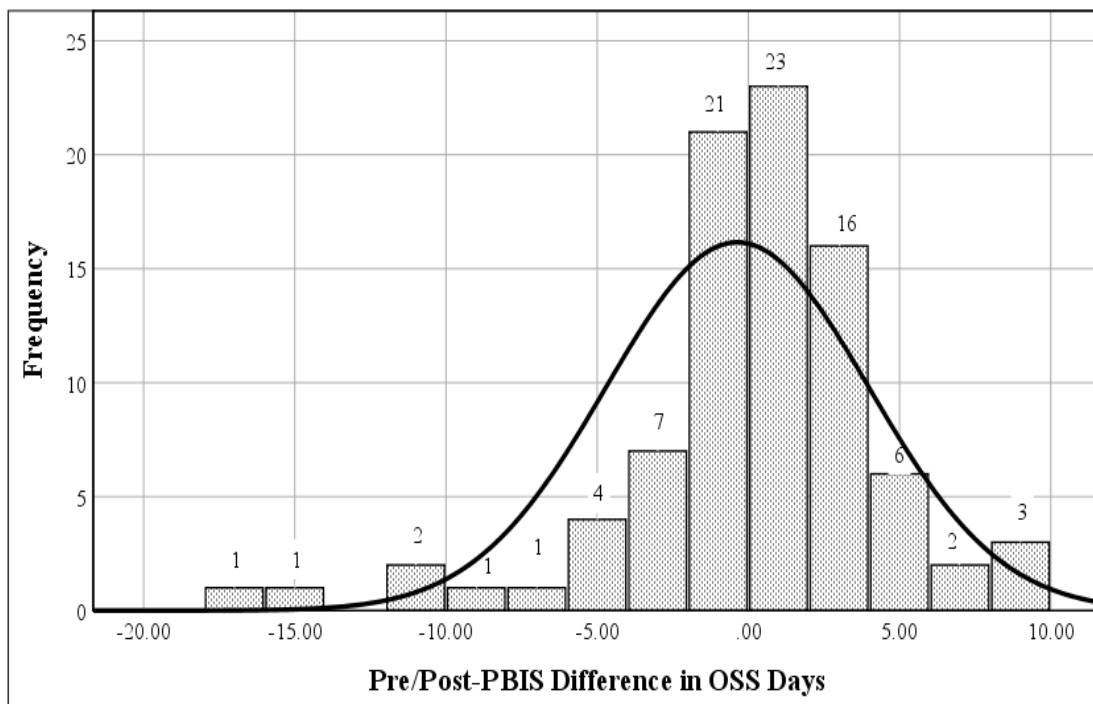


Figure 3. Frequency distribution with normal curve for pre-PBIS minus post-PBIS difference in OSS days. The chart illustrates the frequency distribution of the result of subtracting each participant's post-PBIS number of days of OSS from the participant's number of pre-PBIS days of OSS. An X-axis value of -15.00 indicates that the participant had 15 more OSS days post-PBIS than prior to the intervention; an X-axis value of 10.00 indicates that the participant had ten more referrals pre-PBIS than post-PBIS.

Research Question 1 Findings

The pre-PBIS number of disciplinary referrals ($M = 4.55, SD = 4.01$) was significantly greater than the post-PBIS number ($M = 2.99, SD = 2.42$), $t = 3.60, p$ (two-tailed) = .001. Thus, the findings indicate that H_01 : There is no statistically significant difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6-8, can be rejected. The finding provides evidence that the PBIS intervention resulted in a decrease in disciplinary referrals among the students examined in the present study.

Research Question 2 Findings

The pre-PBIS number of incidents resulting in OSS ($M = 1.57, SD = 1.33$) was significantly greater than the post-PBIS number ($M = 1.13, SD = 1.01$), $t = 2.98, p = .004$. This finding indicates that H_02 : There is no statistically significant difference in the number of students assigned to OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6-8, can be rejected. Consistent with the finding for disciplinary referrals, this finding indicates that the PBIS intervention results in a decrease in the number of incidents that result in OSS.

Research Question 3 Findings

The number of total days of OSS pre-PBIS are ($M = 2.78, SD = 2.64$) did not significantly differ from the number assigned post-PBIS ($M = 3.15, SD = 4.49$), $t = -0.79, p = .435$. This finding indicates failure to reject the null hypothesis: There is no statistically significant difference in total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program

for students in Grade 6-8. Unlike the findings obtained for disciplinary referrals and the number of incidents resulting in OSS, the total days of OSS for students in the sample increased slightly following PBIS implementation. This increase, however, did not approach statistical significance. As a result, the findings provide no evidence of any positive or negative effect of the PBIS intervention on the total number of days of OSS.

Summary

The findings indicate that PBIS implementation was associated with fewer disciplinary referrals and incidents resulting in OSS. Following implementation, the mean number of disciplinary referrals dropped by 35% from a mean of 4.55 to a mean of 2.99, and the mean number of incidents resulting in OSS decreased by 28% from 1.57 to 1.13. However, a significant pre-PBIS to post-PBIS change in the number of days of OSS assigned was not obtained. This may be attributable to the high frequency of students who were assigned no OSS prior to PBIS implementation (24%). Because nearly one-fourth of the sample could not reduce their total number of days of OSS, the capacity of PBIS implementation to have a meaningful influence on OSS was greatly limited. Another possible reason H_03 could not be rejected is that the OSS days were assigned by the administrator. Infractions that are more severe require a certain number of OSS days be assigned, whereas consequences for less severe infractions are left up to the discretion of the administration.

Means for addressing these two limitations will be explored in greater detail in Chapter 5. In addition, chapter 5 will explore the results in greater details, relate these to

prior literature, and makes connections among the findings to the current knowledge base on PBIS efficacy.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this ex-post facto, quantitative, quasi-experimental study was to determine the effect that a PBIS program had on student discipline, including both discipline referrals in general and OSS, in a diverse middle school in the southeastern United States. The primary objective of this investigation was to evaluate whether positive reinforcement (i.e., PBIS) can be effective in reducing students' undesirable behavior at the target school, thereby reducing the need for exclusionary discipline, such as OSS.

Multiple measures of discipline provided key information to determine the exact nature of the effect of PBIS on the referrals and suspensions. The current study was important because students had high rates of discipline referrals and OSS. In order to address this problem, PBIS was implemented. Results of this study are informative not only for stakeholders, such as parents, teachers, administrators and students at the intervention school, but also for school leaders across the district as they contend with the challenges of addressing student discipline.

Although PBIS was fully implemented, the effect of this intervention had not been formally evaluated for efficacy. As such, it was critical to determine whether implementation of PBIS resulted in a decrease in the total number of discipline referrals during the current school year compared with discipline referrals during the previous school year. Additionally, securing specific evaluation data on behavior resulted in increased understanding of the value of the PBIS program for decreasing the numbers of discipline referrals and OSS at the focus school, which resulted in a good use of resources

and a reduction in high rates of discipline referrals and OSS. The results will be shared with local stakeholders, as well as the larger school district, to bring an awareness of how to address student discipline and to become more intentional and positive in the approach taken to improve individual student discipline and overall school climate.

The outcomes from this study were useful in explaining and informing the problem. As the need for constructive approaches to discipline increases and school leaders are held more accountable for creating a positive climate that promotes learning for all students, the role of positive disciplinary strategies that can be scaled school-wide are more important than ever (Sugai & Horner, 2002). In order to address the need for improved disciplinary approaches to address student behavior at the target school, the following three research questions were posed in this study: (a) What is the difference in the frequency of discipline referrals between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8? (b) What is the difference in the number of students assigned to OSS between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8? and (c) What is the difference in the total number of days OSS was assigned between preimplementation of the PBIS program and postimplementation of the PBIS program for students in Grade 6–8? The analysis of data collected for each of these questions helped determine the extent to which PBIS implementation was effective in addressing disciplinary issues.

According to the overall findings, PBIS implementation had a positive and meaningful influence on student discipline, specifically, it resulted in fewer disciplinary

referrals and incidents that resulted in OSS. Following the intervention, the mean number of disciplinary referrals dropped by 35%, from a mean of 4.55 to a mean of 2.99; the mean number of incidents resulting in OSS decreased by 28%, from 1.57 to 1.13. However, the results did not demonstrate that PBIS implementation had a significant effect on the number of days of OSS assigned. Interpretation of findings, limitations of the study, recommendations, and conclusions follow.

Interpretation of Findings

A key finding that resulted from an analysis of these data was that the PBIS intervention had a positive and meaningful influence on student discipline in the target school, as evidenced by fewer disciplinary referrals and incidents resulting in OSS. This finding aligns strongly with much of the prior research on PBIS (Childs, Kincaid, George, & Gage, 2016; Flannery et al., 2014; Freeman, et al., 2016), and provides additional evidence that this strategy improves a variety of student outcomes, in particular, those related to discipline, a primary concern of teachers and administrators (USDE, OCR, 2016).

For two of three domains addressed in the research questions, significant findings were obtained. Though the current study targeted the area of discipline referrals, incidents resulting in OSS, and total numbers of days assigned OSS, there is a need to engage in research that seeks to further investigate the types of specific behaviors that warrant a discipline referral as well as the role of teacher interpretation of behavior as these factors may mitigate the influence of PBIS on discipline outcomes variables. For example, in this study, the findings did not show that PBIS implementation impacted the number of days

of OSS assigned, although discipline referrals and incidents of OSS were reduced. It is important to consider that the assignment of OSS days is under the control of school administrators. Moreover, in the state of Georgia, specific types of offenses require a certain number of days of OSS. Because the exact nature of the offenses is not known, it is possible that student disciplinary offenses following PBIS were ones that would constitute a required assignment of OSS days, thereby contributing to the lack of significant findings.

Overall, the results of this study align with related research indicating student discipline is a factor that affects the larger school climate, more studies are needed to expand on solutions and best practices. There continues to be concern with student discipline in schools on the whole. However, the concern is not about addressing student discipline, but rather how to address it (Skiba, 2014). There is a need to continue examining how to scale-up best practices used by many schools and how to secure teacher buy-in for PBIS classroom management strategies such as positive reinforcement (Swain-Bradway et al., 2015).

Limitations of the Study

As with all research, there are limitations to the present study that merit consideration. While the overall findings suggested that PBIS implementation resulted in a positive influence on student discipline (i.e., PBIS resulted in fewer disciplinary referrals and Incidents resulting in OSS), the results failed to demonstrate that PBIS implementation significantly impacted a reduction in the number of days of OSS assigned. There are several potential explanations for this finding, practical and

statistical. These will be discussed below. Additionally, other important limitations of the study will be explored.

Statistically speaking, one possible explanation for this finding may be attributable to the high number of students who were not assigned OSS prior to PBIS implementation (24%). That is, nearly one-fourth of the sample participants were not able to actually reduce their total number of days of OSS, thereby limiting the capacity of PBIS implementation to meaningfully influence OSS.

From a more practical standpoint, another plausible reason for the lack of significant findings related to OSS is the maturation of the sample students. Maturation refers to the processes within subjects that takes place over time. The sample students were one grade higher and one-year older post-PBIS than they were pre-PBIS. As a result, it is possible that the infractions resulting in OSS for older students are more serious than those engaged in by younger students. This difference in seriousness of offense could account for why a significant reduction in the number of incidents leading to OSS did not result in a reduction in the number of days of OSS. In addition, as previously described, the role of administrator perception regarding the nature of disciplinary infractions also likely played a role in the number of days of OSS assigned. It is also possible that certain infractions automatically resulted in a specific number of days of OSS assigned, as mandated by state and/or district disciplinary requirements, which would make being able to ascertain the actual influence of PBIS difficult.

Finally, the John Henry effect may have contributed to limited findings related to OSS in the study. John Henry was an employee who, after becoming aware that he was

being compared to machine, outperformed the machine. Students who were aware that their behavior was being evaluated as a result of receiving the PBIS intervention may have altered their behavior as a function of this knowledge and not because of the power of the intervention.

In this study, student disciplinary infractions were not disaggregated by disability status, which also constitutes a limitation. That is, discipline patterns for students with disabilities may have differed from those without identified disabilities, and these differences could have influenced the results. Some disabilities, such as emotional and behavioral disorders, exert an influence on students' behavior, making this variable an important one to account for. In this study, fidelity of implementation of the PBIS intervention on the part of the teachers and administrators was not measured. Although professional development was a large part of intervention development and implementation, tracking of how extensively and accurately the intervention was implemented was not a part of the study. Another limitation is the fact that it was not possible to control for the effect of any prior teacher and classroom level interventions geared toward addressing academic or behavioral concerns that were part of naturally occurring instruction. These competing variables may have influenced the results and may have made it difficult to directly attribute the positive changes observed to be entirely attributable to PBIS. Furthermore, regarding external validity, the results of the study were not truly generalizable to settings other than the target school since a true experimental design was not employed. Nonetheless, the findings may be useful and

applicable to school professionals and leaders in similar settings with students presenting with matched demographic profiles.

Recommendations

Based on the limitations described, there are recommendations that can be made to inform future research. Future researchers should examine the role of factors such as student disability status on disciplinary infractions. Because the presence of disability can influence student behavior, it is important to account for how this factor may result in differential influence of PBIS implementation. Gaining insights into how PBIS impacts students with disabilities would expand our understanding of this approach across subgroups of students.

Future research should also include specific tools to measure fidelity of implementation among teachers and administrators so that the extent and accuracy of PBIS implementation is clearly described. Furthermore, data from the PBIS professional development activities would provide details regarding how school staff responded to the training and identify areas where more emphasis in preparation is needed. Additionally, future research should include a focus on collecting teacher and administrator level data to determine school personnel's prior training on disciplinary interventions geared toward addressing academic or behavioral issues. Such prior preparation could influence the results of formal, school-wide PBIS interventions.

The results of this study indicated consistently positive effects of PBIS on the number of discipline referrals and numbers of incidents leading to OSS. While these outcomes are positive, examination of differential disciplinary approaches along

ethnicity, which this study did not specifically address, needs to be examined further, and should be part of future research endeavors. Despite the fact that 5.3% of all students nationally were suspended out-of-school and 0.2% were expelled in 2014 (Hernandez, 2018), these same rates were two to three times higher among African-American students (Barrett et al., 2018). This discrepancy in responses to discipline issues in students has persisted and would benefit from further investigation, specifically to determine if PBIS leads to a more equitable approach to discipline among school personnel. Although this concern was not specifically addressed in the present investigation, the intervention from this study was implemented in a diverse setting serving a large number of African American students with a history of high rates of disciplinary issues. Therefore, the positive results gleaned from the current study point to the need for future investigations to more closely examine teachers' responses to behavior among students of color.

Finally, although PBIS strategies suggested in this study can be used for individual students, it is important to note that more intensive support will likely be needed from a behavior specialist or school psychologist for teachers who work with students with more intensive support needs. Future research should investigate how PBIS can be implemented in tandem with the more individualized approaches reserved for students who evidence the most concerning behavioral issues. A study which explores proactive strategies that can be used to manage student behavior before it results in a discipline referral being is also recommended. Relatedly, additional research on the influence that providing professional development to educators who teach students with emotional disorders in the regular classroom setting has on the discipline referral patterns

is also recommended. A final recommendation is for further studies to be conducted which examine the perception of faculty and administrators related to the issue of the fidelity of implementation of PBIS.

Implications

The results of this study have several implications for researchers, teachers, school leaders, and policy makers. Though the PBIS system mandates specific action plans or programs that should be implemented to manage student behavior, the results of this study demonstrate that PBIS can serve as a guide for the types of behavior supports that should be put into place to achieve positive student behavior (National Technical Assistance Center on PBIS, 2016b). Implications for Social Change are clearly grounded in the significance section of Chapter 1 and the outcomes presented in Chapter 4. The implications are expressed in terms of tangible improvements to individuals, communities, organizations, institutions, cultures, and societies. This study also shows the value of the PBIS system and its use of data to make appropriate decisions about implemented supports and stresses the importance of monitoring programs to ensure fidelity of implementation and continued success (Sugai & Horner, 2002). In this study, behavior supports were put into place using the PIBS system, which resulted in school personnel supporting positive student behaviors that encouraged student engagement and reduced problem behaviors that hinder student learning (NTACPBIS, 2016b). Though not measured as part of this study, improvement in student behavior may have an effect on student reading proficiency, grades, attendance, and discipline referrals (Sugai & Horner,

2002). A related implication is that future research should address the specific ways PBIS can influence factors beyond discipline.

A further implication of this study is that the manner in which schools implement PBIS may vary across settings depending on the needs of students and teachers. Because the supports chosen by each school will vary in type, structure, and implementation, it is important that each school determine whether its chosen supports are effective in bringing about desired outcomes (Sugai & Horner, 2002). It is also critical that researchers conducting studies of PBIS describe in detail their specific PBIS features and manner of implementation as well as data collection procedures. Overall, it is important to continuously monitor in an ongoing manner whether PBIS is effective in bringing about desired outcomes in order to avoid wasted resources and the perpetuation of poor student attendance and behaviors that result in discipline referrals and OSS. Without continued examination of the use of OSS, students may continue to be at risk for both immediate and long-term negative outcomes associated with separation of students from the academic setting (USDE, OCR, 2016).

Conclusion

PBIS strategies are intended to reduce the number of student suspensions and expulsions (U.S. Department of Justice & U.S. Department of Education, 2014), and instead include a focus on teaching, recognizing, and reinforcing positive behaviors in students. Research has suggested that being suspended or expelled is associated with negative academic and behavioral outcomes; there is also a related and growing concern that these policies are much more common among racial minorities, low-income, and

special education students reinforces these concerns (Losen et al., 2014; Loveless, 2017). Such concerning trends in discipline have resulted in the development of PBIS approaches (Mitchell et al., 2018, p. 1). PBIS programs include broad-based school-level activities and targeting services to specific groups of students (Mitchell et al., 2018).

Encouragingly, more than 25,000 schools nationally, or about 25% of all schools, implement some version of PBIS (Sugai, 2018). The current study confirms that schools and districts that have elected to adopt PBIS as an approach to addressing disciplinary issues have a good likelihood of securing positive results, including a reduction in disciplinary referrals and the use of out of school suspension, which only remove students from needed instruction. Instead, PBIS enables access to enriching class activities all students deserve.

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