Positive Behavioral Interventions and Supports (PBIS): Does Stronger Implementation Relate to More Equitable Student Outcomes In School Discipline?

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POSITIVE BEHAVIORAL INTERVENTIONS AND SUPPORTS (PBIS): DOES STRONGER IMPLEMENTATION RELATE TO MORE EQUITABLE STUDENT OUTCOMES IN SCHOOL DISCIPLINE?

by

Stephenie C. Bruce

A dissertation submitted to the Graduate College in partial fulfillment of the requirements for the degree of Doctor of Philosophy Educational Leadership, Research, and Technology Western Michigan University December 2021

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For this study, I explored the degree of implementation of the Positive Behavioral Interventions and Supports (PBIS) framework and the existence of disproportionality of formal school disciplinary responses to behavioral occurrences by race/ethnicity, sex, special education status (SPED), and socioeconomic status (SES) of students. Further, I investigated the relationship between a school’s degree of implementation of PBIS and the existence of disproportionality by race/ethnicity, sex, SPED, and SES, and investigated the differences in the existence of disproportionality in schools that fully implemented PBIS and schools that did not fully implement PBIS.

Literature exists on PBIS implementation and, separately, on the existence of disproportionality in school discipline; but this is the first study of their intersection. Generally, the existing literature on PBIS implementation shows full implementation is associated with a decrease in the overall number of behavior occurrences. In addition, the literature on the disproportionality of discipline suggests certain student groups are overrepresented in school discipline, specifically non-White, male, SPED, and low SES students.
Implementation was measured using the School-Wide Evaluation Tool (SET). Disproportionality was calculated using the enrollment and discipline data entered into the Student Information System (SIS) for each school. This study included 16 schools from one Midwest state, with 7,124 enrolled students in kindergarten through twelfth grades. The approximate percentages of enrollment for the listed demographic groups: non-White 42%, male 52%, SPED 14%, low SES 62%.

There are four main findings in this study. First, nine of the 16 participating schools fully implemented PBIS, which means seven did not. The second finding is that non-White, male, SPED, and low SES students were overrepresented in reported behavior occurrences. The third finding is there was no correlation between the implementation of PBIS and a lesser existence of disproportionality in school discipline by race/ethnicity, SPED, and SES, and a positive, moderate correlation when broken down by sex. The final finding showed no significant difference in disproportionality in reported behavior occurrences in schools that fully implemented PBIS and those that did not fully implement PBIS.

This study confirms existing literature on the overrepresentation of certain student groups in reported behavior occurrences, including non-White, male, SPED, and low SES students (Bowditch, 1993; Boneshefski & Runge, 2014; Caldwell et al., 2020; Garibaldi, 1979; Gregory et al., 2010; Hamilton, 2019; Kaufman et al., 2010; Lacoe & Manley, 2019; Maag, 2012; Mizel et al., 2016; Montgomery, 2012; Okonofua et al., 2016; Predy et al., 2014; Roch & Edwards, 2017). This study also confirms that PBIS implementation tends to be stronger in elementary settings (Akos et al., 2015; Bailey et al., 2015; Boneshefski & Runge, 2014; Bradshaw et al., 2010; Burke et al., 2012; Cresseey et al., 2014; Grimaldi & Robertson, 2011; Lacoe & Manley, 2019; Smolkowski & Strycker, 2014). The ultimate goal of PBIS implementation is to meet the
behavior support needs of all students; however, I found that certain student groups continued to be overrepresented in school discipline data, even with full implementation of PBIS.
DEDICATION

I dedicate this work to the three most important individuals in my life: my husband, Adam; our son, James; and our daughter, Lilly. The three of you have taught me the real meaning of family and foundation. You have taught me how to best love myself and the people around me, and you have provided me the highest opportunity to believe in myself.
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Thank you to my amazing family for being the perfectly imperfect circle of people to rally around me. I am so fortunate to say that there are so many of you. I am who I am because you are who you are.

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Finally, a very special thank you to the many of students I have had the pleasure of serving in my career so far. I learn the most from each of you, and the true mission of this work is because of all of you.

Stephenie C. Bruce
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CHAPTER 1
INTRODUCTION

One major goal of the United States’ school system is to aid in the cultivation of responsible citizens who are academically successful. In order to maximize academic achievement, schools also need to have a focus on teaching responsible behaviors; otherwise student behavior can have a negative impact on student achievement (Garibaldi, 1979; Hamilton, 2019; Nocera et al., 2014). Negative consequences of student behavior issues can include detentions, suspensions, damage to relationships, loss of instructional time, disconnect from school, and may eventually lead to law enforcement issues. School systems are consistently striving to find ways to decrease disruptive student behaviors and increase positive student behaviors. Disruptive student behaviors include any behaviors, real or perceived, that interrupt the learning environment or compromise the safety of the learning environment. Disruptive student behaviors are behaviors that do not meet the behavior expectations established by the school. Educators have tried, and continue to try, implementing various initiatives to shape student behaviors to be as responsible and positive as possible. This study focuses on one such initiative, Positive Behavioral Intervention and Supports (PBIS), its implementation in public schools that serve kindergarten through twelfth grades, and the extent to which this implementation is correlated with school discipline referrals for various demographic groupings.

Background

There are many risk factors that impact a student’s ability to be academically successful. These risk factors intensify as students transition from the elementary level of education to the secondary level of education (Akos et al., 2015; Bailey et al., 2015; Grimaldi & Robertson, 2011; Hamilton, 2019; Lacoe & Manley, 2019). Students are at risk of failure when they are not
successfully meeting expectations in school, including academic and behavioral expectations. The intensity of these risk factors can vary by demographic group (Bowditch, 1993; Hamilton, 2019; Kaufman et al., 2010; Mizel et al., 2016; Okonofua et al., 2016; Predy et al., 2014).

Some student demographic groups who tend to be more significantly impacted by risk factors are also disciplined at disproportionate rates when compared to their peers (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Kaufman et al., 2010; Mizel et al., 2016). Disproportionality in school discipline exists when groups of students are overrepresented in school discipline data. Research shows negative impacts for students who are repeatedly disciplined. This becomes an issue of equity when certain groups are disciplined more frequently than other groups.

Student behavior concerns have been a discussion among educators for many decades. Changes in education and society over the years have led to changes in student discipline issues and the approaches to student discipline. Previous studies have looked specifically at student discipline, attempting to understand what types of offenses were occurring, which groups of students were committing these offenses, and how students were being disciplined for these offenses (Garibaldi, 1979; Kaufman et al., 2010; Lacoe & Manley, 2019; Maag, 2012; Skiba et al., 2002). Discipline that is applied for behavior occurrences can impact students in a number of ways, and sometimes has lasting effects on students including barriers to academic success and success as a contributing citizen in society (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Garibaldi et al., 1996; Gregory et al., 2010; Hamilton, 2019; Mizel et al., 2016; Mullet, 2014; Okonofua et al., 2016).
A behavior occurrence is a single incident of a student displaying behavior that does not meet the behavior expectations set by the school. Traditionally, discipline applied for behavior occurrences has resulted in some sort of exclusionary consequence for students.

There are currently two main approaches to dealing with disruptive student behavior: a reactive approach and a proactive approach. A reactive approach is rooted in compliance and includes educators stepping in once a student behavior occurs that is against the rules established by the school. Consequences typically include students being excluded from activities and possibly the learning environment. This approach lacks teaching students about responsible strategies, and can have a detrimental impact on students, including repeating the behavior, academic failure in school that could lead to school dropout, and a host of social issues related to dropping out of high school (Anyon et al., 2014; Caldwell et al., 2020; Gregory et al., 2010; Johnson et al., 1992; Nese et al., 2020; Sugai & Horner, 2006).

A proactive approach is preventative and restorative. Specific universal and individual structures are put in place in order to prevent student behavior issues. When disruptive student behaviors occur, exclusionary measures are used as a last resort, and behavior issues are dealt with using a focus on strategies and teaching responsibility (Boneshefski & Runge, 2014; Caldwell et al., 2020; Mizel et al., 2016; Skiba et al., 2016). Restorative strategies are focused on reintegrating students to the space where the behavior occurred and re-establishing rapport with those involved, if necessary. Research shows that one key element to reshaping disruptive student behaviors into positive student behaviors is focusing on sustained positive reinforcements as opposed to negative consequences (Cartledge & Kourea, 2008; McIntosh et al., 2013; Pas & Bradshaw, 2012; Robert, 2020; Skiba et al., 2016).
Adolescents respond better to positive acknowledgments for displaying responsible behaviors, but this type of learning does not always correspond with the philosophical approaches of educators (Greenfield et al., 2010; Hamilton, 2019). Educators tend to focus on the negative behaviors that students display out of concern for preserving student safety and protecting the learning environment (Greenfield et al., 2010, Hamilton, 2019). Although safety is a top priority, current research suggests that the best way to promote a safe learning environment is by focusing on the natural, positive consequences associated with responsible behavior (Boneshefski & Runge, 2014; Cartledge & Kourea, 2008; Mizel et al., 2016; Pas & Bradshaw, 2012; Robert, 2020; Skiba et al., 2016).

Going beyond the philosophical approaches to dealing with student discipline, there are also practical measures that have an effect on student discipline and the results of student discipline. There are many legislative demands on schools that pertain to student behaviors. These legislative demands are ever-changing, and come with new obligations and criteria for schools to meet each time they change. Currently, Michigan legislation requires the implementation of Multi-Tiered Systems of Support (MTSS) to meet the academic and behavioral needs of all students (Michigan Department of Education, 2021). Within MTSS, it is a requirement to implement a proactive system of teaching responsible behaviors. One such initiative is Positive Behavioral Interventions and Supports (PBIS) (Michigan Department of Education, 2021).

PBIS is a United States Department of Education initiative being implemented in school systems across the country that attempts to increase positive student behaviors and decrease disruptive student behaviors by focusing on the consequences and acknowledgements associated with responsible behaviors (Hoyle et al., 2011; Robert, 2020). PBIS is a three-tiered approach to
teaching responsible behaviors for students in schools. This approach follows a research-validated framework for implementation. There are specific tools used to evaluate and monitor the effectiveness of PBIS implementation to assist educators with implementing PBIS with integrity. These tools include essential components for implementation integrity.

PBIS is being used at both the elementary and secondary levels of education. However, due to the dynamics and differences between elementary and secondary levels of education, implementation of PBIS is more challenging at the secondary level than at the elementary level, and also more challenging to implement in environments with heavier volumes of behavior occurrences (Bailey et al., 2015; Johnson & Smith, 2011; King et al., 2012; Lacoe & Manley, 2019; Montgomery, 2012; Myers et al., 2012; Nocera et al., 2014). Educators are aware of the need for a structured focus on positive behaviors but intervening and changing the approach to discipline after students have been in the education system for many years is difficult, especially when students at this level of education are already undergoing many changes and experiencing transitions.

Additionally, the issue of disproportionality in school discipline is troubling in education. Differences in disproportionality between demographic groups in school discipline show that certain groups of students are overrepresented in school discipline data, meaning that these groups of students are experiencing the negative impacts of school discipline more frequently. Students groups that are historically overrepresented in school discipline are: (a) African American students, (b) Native American students, (c) Hispanic students, (d) male students, (e) low socioeconomic students, and (f) students that qualify for special education services (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Garibaldi et al., 1996; Maag, 2012; Mizel et al., 2016; Montgomery, 2012). There is a need to
tend to the issue of student behavior in a way that improves the educational experience for all
students. In order to reach a place of improving conditions for all students, there must be
improvements in the persistent issue of disproportionality in school discipline.

Problem Statement

Disruptive student behavior can have an impact on the overall success of students
(Garibaldi, 1979; Garibaldi et al., 1996; Nese et al., 2020; Nocera et al., 2014). Issues with
student behavior intensify when students transition to the secondary level of education (Akos et
al., 2015; Bailey et al., 2015; Grimaldi & Robertson, 2011; Lacoe & Manley, 2019). Repeated
behavior occurrences for students can lead to decreased success for those students. Furthermore,
there exists the issue of disproportionality in school discipline, indicating that the needs of all
students are not being met which is impeding the success of certain groups of students more so
than their comparable peer groups. Implementing PBIS is one strategy that has shown efficacy
with maintaining safety in schools and decreasing the frequency of student behavior occurrences
(Boneshiefski & Runge, 2014; Bradshaw et al., 2012; Gregory et al., 2010; Hoyle et al., 2011;
Robert, 2020; Skiba et al., 2016; Sugai & Horner, 2006). While implementation of PBIS is
known to decrease the overall number of behavior occurrences in schools, the issue of
disproportionality persists.

There is an existing body of literature on the negative impacts of repeated behavior
occurrences for students, looking at how these behavior issues impede student success and
success as an adult (Garibaldi, 1979; Garibaldi et al., 1996; Nocera et al., 2014). There are also
many studies that look at the issue of demographic groups that are disproportionately disciplined,
and how this issue of disproportionality is related to disparities in the overall success of students
in different groups (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Garibaldi et al., 1996; Maag, 2012; Mizel et al., 2016; Montgomery, 2012; Nese et al., 2020).

Studies that look specifically at the implementation of PBIS focus on implementing with integrity (Chard, 2012; Greenfield et al., 2010; Skiba et al., 2016; Sugai & Horner, 2006), and also on how implementation impacts the overall number of behavior occurrences in those learning environments (Boneshefski & Runge, 2014; Bradshaw et al., 2012; Gregory et al., 2010; Hoyle et al., 2010; Skiba et al., 2016; Sugai & Horner, 2006). The existing body of literature on PBIS implementation shows improvement in school climate and student behavior occurrences for the general population of students, but does not show an abundance of evidence on narrowing in to look at student groups that are overrepresented in school discipline data. The body of literature is missing research that looks specifically at the degree to which the implementation of PBIS correlates with the issue of disproportionality in student discipline, and furthermore, the extent that there are differences in disproportionality when compared to the degree of implementation of PBIS. My study looks specifically at the degree of implementation of PBIS and if this implementation shows a correlation to the existence of disproportionality in reported student behaviors. My study also looks to see if there is a difference in the existence of disproportionality in schools that fully implemented PBIS and those that did not.

To this end, I studied how implementation of PBIS correlates with demographic groups being overrepresented in discipline data and if there is a significant difference in disproportionality when schools with higher or lower degrees of implementation are compared. My study is beneficial to all educators, and also to society in general. Disproportionate discipline issues exist in most educational environments, and the issue of disproportionality does not stop with school discipline. The same demographic groups are overrepresented in law enforcement
issues, poverty, unemployment, health issues, and much more (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Gregory et al., 2010; Kaufman et al., 2010; Maag, 2012; Mizel et al., 2016; Montgomery, 2012; Nese et al., 2020; Okonofua et al., 2016; Roch & Edwards, 2017). It is possible that the issue of disproportionality could start in school systems and carry over to society as students graduate and become adults.

**Purpose Statement and Research Questions**

The purpose of my study was to understand the correlation between the degree of implementation of PBIS in schools and the representation of various student groups in school discipline occurrences, disaggregated by race/ethnicity, sex, special education status, and socioeconomic status, and to understand if there are significant differences in disproportionality in school discipline when compared to the degree of implementation of PBIS. My study ascertained the overall number of behavior occurrences in a set of schools, and the number of behavior occurrences within each behavior occurrence category (minor, moderate, major). Behavior occurrences were disaggregated by the aforementioned groups and the disproportionality differences within each student group area and the spread of disproportionality between the identified main group within a demographic category and all other groups within that category were calculated.

My study addressed the following research questions:

1. To what degree do 16 schools in three school districts in one Midwest state implement PBIS as determined by an overall score on the School-Wide Evaluation Tool (SET)?
2. To what degree do differences in disproportionality exist in the number of behavior occurrences in the 16 participating schools, overall and within each behavior occurrence
category, when broken down by race/ethnicity, sex, special education status, and socioeconomic status?

3. To what extent does the implementation of PBIS as measured by the SET score correlate with the spread of disproportionality in school behavior occurrences when broken down by race/ethnicity, sex, special education status, and socioeconomic status, overall and within each behavior occurrence category?

4. To what extent does the degree of PBIS implementation display a significant difference in the spread of disproportionality in the total number of behavior occurrences and within each behavior occurrence category in the participating schools when comparing White to non-White students, female to male students, non-special education students to special education students, and non-low socioeconomic students to low socioeconomic students?

Conceptual Framework

There are many factors that impact the number of behavior occurrences of individual students and groups of students within a school. Demographics are known predictors of the differences among groups of students in the number of behavior occurrences (Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Garibaldi et al., 1996; Mizel et al., 2016; Okonofua et al., 2016; Predy et al., 2014). This is especially true in secondary settings. Previous research has shown that certain groups of students as determined by race/ethnicity, sex, special education qualification status, and socioeconomic status are disproportionately disciplined (Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Garibaldi et al., 1996; Kaufman et al., 2010; Lacoe & Manley, 2019; Maag, 2012; Montgomery, 2012), and that these demographic groups serve as predictors for the number of behavior occurrences for students. There are several studies that look at reasons why disproportionality exists (Boneshefski & Runge, 2014; Gregory et al., 2010;
Mizel et al., 2016; Okonofua et al., 2016; Roch & Edwards, 2017). My study looked at the correlation between the implementation of PBIS and disproportionality as well as the differences in the spread of disproportionality when compared to the degree of implementation of PBIS.

The connection between implementation of PBIS and the representation of groups of students that are traditionally disciplined at disproportionate rates is shown in Figure 1. The box on the left side of the figure shows the seven necessary components that must be in place in order for PBIS to be implemented with fidelity according to the SET: (a) Expectations Defined, (b) Behavioral Expectations Taught, (c) On-going System for Rewarding Behavioral Expectations, (d) System for Responding to Behavioral Violations, (e) Monitoring and Decision Making, (f) Management, and (g) District Level Support. Fidelity is defined as achieving sustained overall implementation of 80% or higher. Expectations Defined means that the school has visible, defined expectations for behavior. Behavioral Expectations Taught means that students and staff are able to accurately articulate the expectations for behavior. On-going System for Rewarding Behavioral Expectations means that there is a proactive system in place for acknowledging behavior that meets expectations. System for Responding to Behavioral Violations means that there is a documented system for responding to behavior that does not meet behavior expectations. Monitoring and Decision Making means that there is a documented system for collecting, summarizing, and reporting discipline data and using this data to influence decision making for school-wide behavior support. Management refers to the composition and function of a PBIS team, which includes building-level administrative support. District-Level Support means that there is PBIS implementation support from district level staff.
Note: Conceptual framework for Bruce’s doctoral research (2021).

In theory, the degree of implementation of these PBIS components correlates with the frequency of behavior occurrences when broken down by demographic categories (race/ethnicity, sex, special education status, socioeconomic status), represented in the lower box on the right side of Figure 1. Hypothetically, if a correlation exists then causation could be explored in further studies. Hypothetically, if there is statistical significance when comparing the means of the spread of disproportionality of schools that implement PBIS and those that do not implement PBIS, there is a need to identify the implementation components leading to this statistical significance to improve the issue of disproportionality.
Methods Overview

This study is a quantitative study with data collected using a survey and existing student information system data bases for 16 schools in one Midwest state. The survey tool is the School-Wide Evaluation Tool (SET), and was completed by each participating school through the use of an electronic survey in order to measure the degree of implementation of PBIS. The student information systems provided enrollment data, demographic data, and discipline data. Disproportionality differences and spreads were calculated based off the discipline and demographic data for the participating schools. This information was used with the SET data to look at the correlation between implementation of PBIS and disproportionality, as well as comparing the means of the spread of disproportionality within each demographic group for schools that fully implemented PBIS and schools that did not fully implement PBIS.

Data was analyzed using descriptive statistics, correlation analysis, and Mann-Whitney U tests. The analyses focus on the correlation between degree of implementation of PBIS and the spread of disproportionality, and comparing the means of the spread of disproportionality between groups of students for schools that implemented PBIS with fidelity and schools that did not implement PBIS with fidelity. The demographic groups were selected because these groups of students are historically disproportionately disciplined (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Kaufman et al., 2010; Mizel et al., 2016). Data was analyzed using Statistical Package for the Social Sciences (SPSS) software.

Chapter 1 Closure

My study adds to the existing body of literature on supporting students at risk of failure in school. It focused on the issue of disproportionality in school discipline by looking at the degree of implementation of a specific behavior support initiative, PBIS, and determined if there is a correlation between PBIS implementation and disproportionality among student groups in school.
discipline, and also compared the existence of disproportionality for groups of students within schools that implemented PBIS with fidelity and schools that did not implement PBIS with fidelity. It informs professionals in the education field and those interested in educating young people.

Chapter 2 reviews the literature and looks at identifying factors that determine if students are at risk of failure, the history of behavior issues in schools, and systems designed to tend to these issues.
CHAPTER 2
LITERATURE REVIEW

Student behavior issues can pose problems in schools, and these issues impact student learning. There are certain groups of students who are at greater risk of academic failure due to behavior issues. In this chapter I looked at students who are at risk of academic failure and are heavily impacted by behavior issues. In order to understand how to tend to this issue, it is important to understand the history of school discipline. This chapter examines the issue of disproportionality in student discipline, the philosophical approaches to handling school discipline, and the impact that legislation has on current practices.

Students At-Risk of Failure

The “at-risk” label refers to students that are at risk of not being academically successful in school and is based on a variety of factors. The National Center for Education Statistics (NCES) compiled a statistical analysis report of the National Education Longitudinal Study (NELS) of 1998 that identified specific risk factors of school-aged students. These labels are supported by more recent research, which also identifies the same risk factors of school-aged children (Bowditch, 1993; Hamilton, 2019; Lacoe & Manley, 2019; Mizel et al., 2016; Okonofua et al., 2016; Predy et al., 2014). These risk factors include demographic background, family background, parent involvement in the school, academic history, behavior, teacher perceptions, and the characteristics of the school students attend (Kaufman et al., 2010). Their findings were that certain groups of students had higher rates of being identified as at risk, including the following groups: students from Hispanic, African American, and Native American backgrounds; students with low socioeconomic status; male students; students with identified special education needs; students from single parent households or from families with a school
dropout history; students with a history of academic struggles; students whose teachers perceived them as at-risk; and students who had other identified risk factors and attended schools that were low performing (Kaufman et al., 2010; Lacoe & Manley, 2019). Studies show these risk factors had a tendency to intensify when students transitioned from elementary to secondary school (Bailey et al., 2015, Lacoe & Manley, 2019). For the section that follows, transition from elementary to secondary school and the connection between groups of students identified as at-risk and those who are disproportionately disciplined are discussed.

**Transition from Elementary to Secondary School**

Student behaviors begin to change when they enter the secondary realm of education. Bailey et al. (2015) discussed these changes in a study that explained that puberty brings about many changes for young people, including physical, social, emotional, and cognitive changes. In addition to these organic changes that young people experience around the time they transition to secondary school, the structure of the school itself is much different, presenting even more changes. The structure of secondary schools includes more transitions, an increase in academic rigor, larger facilities, and more rigid behavior expectations (Akos et al., 2015; Bailey et al., 2015; Grimaldi & Robertson, 2011; Lacoe & Manley, 2019). Middle school is the pivot point for these changes as middle school is the initial entrance into the secondary realm of education.

Secondary school settings tend to be larger than elementary settings, and are noted as more impersonal than elementary settings (Bailey et al., 2015). In elementary settings, students typically spend the majority of their day with one teacher and travel to classes with the same group of students, establishing a sense of belonging within that consistent group. In secondary school, it is common for students to see many teachers throughout the day, with each transition during the day resulting in a new group of classmates. With the physical, social, emotional, and
cognitive changes comes an intensified need for a sense of belonging in middle aged students (Bailey et al., 2015; Irvin & Richardson, 2002). Since the sense of belonging is easier to instill in an elementary setting when students are automatically a member of a classroom of students that work together throughout the entire day, this leaves middle aged students with an additional challenge during this transition time of trying to find a group in which to belong. This sense of belonging is vital for middle aged students to feel valued and useful in their educational and social environments (Bailey et al., 2015; Irvin & Richardson, 2002). Additionally, students entering secondary school are experiencing a change from being the oldest group in a school setting to the youngest group in a school setting, which is true for both the transition to middle school and the transition to high school (Bailey et al., 2015; Lacoe & Manley, 2019).

Transitions from elementary school to middle school and from middle school to high school both present challenges for students. The transition year to middle school is noted as one of the most crucial years for developing risk factors, including academic and behavioral factors (Bailey et al., 2015). The capacity to deal with these changes can be impacted by emotional intelligence, which can be impacted by environmental factors, making this transition time different for individual students (Akos et al., 2015; Bailey et al., 2015; Grimaldi & Robertson, 2011). Akos et al. (2015) indicate that the impact of transition from elementary to secondary education can vary based on demographic groups.

**Student Groups Disproportionately Disciplined**

As young people experience transitions and organic changes when going from elementary educational settings to secondary settings, their behaviors can become more extreme. An increase in extreme behaviors, coupled with more rigid behavior expectations, can lead to an increase in behavior occurrences that receive consequences. Many researchers have looked at
this discipline data over time and found that there is an increased impact on certain groups of
students, specifically African American students, Hispanic students, male students, students with
disabilities, and students with low socioeconomic status, resulting in disproportionate discipline
rates of impacted groups (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020;
Garibaldi, 1979; Gregory et al., 2010; Hamilton, 2019; Kaufman et al., 2010; Maag, 2012; Mizel
et al., 2016; Montgomery, 2012; Okonofua et al., 2016; Roch & Edwards, 2017). There are many
theories on why the issue of disproportionality in school discipline persists.

Many of the studies that looked at the issue of disproportionality analyzed the reason that
the issue exists as well as seeking out potential interventions that could mitigate the issue. For
example, Boneshefski and Runge (2014) explored the need for culturally relevant interventions
in their study, claiming that designing and implementing systems with increased attention to
interventions that are culturally relevant would tend to the issue of disproportionality. This
research looked at elementary schools in small urban environments in one state. Gregory et al.
(2010) explored the reason for the issue of disproportionality in their synthesis of national studies
focused on this topic, and stated that demographic features alone cannot be the sole explanation
for disproportionate discipline and that bias also plays a part. This research shows a connection
between disproportionality in school discipline and lagging academic achievement across all
grade levels in k-12 public schools. Mizel et al. (2016) agree with this theory, and looked at the
way that a variety of risk factors contribute to this problem. This research looked specifically at a
sample of approximately 2500 tenth through twelfth grade students in Southern California.
Mizel et al.’s study found that disproportionality in school discipline was most prevalent in
African American boys and with students that have parents with lower levels of educational
success.
Still, other studies focused on the relationship between demographic factors and the bias of educators, and also looked at how the issue of disproportionality is more present in more segregated areas (Lacoe & Manley, 2019; Okonofua et al., 2016; Roch & Edwards, 2017). Additionally, studies show that the types of offenses for students of color tend to be more subjective in nature, such as disrespect, where the referred circumstances of white students tend to be objective in nature, such as smoking (Lacoe & Manley, 2019; Okonofua et al., 2016; Roch & Edwards, 2017).

Social stereotypes are thought to be contributing factors to the differences in the types of offenses that different groups obtain (Gregory et al., 2010; Mizel et al., 2016; Nese et al., 2020; Okonofua et al., 2016; Roch & Edwards, 2017). Essentially, since aggressive and dangerous are stereotypical attributes of African American males in society then this pre-conceived perception of African American males leads to an increased number of referrals for disrespectful and threatening behavior (Caldwell et al., 2020; Okonofua et al., 2016). The referrals for White students tend to be more objective and to be given for more factual, evidence-based circumstances rather than for offenses that include a larger element of interpretation (Kaufman et al., 2010; Lacoe & Manley, 2019; Maag, 2012).

The body of literature around disproportionate discipline suggests that the root causes of this issue are multifaceted. This data holds true across the nation. Conclusions from the analysis of suspension and expulsion data from the Office of Civil Rights (OCR) explained that certain groups are disproportionately disciplined, for longer periods of time, and for a variety of reasons that do not always ring true for other groups. Student groups that are disciplined at higher rates than other groups experience more time out of the classroom, instilling a greater disconnect
between those groups of students and their educational experience (Boneshefski & Runge, 2014; Nese et al., 2020).

My study does not identify the particular reason that disproportionality occurs, but it looks at the extent to which disproportionality exists in school discipline, and how the degree of implementation of specific school-wide structures correlates with this issue. Understanding the correlation and comparing the differences in disproportionality with the implementation of these structures provides practitioners with a basis for future research in this area. Improving the issue of disproportionality is important because groups that are disproportionately disciplined experience greater exposure of being excluded from the classroom. This results in more time out of the general classroom setting, and less instructional time, which can be associated with academic failure and disconnect from school. The issue of disproportionately in school discipline intensifies the issue of being at risk of academic failure. Behavior issues in schools and academic failure impact students, the school, and the community, and these impacts have been explored for many years. The history and impacts of student behavior are discussed in the next section.

**History of Student Behavior Issues in Public Schools**

School discipline has been an issue in public schools for a long time. Discipline issues have an impact on the staff and students in schools. Literature supports that this has been a topic of discussion in the education world as far back as the early 1900s (Eldridge, 1930; Stevens, 1909). Across time, student behavior issues in schools have resulted in some sort of discipline that is applied after a student commits an offense in order to train students to comply with a given set of standards or rules. Within this, if students do not comply with the set of given standards, they are given consequences. Editorials from educators in the early 1900s indicate that discipline was considered the highest priority for maintaining order in classrooms, and that there
were options for using a militant approach or a self-governing approach (Eldridge, 1930; Stevens, 1909). During these early years, the focus was on class management and the need for teachers to take an authoritative stance in the classroom, noting that in the infrequent situations where students did not comply, they would be removed from the learning environment (Eldridge, 1930; Stevens, 1909). This focus remained for several decades. Around the 1970s, the conversation transitioned to looking at who was being disciplined and why this was occurring. Skiba et al. (2002) suggested that the shift in the conversation took place in the aftermath of school desegregation and the Civil Rights Movement.

Perceptions about an increase in violence in schools and concerns about arbitrary use of suspension prompted the OCR to conduct a systematic collection of suspension and expulsion data (Garibaldi, 1979). This study found many vague areas with suspensions and expulsions, noting that there were fewer common circumstances for out of school suspensions or expulsions for actual violent acts and more that were used as a response to oppositional actions, such as 'insubordination' (Garibaldi, 1979; Kaufman et al., 2010; Maag, 2012; Nese et al., 2020). The terms of insubordination could not be succinctly defined, as instances of insubordination included many acts from a lack of following directions to demonstrating disrespect to acting out in a physical way. Further, the analysis of this data portrayed that the occurrences for suspensions and expulsions were not proportionate to the percentage represented by groups in the population, and this is especially true for non-White students (Garibaldi, 1979). The results of Garibaldi’s (1979) analysis of this study suggest that offenses that resulted in a suspension or expulsion were not unilateral across groups of students or from administrator to administrator and even nebulous at times. More current literature supports that the issue of unilateral discipline across student groups and issues with consistency from administrator to administrator persist
today (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Lacoe & Manley, 2019; Mizel et al., 2016; Roch & Edwards, 2017).

**Impact of Discipline on Students**

It is important to respond to students when they display negative behaviors for the safety, security, and well-being of all people in the school. At the same time, responses to negative behaviors can impact young people in a number of ways. Educators may be mostly concerned with the academic impact of imposing consequences on students with negative behaviors, and might choose to use consequences that exclude students as a reaction to those behaviors. These types of consequences remove students from the learning environment, causing students to miss potentially valuable learning opportunities (Garibaldi, 1979; Mizel et al., 2016; Nese et al., 2020; Nocera et al., 2014). Students with repeated behavior issues will experience a more extreme void. Exclusionary practices, or removing students from the learning environment, also reinforce for students that negative behaviors can easily result in avoiding academic work. This can become a learned strategy for students who struggle academically in an effort to bail out of the expected academic demands.

Although the academic impact is extremely important, young people who receive consequences that remove them from the learning environment, such as suspension and expulsion, removal from class, or isolation, are also affected socially and their safety can be compromised. There are a number of studies that show that repeated use of exclusionary practices has negative societal impacts on individuals, and in many cases, groups of people that are disproportionately disciplined in schools, particularly non-White students (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Mizel et al., 2016; Nese et al., 2020; Nocera et al., 2014). Nocera et al.’s (2014) case study of PBIS implementation in one low performing
middle school in Connecticut presented data that linked repeated use of exclusionary practices to increased representation in the criminal system. Garibaldi et al.’s (1979) research looked at programs in schools that were created to provide alternatives to suspension as a response to a national collection of school discipline data that showed enormous gaps in discipline occurrences among student groups, particularly with non-White students. Garibaldi et al.’s review of the literature connects the use of exclusionary practices with a stronger presence in special education and the juvenile criminal system and explains that a certain stigma is attached to students who are excluded, which can have detrimental social impacts as well. Excluding students from the learning environment can threaten their connection to school. Disconnect from education can encourage students to disembark from education in general, leading to a plethora of issues as an adult and in society. Mizel et al. (2016) further detail these issues as adults in society in their study focused on demographic disparities in school discipline, which looks specifically at tenth through twelfth graders in the southern region of one state. Their study shows a strong connection between demographic groups and the use of exclusionary practices, particularly with non-White students, students with low socioeconomic status, and students with identified special education needs.

Additionally, their study shows that, when looking at the groups that are disproportionately disciplined, the level of education of a student’s parents also had a connection to the frequency and intensity of a student’s experiences with exclusionary practices. Mizel et al. postulated that this cycle of low levels of education would continue to repeat for students overrepresented in school discipline data. Similar conclusions are stated in Bowditch’s (1993) three year case study of one urban high school. Bowditch’s study shows parallels between the repeated use of exclusionary practices and school dropout rates. These parallels also exist
in Boneshefski and Runge’s (2014) study of elementary schools in small urban areas of one state, showing a connection between the use of exclusionary practices in younger students and the dropout rate of those students in later years.

Finally, all of these studies detail the societal impacts of students that are exposed to less instructional time due to the use of exclusionary practices in response to school discipline, and stated that these impacts include the following: less income, less contribution in taxes, higher rates of access to social welfare programs, increased rates of criminal activity, overrepresentation in prison populations, increased health problems, and even a shorter life span.

Multiple studies have examined the impacts of applying discipline with curiosity about how these tactics tend to the behavior that caused the consequences, finding that, often times, consequences that exclude students from the learning environment do not prevent young people from behaving in similar ways in the future (Boneshefski & Runge, 2014; Garibaldi, 1979; Mizel et al., 2016; Robert, 2020). In fact, studies have shown a connection between the use of exclusionary practices and the behavior for which it is used repeating, and also connected this repetition to stunted academic growth, low graduation rates, decreased income levels and unemployment, increased health problems, less financial contribution to the community, increased access to government assistant programs, and increased crime rate (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Mizel et al., 2016; Nese et al., 2020).

There are some alternatives to suspension or options that place students with behavior issues in an alternative environment until there has been opportunity to re-teach appropriate social skills. One such option is in-school suspension, where students are still expected to meet academic expectations, but are placed in an alternative environment to the classroom so that there can also be an intentional focus on teaching responsible behavior. Once the behavior goals
have been met, students are released to the general education setting. Other consequences that do not necessarily remove students from the full learning environment can include conflict-resolution between students, mediation, restitution, and a definitive process for re-entering into the general education setting. These types of alternatives may seem to be a good replacement for out of school suspension or expulsion, yet, there are concerns with these approaches as well. Although students are not being suspended out of school, it is possible they are still excluded from the classroom. Repetition of exclusion from the classroom can still impact students in a number of ways, including lowered self-esteem, disconnect from school, and a break in rapport between the students and teachers (Boneshefski & Runge, 2014; Garibaldi, 1979; Garibaldi et al., 1996; Gregory et al., 2010; Nese et al., 2020). This impact can intensify the risk factors for students. For students that are already at risk of academic failure, or for groups of students that are disproportionately disciplined, circumstances of applying discipline can intensify their risk of academic failure in school. Currently, the culture of discipline in schools is somewhere between two overarching philosophies, which is the focus of the section that follows.

**Current Culture of Discipline in Public Schools**

There are currently two main approaches to discipline in schools: a reactive approach and a proactive approach. The differences between these two philosophies can have varying impacts on students, especially for students that have increased risks of academic failure. This section discusses both approaches and the impacts of each approach.

**Reactive Approach**

A reactive approach to student discipline issues is a more widely used approach to dealing with negative student behavior. Within this approach, the school system establishes rules and guidelines, and students that do not comply with these guidelines are disciplined. Discipline
can be applied for a variety of things, but with a reactive approach, is typically a punitive measure. These measures can sometimes lead to consequences that involve exclusionary methods, such as suspension, expulsion, removal from class, or isolation. A reactive approach to discipline is a compliance driven approach, reinforcing the idea that if the established rules are not followed, punitive measures will be taken. Garibaldi’s (1979) analysis of the OCR’s suspension and expulsion data showed that there were many instances of suspensions and expulsions that could have been resolved in the classroom, or been more positively impacted by stronger classroom management. This continues to hold true today. When discipline tactics are reactive in immediate response to student actions, and without a specific, universal protocol for teaching responsible behaviors, educators have the option of simply excluding students from the learning environment at any given time.

Although the use of exclusionary practices as a reaction to student behavior issues has been in place for many years, research shows that these practices increased in the mid-nineties as a result of the implementation of a Zero Tolerance initiative that was intended to diminish bullying issues in schools (Anyon et al., 2014; Maag, 2012; Nocera et al., 2014; Robert, 2020; Roch & Edwards, 2017). Zero Tolerance policies were originally used in the legal system in hopes of decreasing narcotics trafficking (Bell, 2015). Soon after the Zero Tolerance movement took off in the legal system in the 1990s, it made its way to educational organizations. This was in response to violent behaviors in schools and the media’s response that ignited fear of continued violent acts in school identifying the need for schools to do something to deal with this concern (Bell, 2015).

A reactive approach to student discipline issues continues to be the most highly used method currently (Caldwell et al., 2020; Gregory et al., 2010; Hamilton, 2019). This approach,
especially when using exclusionary practices as punishment, has known negative impacts on students. Maag (2012) described that using exclusionary practices as a reaction to discipline issues was intended to establish safer environments by removing students who pose danger and to decrease these negative behaviors. In contrast, Maag, and Anyon et al. (2014) found that exclusionary measures often times increase negative behaviors rather than the intended impact of diminishing the behavior. Excluding a student from the learning environment may meet the student’s need to avoid school work or leave an environment in which they are uncomfortable, and may meet the needs of the adults that do not want the negative behavior to continue. Since this is a tactic that meets the goals of those involved, students continue to exhibit the behavior as a means of gaining attention, avoiding work, or fulfilling other perceived needs. Furthermore, removal from the classroom environment continues to feed students’ disconnect from the classroom, and as that disconnect continues to widen, their comfort with being in the classroom lessens (Boneshefski & Runge, 2014; Nese et al., 2020).

In addition to meeting needs, reactive measures for negative behaviors can contribute to students gaining a certain desirable social status (Anyon et al., 2014; Caldwell et al., 2020; Maag, 2012). Students may use negative behaviors, such as aggression, to fulfill their perceived strength or to deflect the reality of other issues (Maag, 2012). In these situations, students often repeat offenses that earn them reactionary discipline in order to uphold a certain reputation or level of popularity. In the end, the research shows that reactive tactics, although intended to decrease negative behaviors and ensure safety, have a higher likelihood of those students repeating the negative behaviors that earned the exclusionary consequence (Caldwell et al., 2020; Gregory et al., 2010; Sugai & Horner, 2006).
A reactive approach to discipline issues can have a lasting effect on students, especially when exclusionary tactics are applied. High levels of behavior concerns can create disconnect between the student and school. Students with repetitive behavior issues resulting in suspension or expulsion have an increased probability of continuous behavior issues, and are more likely to experience academic issues, which, in some cases, lead to dropping out of high school (Okonofua et al., 2016). Removal from the learning environment creates loss of learning time, and an inability to truly teach appropriate social behaviors. Further, failure to complete high school is also associated with a number of issues in adulthood, including unemployment, decreased earned wages, mental and physical health issues, substance abuse, and incarceration (Anyon et al., 2014; Gregory et al., 2010; Maag, 2012; Okonofua et al., 2016). Reacting to negative student behaviors does not teach young people to make different decisions in the future, which can also contribute to repetitive behaviors. According to Johnson et al. (1992), techniques within a reactive approach reinforce the idea to young people that adults are an essential component to resolving issues, creating a barrier to students learning more appropriate social behaviors and how to resolve conflict at an independent level. Changes in school systems and student needs over time have created a greater need to integrate preventative approaches to discipline issues. This is discussed in the next section.

**Proactive Approach**

A different philosophy of dealing with student behavior issues is using a proactive approach. A proactive approach is intended to promote more positive behaviors and decrease negative behaviors through a preventative system that includes explicit instruction around behavior expectations that are co-created with students and staff (Robert, 2020; Skiba et al., 2016). This approach differs from a reactive approach because the emphasis is focused on
frontloading expectations, acknowledging students for displaying positive behaviors, and a continuous cycle of teaching behavior expectations. Also, a proactive approach instills a system of teaching responsible behaviors to replace negative behaviors, with an intentional focus on learning appropriate social skills.

Legislative changes, such as No Child Left Behind (NCLB), and more recently, Every Student Succeeds Act (ESSA), have allocated funds tied to implementing proactive systems of behavior support, so discussion and use of these systems has become much more prevalent. In some cases, schools are focused on having these systems so that they do not lose funding (Anyon et al., 2014). However, Anyon et al. (2014) uncovered in their study that even if the systems are documented as being used and the funding remains intact, the system will not be effective unless there is an intentional focus on teaching responsible behaviors. Johnson et al.’s (1992) study concluded that implementing discipline strategies that teach responsibility rather than attempting to control students through a reactive approach is what will empower young people to improve their behaviors. These legislative changes are further explained in the next section of this chapter.

Proactive approaches to student behavior are intended to impact the majority of students in a school through teaching social skills, using universal behavior expectations, and intentional use of positive feedback and reinforcements for meeting expectations (Hamilton, 2019; Skiba et al., 2016; Sugai & Horner, 2006). In such cases, there will inevitably be students that require additional supports outside of the universal supports put in place. With a proactive model, this would include teaching function-based strategies with increased attention and monitoring from the adults (Robert, 2020; Sugai & Horner, 2006). Function-based strategies are specific strategies
for students to use based on the function of their negative behavior, and are intended to teach a strategy to replace the negative behavior.

Proactive tactics are rooted in moving from a compliance-based system of discipline to teaching responsibility and helping young people practice these strategies that should transfer into their life as a whole (Hamilton, 2019; Mullet, 2014; Stewart Kline, 2016). This is a shift from tending to what is wrong to focusing on what is going well. Implementation of such tactics in classrooms should focus on the care and concern for the student, while understanding the social-emotional, academic, and environmental needs of the student (Cartledge & Kourea, 2008). Ideally, a proactive approach creates a responsive learning environment for a student that considers the diverse backgrounds of each student (Cartledge & Kourea, 2008; Hamilton, 2019).

Additionally, this approach teaches self-regulation strategies for continued use for students, differing from a reactionary model which isolates students from the learning environment (Caldwell et al., 2020; Cartledge & Kourea, 2006; Skiba et al., 2016).

A proactive approach also strives to teach responsibility in an effort to restore positivity where negativity was created. This philosophy considers alternatives to suspensions and expulsion with an intentional focus on repairing the situation that led to negative behavior instances with some sort of restitution, while attempting to keep students in the learning environment as much as possible. A proactive approach to discipline requires educators to embed behavior supports and instruction into daily learning in the classroom. It is considered to be a more time consuming approach to discipline, but potentially reaps higher benefits in the future. Johnson et al. (1992) indicate that, although educational professionals are aware that implementing proactive strategies that teach responsible behaviors tend to be more effective strategies, educators do not always implement these strategies because it requires more work and
effort. In essence, teaching responsibility requires more individualized instruction, which can be difficult in schools where students have many different needs. Another issue with implementing strategies that teach responsibility is that determining a behavior as negative can be subjective (Garibaldi, 1979; Garibaldi et al., 1996; Maag, 2012; Okonofua et al., 2016). Although behavior issues that include outward violence are easier to classify, behaviors that include aggression, disrespect, or disobedience can be more difficult to classify with consistency (Garibaldi, 1979; Garibaldi et al., 1996).

In all cases with proactive approaches, the goal is to use preventative strategies to diminish the occurrences of negative behavior, and in circumstances when reactive measures are necessary, they include intentional teaching of expectations (Robert, 2020; Skiba et al., 2016; Sugai & Horner, 2006). This is becoming increasingly more important as school systems are being held to a different standard with legislative changes, and are being forced to make changes.

**Legislative Changes in Schools**

Federal and local legislation continue to impact educational organizations in a number of different ways. Mandates from lawmakers for education date back to one room schoolhouses, and continue to grow in rigor and implementation. This section shifts from discussing philosophical approaches to focusing on practicality, and within this, focusing on such legislation that has influenced the conversation and changes in educational structure as related to discipline practices and student behavior.

**The Impact of Legislation on School Discipline**

In 1954, school desegregation opened the doors of White schools to students of color, increasing the diversity of schools across the country. Changing the racial composition of public
schools in America brought about increased conversation around meeting the needs of different types of learners, and this conversation was fueled by the Civil Rights Movement. Soon after, conversations were not only focused on race, but meeting the needs of students in poverty, students with special needs, and students with a variety of diverse backgrounds. As schools began to look at ways to meet the diverse needs of their student populations, the media began to look at how the changes in school demographics might be impacting student discipline issues. Student discipline issues soon became a popular educational topic, including which students were being suspended, for what types of offenses, and for how long. It was during this time frame that the concern of disproportionate discipline came into focus. Although there have been numerous laws and acts put in place to protect students with diverse needs, the conversation continues today, and the laws and acts put in place continue to be reauthorized and changed to meet differing needs (United States Department of Education, 2021).

In 1965, the Elementary and Secondary Education Act (ESEA) was put in place as a stem from former President Lyndon B. Johnson’s War on Poverty. This act focused on equal opportunity in education and a system of accountability and included a system of allocated funds for supporting public education. Meanwhile, the Education for All Handicapped Children Act of 1975 was put in place, to be later reauthorized and renamed as the Individuals with Disabilities Education Act (IDEA). This act was established in order to mandate Free Appropriate Public Education (FAPE) to students with identified disabilities, including mandates about how discipline shall be conducted for students with disabilities. Both of these acts have been revisited and reauthorized a number of times (United States Department of Education, 2021).

Perhaps the most notable reauthorization of the ESEA was in 2002 when this act was renamed No Child Left Behind (NCLB). At this time, NCLB included rigorous measures of
accountability for schools based on common standardized assessments and a host of other mandates. In 2004, IDEA was reauthorized to align directly with NCLB. The alignment between these two acts required schools to implement research-based interventions to tend to the whole student, including academic and behavior concerns. The acts also called for additional focus on students with disabilities to ensure their needs are being met without unnecessary restrictions on their educational experience, as well as new structures around qualifying students for special education (United States Department of Education, 2021).

NCLB was derived from the realization that there were far too many students being qualified for special education services. It was deemed that these qualifications were being made without an attempt to ensure the general instruction and supports in place were appropriate, identify individual needs, and provide adequate supports to meet those individual needs (Dee & Jacob, 2011; Sugai & Horner, 2006; Sugai & Horner, 2009). NCLB increased the influence of the federal government over public schools (Dee & Jacob, 2011). Much of this influence was gained through the requirement of standards-based assessments to determine progress of individual schools. The ultimate goal was for schools to continue to make progress to eventually be proficient in reading and math according to mandated assessments by the end of the 2013-2014 school year (Dee & Jacob, 2011; Sugai & Horner, 2009). In order to reach this goal under NCLB, schools were directed to use research-based practices to identify individual student needs and to provide suitable resources and instruction to meet the needs of all students, including behavioral needs (Chitoyo et al., 2012; Dee & Jacob, 2011; Sugai & Horner, 2009).

Most recently, NCLB has been again reauthorized and renamed as the Every Student Succeeds Act (ESSA), which was enacted in 2015. ESSA is a full replacement of NCLB. In contrast to NCLB, ESSA narrows the role of federal government and returns some of that control
over to local governments. ESSA includes new mandates around college and career readiness, accelerated educational experiences, and inclusion of the arts into daily instruction. Still, many of the attributes of NCLB remain in place with ESSA, including assessment mandates and systems of accountability. ESSA still includes mandates around identifying students that are not making adequate progress and establishing a specific system of intervention for these students.

The reauthorizations of acts continue to change the mandates for educational organizations. ESSA includes language that identifies the needs for educational organizations to decrease the use of exclusionary discipline practices and increase the use of behavioral interventions through a proactive system of behavioral supports. Within this mandate, school systems are required to have systems in place to identify individual student needs and use a systemic approach to intervening to meet these needs for both academics and behavior. According to the Michigan Department of Education, Multi-Tiered Systems of Support (MTSS) is a system that is put in place to meet the needs of all students and meets the requirements within ESSA (Michigan Department of Education, 2021).

**Multi-Tiered Systems of Support**

MTSS is an umbrella term that encompasses academic supports and behavioral supports intended to meet the unique needs of all students. The intent of MTSS and the initiatives that fall under this umbrella is to establish a proactive system of meeting the needs of all learners while taking into account their diverse needs (Skiba et al., 2016). MTSS has several components that are necessary to implement in order to achieve effectiveness. The main structure of both academic systems and behavioral systems include high-quality instruction to all students, frequent assessment to identify how students are responding to this general instruction, interventions put in place to meet the needs of students who are not responding to general
instruction, and a continuous cyclical approach of instructing, assessing, intervening, and evaluating to meet the needs of all students (Sanetti & Collier-Meek, 2015; Sugai & Horner, 2009). Research-based practices, including forms of instruction that include viable interventions, are an essential component with MTSS.

Response to Intervention (RtI) is a three-tiered system of support that falls under the MTSS umbrella. It is a system that is most often used to meet the academic needs of students, although there are some circumstances of using the same format for behavioral needs and naming it behavioral RtI (Chard, 2012; Sugai & Horner, 2009). There are many studies that examine the impact of RtI implementation (Chard, 2012; Greenfield et al., 2010; Skiba et al., 2016; Sugai & Horner, 2009). The first tier is general instruction to all students that should, ideally, meet the needs of 80-90% of the learners (Chard, 2012; Greenfield et al., 2010). The second tier is a differentiated approach to meet 10%-15% of the learners that do not respond to tier I. These supports could include small guided groups in the classroom or differentiated work to meet needs, and are in addition to tier I supports. The tertiary tier is geared toward the 1%-5% of students that do not respond to tier I and tier II efforts. Tier III supports are frequent, intensive, and individualized, and in addition to tier I and tier II supports. Under the current legislation, Michigan schools are required to have an MTSS plan that identifies specific supports for students’ academic and behavioral needs. PBIS, a three-tiered system of support, is one such support that meets the MTSS requirements in Michigan, and is discussed in the next section.

**Positive Behavioral Intervention and Supports**

PBIS is a three-tiered system of support that is used to meet the behavior needs of all students (Coffey & Horner, 2012; Maag, 2012; Robert, 2020; Sugai & Horner, 2006, 2009). This approach is a research-based method that includes prescribed strategies for meeting the behavior
health needs of all students. The structure of PBIS is identical to the previously outlined structure of RtI. Ideally, most students will respond to tier I instruction that includes universal behavior expectations and a system of reinforcements for meeting these expectations (Coffey & Horner, 2012; Robert, 2020; Sanetti & Collier-Meek, 2015; Sugai & Horner, 2009). Students that do not respond to tier I instruction will receive tier II supports that include additional efforts in and out of the classroom to reinforce positive behaviors (Coffey & Horner, 2012; Robert, 2020; Sanetti & Collier-Meek, 2015; Sugai & Horner, 2009). Tier III supports are put in place for the smaller percentage of students who do not respond to tier I and tier II supports, and are in addition to these supports (Coffey & Horner, 2012; Robert, 2020; Sanetti & Collier-Meek, 2015; Sugai & Horner, 2009). PBIS has specific essential components that must be in place to consider the systems to be implemented with fidelity.

PBIS was adopted by the State of Michigan in 2006 as an initiative to meet the behavioral needs of all students under the MTSS umbrella (Michigan Department of Education, 2021). This policy requires all school districts to implement PBIS supports. The State of Michigan’s Department of Education adopted PBIS under the establishment of the Michigan Integrated Behavior and Learning Support Initiative (MIBLSI), which has recently been renamed as Michigan’s MTSS Technical Assistance Center (MiMTSS) (Michigan Department of Education, 2021). This initiative was developed as a requirement of NCLB and the Individuals with Disabilities Education Act (IDEA), and is funded through federal and state grants attached to legislation. MiMTSS is a support provided to schools in Michigan with implementing and sustaining MTSS, and within those systems, PBIS. MiMTSS was established to carry out the systems of support necessary to meet the academic and behavioral needs of all students, including PBIS (Michigan Department of Education, 2021). The degree of implementation of
PBIS in each school district varies and can be measured by a multitude of assessments, checklists, and evaluation tools.

**Implementation**

The three-tiered, proactive PBIS approach includes a focus on a universal set of behavior expectations for all students, specific strategies to work with students who do not respond to the universal expectations but do not display severe challenges, and individualized approaches to work with students who need intensive support (Cressey et al., 2014; Maag, 2012; Robert, 2020; Sugai & Horner, 2009). PBIS is a building-wide proactive approach that focuses on teaching responsible behaviors and actions, and that uses exclusionary measures as a last resort that includes strategically teaching replacement behaviors, only being used after exhausting all other strategies, and documenting the steps taken to intervene (Bradshaw et al., 2010).

There are multiple components of PBIS that are imperative to have in place in order for the system to be considered to be implemented with fidelity at a building level, including: defined expectations, a system for teaching expectations, an ongoing system of acknowledging positive behavior, a system for responding to behavior violations, monitoring data and implementation and decision making based on this monitoring, management, and support from the district level (Boneshefski & Runge, 2014; Pas & Bradshaw, 2012; Sugai & Horner, 2006; Sugai & Horner, 2009; Sugai et al., 2005). Integration of each of these components is intended to create a sustainable environment of improved positive behaviors and decreased negative behaviors for all students (Coffey & Horner, 2012; Sugai & Horner, 2009). There are a number of research validated evaluation tools that schools or districts can use to evaluate and monitor implementation. These tools are intended to assess implementation and serve as a guide for implementation. For the purposes of this study, I used the School-wide Evaluation Tool (SET) as
the research validated evaluation document in order to determine the degree of implementation of PBIS.

PBIS implementation has been occurring in schools for many years. There are many studies that look specifically at how implementation of PBIS has impacted different learning environments. The next section details studies in elementary and secondary schools.

**Current Impact of PBIS Implementation**

The structure of PBIS was built to support students at an earlier level of education, with the idea that this intervention would pave the way for more behavioral success for students as they continue in their educational careers. Many studies show success for PBIS implementation in elementary schools in all areas: suburban, urban, and rural (Boneshefski & Runge, 2014; Bradshaw et al., 2010; Burke et al., 2012; Cresse et al., 2014; Smolkowski & Strycker, 2016). Boneshefski and Runge’s (2014) study of PBIS implementation in urban elementary schools in one state shows that the number of office referrals decreased when the level of implementation of PBIS increased. Knowing this data, Boneshefski and Runge looked more specifically at calculating a risk index and risk ratio to see if disproportionality exists in the data and made recommendations of culturally responsive practices to use to eliminate the issue of disproportionality. While Boneshefski and Runge started to look at the issue of disproportionality in their study, other studies focus more specifically on overall behavior as a result of PBIS implementation in elementary schools. Examples of these studies are detailed in the following paragraphs.

Bradshaw et al. (2012) conducted a four year effectiveness study of 37 elementary schools, looking specifically at the implementation of PBIS and its impact on student behavior. They found that implementation of PBIS had a significant positive impact on student behavior
problems, student concentration issues, social emotional functioning, and pro-social behavior. Additionally, they noted a 33% decrease in overall office referrals for schools implementing PBIS, showing the best results for students that were exposed to PBIS implementation in kindergarten.

Cressey et al. (2014) conducted a participatory, descriptive five year case study of an elementary school where they served as educators. Levels of implementation of PBIS fluctuated over the five years, but their results showed that when the level of implementation of PBIS was stronger, the number of office referrals decreased.

Burke et al. (2012) looked at the correlation between understanding behavior expectations and positive student behavior in their study using three elementary schools in a suburban area of one state. This research used schools that were considered to have fully implemented PBIS according to their score on the SET. Burke et al. found that there was a correlation between an increased understanding of behavior expectations and positive student behaviors.

Smolkowski and Strycker (2016) conducted a four year implementation study of PBIS (along with other initiatives) in a large urban school district which included 33 elementary schools. Their results show a steady improvement in school discipline, student safety policy and training, staff perceptions about student behavior, student suspensions, and chronic tardiness when implementation of PBIS was stronger.

Educators soon found that they needed to implement structures, such as PBIS, at all levels of education, and the behavioral health needs were more intensified at later grade levels. There are some studies that have looked at PBIS implementation in secondary schools, and there has been some demonstrated success in those schools (Burke et al., 2014; Caldarella et al., 2011;
Freeman et al., 2016; Warren et al., 2006). Burke et al. (2014) replicated their study of PBIS implementation in elementary schools and used this in middle school settings. Their study included approximately 1000 middle school students, and found a strong association between understanding of behavior expectations and positive school behaviors. Caldarella et al. (2011) used a pretest/posttest design in their research, which specifically focused on the effect of PBIS implementation in secondary schools on school climate and student outcome. Caldarella et al. used two schools in Western states, and yielded responses from approximately 300 teachers and 10,000 students. Their study showed positive changes in school perception with increased PBIS implementation, and lower rates of student tardiness, unexcused absences, and office referrals. In their study that looked at the outcomes associated with PBIS in high schools, Freeman et al. (2016) found a positive link between PBIS implementation and student behavior and attendance in 883 high schools across 37 states. Warren at al. (2006) conducted a two year case study of one urban Midwest middle school. The case study looked at implementation of PBIS, and found a decrease in office referrals with the increase of PBIS implementation over the two years.

Although there has been noted success in many secondary schools with the implementation of PBIS, there remain implementation challenges that are more extreme in secondary settings versus elementary settings due to the aforementioned transitions. Studies about PBIS show that implementation has a positive impact on decreasing the number of overall behavior occurrences in elementary and secondary schools; still, there is the issue of disproportionality in school discipline.

**Chapter 2 Closure**

This chapter looked at the existing body of literature around the broad topic of supporting students at risk of failure due to behavior concerns. This review took legislation and the current
culture of school discipline into consideration, while reporting on the differing philosophies behind student discipline. The body of existing literature on this topic allowed for a synthesis that narrows down the need to add more to the field through an analysis of a particular initiative, its degree of implementation, and to what extent this correlates to the existence in disproportionality in school behavior occurrences of students with higher risk factors, particularly in groups of students that are overrepresented in school discipline data.

In the chapter that follows, I describe the methods that were used to: (a) collect the enrollment and discipline data of participating schools, (b) administer the School-Wide Evaluation Tool (SET) to determine the degree of implementation of PBIS in participating schools, and (c) analyze this data using statistical analyses to respond to the research questions.
CHAPTER 3
METHODOLOGY

The purpose of my study was to understand the correlation between the degree of implementation of PBIS in schools and the representation of various student groups in school discipline occurrences, disaggregated by race/ethnicity, sex, special education status, and socioeconomic status, and to understand if there were significant differences in disproportionality in school discipline when compared to the degree of implementation of PBIS. My study also ascertained the overall number of behavior occurrences in a set of schools all disaggregated by the aforementioned demographic categories looking at the disproportionality differences and spreads within each student group area.

Research Design, Approach and Rationale

My study is a quantitative study that used descriptive statistics, correlation analysis, and Mann-Whitney $U$ tests.

A quantitative methodology was selected because the study focuses on the correlation between the implementation of PBIS and the existence of disproportionality in the number of behavior occurrences based on race/ethnicity, sex, special education status (SPED), and socioeconomic status (SES) (Creswell, 2014). Correlation analysis is a reasonable statistic that was used because it identified the strength and/or directionality in the increase or decrease of the degree of PBIS implementation and the representation of demographic groups in school discipline. Mann-Whitney $U$ tests are reasonable statistical analyses that were used in this research because the means ranks and medians of the variables were compared in order to determine statistical significance (Creswell, 2014).
Population and Sample

The population for my study is all of the general education, public elementary, middle, and high schools within the three school districts that participated in this study. The sample consisted of 16 schools in one Midwest state. For the purpose of this study, a school is defined as a public school that serves students in a general education setting in grades kindergarten through 12th grade. The schools are all of the participating general education schools.

My sample of using the schools within the three selected school districts in one Midwest state is a convenience sample based on proximity and a number of other factors, including access to information and interest in supporting the community of these school districts. Rather than just looking at one district, I chose three specific districts in order to see a range of demographics and levels of implementation. The names of participating schools are kept confidential.

Instrumentation

My study used two data sets and included multiple variables. The first data set is the School-Wide Evaluation Tool (SET) survey to determine the degree of implementation of PBIS. The second data set is a school-level report of student discipline occurrences, defined as documented instances of students not meeting behavior expectations. These documented occurrences were disaggregated by specific demographic categories. Both data sets, as well as specific variables, are detailed in this section.

School-Wide Evaluation Tool

The SET is a survey that is used to evaluate whether or not implementation factors for PBIS are in place (Office of Special Education Programs [OSEP], 2017). The purpose of the SET is for schools to assess their implementation of PBIS, and to use the data from this tool to create an action plan for reaching full implementation. For the purposes of this study, the SET
was used to identify the degree of PBIS implementation for schools. The SET is available to educators or other interested individuals or groups through the OSEP website. The OSEP is a department under the United States Department of Education that manages PBIS implementation in schools. Use of the SET from this portal is free and accessible.

The SET consists of the following seven subscales to measure implementation: (a) Expectations Defined, (b) Expectations Taught, (c) Reward System, (d) Violations System, (e) Monitoring and Evaluating, (f) Management, and (g) District Support (Horner et al., 2004). Subscales are scored on a point system ranging from 0-2 points, and a percent is obtained for each subscale. Finally, the mean of the subscale scores is calculated, providing an overall percentage score. A score of 80% or more is considered to be full implementation (Horner et al., 2004). Each of these subscales includes two or more questions that can be answered using a product, interview, or observation. These products may include the following: a discipline handbook and/or code of conduct, School Improvement Plan, written PBIS implementation plans and/or annual plans for school-wide behavior support, discipline referral forms, social skills instructional materials, and any other artifacts that pertain to the implementation of PBIS.

Questions that are answered through interviews are done by interviewing the building principal, a minimum of 10 staff, the members of the PBIS team, and a minimum of 15 students. Questions that can be answered using observations are done by walking through the school and observing specified items that are around the school.

Although the SET has an interview component that contributes to the overall score, the SET is a quantitative survey tool. There are four separate interview sections in the SET: one section for interviewing the building principal, one section for interviewing at least 10 staff members, one section for interviewing PBIS team members, and one section for interviewing at
least 15 students. The responses from these interview questions generate a specific numeric score that contributes to the overall score of the assigned section of the SET. The overall score of each section is then summed and averaged to designate an overall percentage of implementation.

The SET survey is a validated tool used to determine if schools are implementing PBIS with integrity. This tool was validated through a study using construct validity and sensitivity to changes, and has continued to be tested over time (Horner et al., 2004). A validity test was conducted using Messick’s (1998) unified construct validity. The SET scores were correlated with another PBIS implementation tool and the SET was validated through this process. A test of sensitivity was done using the SET in the same group of schools over a period of six years. The SET was found to be sensitive to changes over time. The SET continues to be tested and monitored (Horner et al., 2004). Reliability tests were done using a test-retest approach. A group of 45 elementary and middle schools from different states were used to test for reliability, and they were all administered the SET at least twice using different observers. The SET was found to be reliable.

For this study, the SET was administered by the PBIS leader in each school building. The SET was reformatted into an electronic survey using Google Forms. Using an electronic survey allowed for feasible data collection.

**Student Information System**

All schools in this study use a computer-based Student Information System (SIS) to store various data. Data include attendance, grades, behavior occurrences, demographic information, and contact information. The SIS was used at each participating school to obtain demographic data as well as the number of discipline occurrences. Demographic data was disaggregated by the following categories: race/ethnicity, sex, SPED, and SES.
The SIS has the ability to store the documentation of student behavior occurrences. Schools use a variety of methods for documenting this data, including documentation for occurrences that are mediated by classroom teachers (classroom managed) and documenting behavior occurrences that require office staff to intervene (office managed). Office staff could include principal, assistant principal, dean of students, behavior interventionist, counselor, or other staff outside of the classroom. The difference between classroom managed behavior and office managed behavior is that classroom managed behavior is dealt with inside of the classroom and an office referral is not entered in the SIS, where office managed behavior tends to be more severe, and an office referral is entered that documents the behavior occurrence in the SIS. For the purposes of this study, behavior occurrences include all office managed entries into the SIS.

Behavior occurrences were clustered into the following behavior occurrence categories: minor, moderate, major. The categories and the types of behaviors under each category were created by using examples of student handbooks in the schools being used in this study. The school handbooks categorize the types of student behavior in similar ways. For my study, I took the descriptions and categorical organization of the types of behaviors from each of the handbooks from the participating schools, and put each type of behavior into one of the three categories based on how the schools have them categorized. The behavior occurrence data was requested as a report from each participating school. The reports are easily generated from any SIS. Table 1 shows each type of behavior occurrence and within which category they fit.
Table 1

Behavior Occurrence Categories

<table>
<thead>
<tr>
<th>Minor Category</th>
<th>Moderate Category</th>
<th>Major Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Disturbance</td>
<td>Disrespect to Others</td>
<td>Arson</td>
</tr>
<tr>
<td>Truancy</td>
<td>Destruction of Property</td>
<td>Fighting</td>
</tr>
<tr>
<td>Use of Profanity</td>
<td>Extortion</td>
<td>Possession/Use of Tobacco</td>
</tr>
<tr>
<td>Bus Misconduct</td>
<td>Gambling</td>
<td>Racial/Ethnic Slurs</td>
</tr>
<tr>
<td>Failure to Report to Office</td>
<td>Larceny</td>
<td>Rape</td>
</tr>
<tr>
<td>Hall Disturbance</td>
<td>Loitering</td>
<td>Sexual Harassment</td>
</tr>
<tr>
<td>Personal Appearance</td>
<td>False Identification</td>
<td>Threats to Harm</td>
</tr>
<tr>
<td>Skipping Class/Detention</td>
<td>Persistent Bullying</td>
<td>Use of an Object/Weapon</td>
</tr>
<tr>
<td>Tardies</td>
<td></td>
<td>Bomb or Similar Threat</td>
</tr>
<tr>
<td>Cell Phone Violation</td>
<td></td>
<td>Possession of Fireworks</td>
</tr>
<tr>
<td>Not Following Directions</td>
<td></td>
<td>Sexual Misconduct</td>
</tr>
<tr>
<td>Internet Use Violation</td>
<td></td>
<td>False Alarm</td>
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<tr>
<td></td>
<td></td>
<td>Assault</td>
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<tr>
<td></td>
<td></td>
<td>Weapon Possession</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Illicit Drug Use/Possession</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alcohol Use/Possession</td>
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<tr>
<td></td>
<td></td>
<td>Gang Activity</td>
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<tr>
<td></td>
<td></td>
<td>Physical Violence with</td>
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<td></td>
<td></td>
<td>Injury</td>
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<td></td>
<td></td>
<td>Physical Violence without</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Injury</td>
</tr>
</tbody>
</table>

Variables

The dependent variable for this study is the spread of disproportionality in student behavior occurrences at each participating school. The spread of disproportionality for this study refers to the value of the distance in values between the disproportionality difference of the identified main group in a demographic category and all other groups within that category. The disproportionality difference refers to the difference between the percentage of students that are enrolled in each demographic category and the percentage of students in that group category that are represented in the number of behavior occurrences, overall, and within each level of severity. The spread of disproportionality is used to operationalize disproportionality in this study, which describes the overrepresentation and underrepresentation of demographic groups in school
discipline data. My study looked at this data by individual school and for all schools together. The method for calculating the disproportionality spread is outlined in the data analysis section of this chapter.

There are certain groups of students who are disciplined at higher rates than other groups (Hamilton, 2019; Lacoe & Manley, 2019; Maag, 2012). Groups of students disproportionally disciplined are African American, Hispanic, and Native American students; male students; students with special education needs as identified by an IEP; and students who have a low SES (Hamilton, 2019; Lacoe & Manley, 2019; Maag, 2012). Since students in these groups are overrepresented in the data pertaining to behavior occurrences, they are focus of this study. The disproportionality spreads of behavioral referrals were broken down by the following demographic categories: (a) race/ethnicity, (b) sex, (c) SPED, and (d) SES of the students in the surveyed schools. In order to identify a spread of disproportionality, a central group within each demographic category was identified by those groups who are not traditionally overrepresented in school discipline data. The central groups in each demographic category are as follows: White, female, non-special education, non-low socioeconomic status.

The independent variable in this study is the degree of implementation of PBIS. Implementation is evident when the following seven components are in place: (a) Expectations Defined, (b) Behavioral Expectations Taught, (c) On-Going System for Rewarding Behavioral Expectations, (d) System for Responding to Behavioral Violations, (e) Monitoring and Decision Making, (f) Management, and (g) District Level Support, which are all identified components of the SET (Boneshefski & Runge, 2014; Pas & Bradshaw, 2012; Robert, 2020; Sugai & Horner, 2006; Sugai & Horner, 2009). The overall SET score for each school was used to identify the degree of PBIS implementation. For the correlation analysis, PBIS implementation was used as a
continuous variable. For the Mann-Whitney $U$ tests analysis, PBIS implementation was grouped into two groups: schools with full implementation and schools without full implementation. Full implementation of PBIS is identified as obtaining an overall SET score of 80% or higher.

**Data Collection Procedures**

My study included 16 schools within three selected school districts in one Midwest state. First, I contacted the district superintendents to inform them of the purpose and steps within my research to ask for permission to participate (see Appendix A). I also provided the superintendents with an overview of my study (see Appendix B). Once permission was acquired, I emailed the principals from each of the buildings within the districts to inform them of instructions for participation (see Appendix C). Within this communication, I included instructions for completing the SET (see Appendix D). The principals delegated the administration of the SET to the PBIS leader in their building. PBIS leaders completed the SET using the instructions provided in the email to principals and posted their information in a Google Form to capture the responses for the SET. Once the SET data was collected from participating schools, I emailed the SET responses to each principal for their records (see Appendix E).

Each school has a PBIS leader in their school. This individual completed the SET survey for their school. There are several steps to administering the SET, and these steps do not need to be completed in any particular order. One step is to collect specific products that will serve as evidence to answer many of the questions on the SET. Another step is to do an onsite observation to look for the indicators of PBIS implementation that are noted in the SET. A third step is to conduct the interviews. The PBIS leader in each school completed all three steps in this process using the electronic SET. The PBIS leader sent me the responses to the questions in the
SET, and I compiled the information and calculated the overall score to determine the degree of implementation and scores within each category of the SET. This information was immediately reported back to each school confidentially.

Either the PBIS leader or a district representative compiled the report for behavior occurrences and enrollment information from their SIS. The enrollment data report included the total enrollment for each school disaggregated by race/ethnicity, sex, special education qualification, and socioeconomic status. The discipline data report included the total behavior occurrences listed by offense type and then disaggregated by race/ethnicity, sex, SPED, and SES. These are reports that are frequently used by school personnel and were easily generated from each school’s SIS. I used the discipline reports and organized the data by school and then by behavior occurrence category based on the reported offense type.

**Data Analysis**

This study is a quantitative study and the data was collected through the SIS and SET survey from participating schools. The SIS was used to represent the total enrollment of students in the participating schools, the breakdown of the students by demographic groups, the total number of behavior occurrences, and the breakdown of behavior occurrences by demographic groups. The SET was used to describe the degree of implementation of PBIS for each participating school. All statistical tests were done using SPSS.

Descriptive statistics were used to describe the sample of schools by describing the enrollment of each school within each student group in each demographic category, including race/ethnicity: American Indian/Alaskan Native, Asian, Black or African American, Hispanic or Latino, Multiple Races, Native Hawaiian or Other Pacific Islander, White; sex: male, female; special education status: qualifies as a special education student, does not qualify as a special
education student; and socioeconomic status: low socioeconomic status, not low socioeconomic status. Descriptive statistics display the frequency, mean, standard deviation, skewness, and kurtosis for the enrollment of each demographic group.

**First Research Question**

The first research question investigated, “To what degree do 16 schools in three school districts in one Midwest state implement PBIS as determined by an overall score on the SET?” The following descriptive statistics were used to describe the results of the SET by individual school and for the data collectively: frequency, mean, standard deviation, skewness, and kurtosis. These specific descriptive statistics were chosen because they provide a response to the research question for each individual school and also display a summary of the PBIS implementation data for all participating schools.

**Second Research Question**

The second research question investigated, “To what degree does disproportionality exist in the number of behavior occurrences in the 16 participating schools, overall and within each behavior occurrence category, when broken down by race/ethnicity, sex, special education status, and socioeconomic status?” Disproportionality differences and a value associated with the spread of disproportionality were calculated to explain the response to this question. Disproportionality difference describes the difference between the percentage of enrollment that represents each group and the percentage of that enrollment group represents within all of the behavior occurrences. For example, if Asian students make up 20% of a school’s total enrollment, and 30% of the total behavior occurrences, the disproportionality difference for Asians within the total number of behavior occurrences for that school would be +10. In a perfect situation, the disproportionality difference is zero, meaning that the percentage of students in each
demographic group for the total number of behavior occurrences is the same as, or proportionate to the percentage of that group that makes up the total enrollment of the school. The greater the disproportionality difference, the greater the existence of disproportionality in that school. A disproportionality difference was calculated for each demographic group for the overall number of behavior occurrences and within each behavior occurrence category.

The spread of disproportionality is used to display the distance between values from the disproportionality difference of the central group within a demographic category when compared to the other groups in that category. The spread of disproportionality is the value that is used to operationalize the existence of disproportionality in this study, and describes the overrepresentation and underrepresentation of demographic groups in school discipline data. The central groups were determined by looking at the existing literature on groups that are overrepresented in discipline data. The central groups are the groups that are traditionally not overrepresented in school discipline, and for this study, are the following groups: White, female, non-SPED, non-low SES.

The disproportionality spread compares White to non-White students, female to male students, non-special education students to special education students, and non-low socioeconomic students to low socioeconomic students. The disproportionality spread was calculated by subtracting the sum of the disproportionality differences of all non-central groups within a demographic category from the disproportionality difference of the central group. For example, the disproportionality difference for total number of behavior occurrences for White students in School 1 is -14. The sum of the disproportionality differences for the total number of behavior occurrences for all non-White students in School 1 is 14 (American Indian 0, Asian -1, African American 9, Hispanic -2, Other Pacific Islander -1, Multiple Races 9). The
disproportionality spread for total number of behavior occurrences for White to non-White students in School 1 is +28, indicating that non-White students are overrepresented in this school’s discipline data where White students are underrepresented in this school’s discipline data with a spread in between these representations of +28. In a perfect situation, there would be no spread in disproportionality. A positive spread value shows that there is a gap between the underrepresentation of the central group and the overrepresentation of the non-central group(s). Likewise, a negative spread value shows that there is a gap between the overrepresentation of the central group and the underrepresentation of the non-central group(s). Greater spread values display larger gaps when comparing the central group in a demographic category to the other group(s) in that category. The disproportionality spread is important in comparing the existence of disproportionality across schools when looking at demographic groups that are traditionally overrepresented in school discipline data to those groups that are not traditionally overrepresented in this data.

Tables were created to document the disproportionality differences for each demographic group in each school for the overall number of behavior occurrences and for each behavior occurrence category. The disproportionality spread was calculated using the information in the tables for each school and is used in the statistical analyses. A table was also created to display the disproportionality spread for each demographic category in each school for the overall number of behavior occurrences and within behavior occurrence category.

**Third Research Question**

The third research question investigated, “To what extent does the implementation of PBIS, as measured by the SET score, correlate with the spread of disproportionality in school behavior occurrences when broken down by race/ethnicity, sex, special education status, and
socioeconomic status, overall and within each behavior occurrence category?” Correlation analysis was used to identify the correlation between the implementation of PBIS, as measured by the overall SET score, and the existence of disproportionality, represented by the spread of disproportionality between White and non-White students, female and male students, non-special education students and special education students, and non-low socioeconomic status students and low socioeconomic status students, for the overall number of behavior occurrences and the number of behavior occurrences in each category. Categories are minor, moderate, and major. The correlation analysis looked at the existence of and analyzed the strength and direction between the variables. The strength and direction of the correlation are represented by the Pearson Correlation Coefficient (r value), and the statistical significance is represented by the p-value. The original intent of my study was to pursue regression analysis. However, the number of participating schools changed through the process of my data collection. Although there were not enough data points to generate a line of regression in the output, the correlation analysis shows important information to respond to this research question and to provide context to respond to the fourth research question.

**Fourth Research Question**

The fourth and final research question investigated, “To what extent does PBIS implementation display a significant difference in the spread of disproportionality in the total number of behavior occurrences and within each behavior occurrence category in the participating schools when comparing White to non-White students, female to male students, non-special education students to special education students, and non-low socioeconomic students to low socioeconomic students?” Mann-Whitney U tests were used to identify if there is a significant difference in the disproportionality spreads of behavior occurrences when schools
fully implement PBIS and when they do not fully implement PBIS. Full PBIS implementation is indicated by a SET score of 80% or higher. Within the participating 16 schools, nine of these schools had a SET score of less than 80% and seven schools had a SET score of 80% or higher. Mann-Whitney $U$ tests were conducted to compare the mean ranks, medians, and $U$ values of the spread of disproportionality for each demographic category in schools with full implementation compared to schools without full implementation. The Mann-Whitney $U$ test was selected as the best non-parametric alternative to respond to the research question using a ranked dependent variable. The independent variable is PBIS implementation with two groups: schools with full implementation and schools without full implementation. The dependent variable is the spread of disproportionality broken down by demographic categories: White to non-White, female to male, non-special education to special education, and non-low socioeconomic status to low socioeconomic status. The results of the Mann-Whitney $U$ test show the following values: mean ranks, $U$ value, and a $p$-value indicating statistical significance.

My original plan was to run multiple one sample $t$-tests to compare the means of disproportionality against zero, which is the ideal value of disproportionality. Once my data was collected I could see the need for comparing the spread of disproportionality to the implementation of PBIS, specifically to look at the differences in the means for schools with full implementation of PBIS and schools without full implementation of PBIS. I then determined that the best statistical test was to run independent samples $t$-tests to determine the significant difference. However, due to the violations of assumptions in the tests for normality, a non-parametric alternative to independent samples $t$-test was conducted to compare the two groups. The Mann-Whitney $U$ test generated the data to appropriately respond to this research question.
As with many non-parametric tests, the Mann-Whitney $U$ test compares the median values in two groups. This statistical test also generates mean rank values for groups (schools that fully implement PBIS and schools that do not fully implement PBIS), a $U$ value which provides a summary of the overlap in disproportionality spreads in schools that fully implement PBIS and those that do not, and a $p$-value indicating the statistical significance. The culminating $p$-value is inclusive of all of the values generated in the Mann-Whitney $U$ test and responds directly to the research question, which investigates the extent to which PBIS implementation creates a significant difference in the spread of disproportionality between schools that fully implement PBIS and those that do not fully implement PBIS. Therefore, even if the results show differences in any of the values generated from the Mann-Whitney $U$ test (medians, means, mean ranks, $U$-values), it is the $p$-value that actually responds specifically to the research question.

**Crosswalk Table**

Table 2 displays each of the research questions, the tool used to gain information to answer these questions, and the type of data analysis used for each research question.
<table>
<thead>
<tr>
<th>Research Question</th>
<th>Tool Used</th>
<th>Variable</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what degree do 16 schools in three school districts in one Midwest state implement PBIS as determined by an overall score on the SET?</td>
<td>SET</td>
<td>Overall SET Score</td>
<td>Descriptive Statistics</td>
</tr>
<tr>
<td>To what degree does disproportionality exist in the number of behavior occurrences in the 16 participating schools, overall and within each behavior occurrence category, when broken down by race/ethnicity, sex, special education status, and socioeconomic status?</td>
<td>SIS</td>
<td>Disproportionality differences overall, disproportionality differences within each behavior occurrence category, race/ethnicity, sex, special education qualification, socioeconomic status</td>
<td>Descriptive Statistics</td>
</tr>
<tr>
<td>To what extent does the implementation of PBIS as measured by the SET score correlate with the spread of disproportionality in school behavior occurrences when broken down by race/ethnicity, sex, special education status, and socioeconomic status, overall and within each behavior occurrence category?</td>
<td>SET &amp; SIS</td>
<td>Overall SET score, disproportionality differences overall, disproportionality differences within each behavior occurrence category, spread of disproportionality, race/ethnicity, sex, special education qualification, socioeconomic status</td>
<td>Correlation</td>
</tr>
<tr>
<td>To what extent does PBIS implementation display a significant difference in the spread of disproportionality in the total number of behavior occurrences and within each behavior occurrence category in the participating schools when comparing White to non-White students, female to male students, non-special education students to special education students, and non-low socioeconomic students to low socioeconomic students?</td>
<td>SET &amp; SIS</td>
<td>PBIS implementation, spread of disproportionality</td>
<td>Mann-Whitney U</td>
</tr>
</tbody>
</table>
Limitations and Delimitations

A limitation to this study is that the data being compiled could be based on the subjective opinion of the person collecting the data; in particular, the responses to the SET could be based on the perceptions of the person responding. In addition to the SET tool, the SIS being used to obtain demographic and discipline data only reports the information entered. If there are discipline occurrences that are not entered, the study does not consider this information.

My study is also limited by the number of participating schools. My original plan for statistical analyses was to conduct regression analysis and multiple one sample $t$-tests with 25 participating schools. Nine of the participating schools reported data that was unusable for my study. Rather than compromising the integrity of my research by using this data, I identified the value reported by the 16 participating schools and interpreted what the data provided and its contribution to the broader literature.

Additionally, the tests for assumptions for normality showed some violations. Due to this, an adjustment was made to use a non-parametric alternative to the independent samples $t$-tests. Mann-Whitney $U$ tests were conducted to take these violations into consideration, and provided the appropriate information to respond to the final research questions. Although my plan for data analysis was adjusted slightly, the analysis provides valid and important data to contribute to the existing body of literature on this topic.

This study is delimited by the choices of what to analyze. The study looks at 16 schools in one Midwest state. There may be different analyses gained from looking at schools in different states or different regions. Also, this study focuses on PBIS as the only initiative, and looking its correlation with disproportionality in school discipline. There are numerous other initiatives that may have different correlations with disproportionality.
There are potential threats to validity in this study that will be responded to in a way that will attempt to make the threats insignificant. According to Creswell (2014), maturation can impact a study where there is the possibility that participants could change or mature during the course of the study, and these changes could influence the results. Since this study looks at a full year span of data from participating schools, there is the possibility of a changing enrollment during this time. In response to this, the participating schools all potentially have the same likelihood of this event occurring. Another potential threat to validity is selection. Creswell explains that selection can impact a study when individuals in the study could have predisposing characteristics that might influence the outcome. Chapter 5 will address the issue of selection, noting that while a different selection could have yielded different results, the current selection identifies the need to further study this topic.

**Chapter 3 Closure**

This chapter identified that this study is a non-experimental quantitative study. Data was collected using the SIS and SET from participating schools. Data was analyzed using descriptive statistics, correlation analysis, and Mann-Whitney $U$ tests. The analysis focuses on the correlation between PBIS implementation and the issue of disproportionality in student behavior occurrences in schools, as well as the statistical significance of the existence of disproportionality in school discipline in schools that implement PBIS and schools that do not implement PBIS. Let us now turn to the results of this study in Chapter 4.
CHAPTER 4
RESULTS

This study analyzes the correlation between the implementation of one behavior initiative, Positive Behavioral Interventions and Supports (PBIS), in K-12 public schools and the spread of disproportionality in reported school discipline occurrences disaggregated by race/ethnicity, sex, special education status (SPED), and socioeconomic status (SES), broken down the overall number of behavior occurrences and the occurrences within each category (minor, moderate, and major). Additionally, this study profiles the difference in the existence of disproportionality when comparing schools that fully implement PBIS to schools that do not fully implement PBIS.

In order to respond to the research questions, 26 schools in one Midwest state were invited to participate in the study. The invitation requested that each school complete the School-Wide Evaluation Tool (SET) survey at the beginning of the school year, and then provide a report of enrollment and behavior occurrences at the end of the school year. Twenty-two schools initially participated in the study by completing the SET at the beginning of the school year. However, the enrollment and behavior occurrence reports provided by six of those schools were not presented in a valid manner, and, therefore, not used for this study. The data from 16 schools were used to respond to the research questions. The following research questions were analyzed for this study:

1. To what degree do 16 schools in three school districts in one Midwest state implement PBIS as determined by an overall score on the SET?
2. To what degree does disproportionality exist in the number of behavior occurrences in the 16 participating schools, overall and within each behavior occurrence category, when broken down by race/ethnicity, sex, special education status, and socioeconomic status?

3. To what extent does the implementation of PBIS as measured by the SET score correlate with the spread of disproportionality in school behavior occurrences when broken down by race/ethnicity, sex, special education status, and socioeconomic status, overall and within each behavior occurrence category?

4. To what extent does PBIS implementation display a significant difference in the spread of disproportionality in the total number of behavior occurrences and within each behavior occurrence category in the participating schools when comparing White to non-White students, female to male students, non-special education students to special education students, and non-low socioeconomic students to low socioeconomic students?

**Description of the Population**

Sixteen schools participated in this study, including 10 elementary schools that serve students in either kindergarten through second grade, kindergarten through fourth grade, kindergarten through fifth grade, or third through fifth grade; three middle schools that serve students in either fifth through eighth grades or sixth through eighth grades; and three high schools that serve students in ninth through twelfth grade. The total number of students used in this study was 7,124 students, with 3,251 students in elementary schools, 1,777 students in middle schools, and 2,096 students in high schools.

Table 3 displays the breakdown of enrollment by the demographic categories used in this study, including the range, mean, and standard deviation. An additional column was added to the table to depict the percentage of the total enrollment represented by each demographic group.
This percentage is based on the mean enrollment for each group. This percentage is valuable because it helps to describe the representation of specific demographic groups in the enrollment, which will later be compared to the representation of demographic groups within behavior occurrences to determine the disproportionality differences and spreads.

**Table 3**

*Enrollment by Demographic Group*

<table>
<thead>
<tr>
<th>Demographic Groups</th>
<th>N</th>
<th>Range</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
<th>% of Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>7124</td>
<td>886</td>
<td>155</td>
<td>1041</td>
<td>445.0</td>
<td>263.0</td>
<td>100</td>
</tr>
<tr>
<td>AI</td>
<td>42</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>2.6</td>
<td>2.9</td>
<td>0.5</td>
</tr>
<tr>
<td>Asian</td>
<td>158</td>
<td>67</td>
<td>0</td>
<td>67</td>
<td>9.8</td>
<td>17.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Black/AA</td>
<td>1531</td>
<td>408</td>
<td>6</td>
<td>414</td>
<td>95.6</td>
<td>100.0</td>
<td>21.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>611</td>
<td>141</td>
<td>3</td>
<td>144</td>
<td>38.2</td>
<td>35.2</td>
<td>8.6</td>
</tr>
<tr>
<td>OPI</td>
<td>14</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0.0</td>
<td>1.1</td>
<td>0.2</td>
</tr>
<tr>
<td>White</td>
<td>4113</td>
<td>718</td>
<td>36</td>
<td>754</td>
<td>257.0</td>
<td>220.0</td>
<td>57.7</td>
</tr>
<tr>
<td>Multi-Race</td>
<td>655</td>
<td>115</td>
<td>10</td>
<td>125</td>
<td>40.9</td>
<td>27.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Female</td>
<td>3423</td>
<td>438</td>
<td>63</td>
<td>501</td>
<td>214.0</td>
<td>130.0</td>
<td>48.1</td>
</tr>
<tr>
<td>Male</td>
<td>3701</td>
<td>448</td>
<td>92</td>
<td>540</td>
<td>231.0</td>
<td>134.0</td>
<td>52.0</td>
</tr>
<tr>
<td>SPED</td>
<td>1025</td>
<td>134</td>
<td>26</td>
<td>160</td>
<td>64.1</td>
<td>35.1</td>
<td>14.4</td>
</tr>
<tr>
<td>NonSPED</td>
<td>6099</td>
<td>775</td>
<td>106</td>
<td>881</td>
<td>381.0</td>
<td>232.0</td>
<td>85.6</td>
</tr>
<tr>
<td>Low SES</td>
<td>4444</td>
<td>751</td>
<td>18</td>
<td>769</td>
<td>278.0</td>
<td>174.0</td>
<td>62.4</td>
</tr>
<tr>
<td>NonLowSES</td>
<td>2680</td>
<td>553</td>
<td>12</td>
<td>565</td>
<td>168.0</td>
<td>167.0</td>
<td>37.6</td>
</tr>
</tbody>
</table>

*Note:* Percent of enrollment is based on mean enrollment for each group. AI = American Indian; AA = African American; OPI = Hawaiian Pacific/Other Pacific Islander; SPED = Special Education; SES = Socioeconomic Status.

The standard deviations for each group indicate that there is a large amount of variation in enrollment numbers and percentage of representation of demographic groups depending on the individual school. This is beneficial to the results. The research focuses on the issue of disproportionality in school discipline, and a diverse representation of demographic groups in school enrollment allows for an analysis of this issue with a variety of types of schools.
Within each demographic category there are multiple groups. Also within each category, a central group was selected based on current research indicating demographic groups that are historically underrepresented and/or proportionately represented in school discipline data. The central group of each category will later be compared to the combination of all non-central groups to determine the spread of disproportionality. In the race/ethnicity category the groups are American Indian, Asian, Black/African American, Hispanic, Native Hawaiian/Other Pacific Islander, White, and Multiple Races, and the central group is White. In the sex category, the groups are female and male, and the central group is female. In the special education category, the groups are special education and non-special education, and the central group is non-special education. In the socioeconomic category the groups are low socioeconomic and non-low socioeconomic and the central group is non low socioeconomic. It is noteworthy to look at the mean enrollment, standard deviation, and mean percentage of enrollment for each central group (White: $M = 257$, $SD = 219$, $% = 57.7$; female: $M = 214$, $SD = 130$, $% = 48.1$; non-SPED: $M = 381$, $SD = 232$, $% = 85.6$; non-low SES: $M = 168$, $SD = 167$, $% = 37.6$).

**Research Question One**

In order to address research question one, descriptive statistics were performed on the SET scores calculated for all 16 participating schools. These scores are displayed in Table 4.
The overall SET score value indicates the degree of implementation of PBIS in each school. The SET scores represent a percentage based on the responses of the survey ($M = 76.7$ represents 76.7% on a 100 point scale). Full implementation of PBIS is indicated by a score of 80 or greater and non-full implementation is indicated by a score of less than 80. The scores for all 16 participating schools ranged from 41.7 to 98.3 ($M = 76.7$, $SD = 15.8$). Nine of these schools’ overall SET scores show that the schools did not fully implement PBIS and seven of the schools’ scores indicate that they did fully implement PBIS. The grouping of schools that had full implementation and those that did not have full implementation will be used to respond to the fourth research question. The skewness and kurtosis show that the SET scores display a normal distribution. Standard deviation and variance show that the SET scores are approximately 15 points greater or less than the reported mean of 76.7. It makes sense for this data set to have a broader variance because the degree of implementation is different based on the individual school. Additionally, having a variety of implementation scores allows for a deeper exploration of the correlation between the degree of implementation and the spread of disproportionality in behavior occurrences which is reported in response to the third research question.

### Table 4

**SET Scores**

<table>
<thead>
<tr>
<th>Descriptive Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>76.7</td>
</tr>
<tr>
<td>SE</td>
<td>3.944</td>
</tr>
<tr>
<td>SD</td>
<td>15.8</td>
</tr>
<tr>
<td>Variance</td>
<td>248.00</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.70</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.37</td>
</tr>
<tr>
<td>Range</td>
<td>56.60</td>
</tr>
<tr>
<td>Min.</td>
<td>41.70</td>
</tr>
<tr>
<td>Max.</td>
<td>98.30</td>
</tr>
</tbody>
</table>
Research Question Two

In order to respond to research question two, a number of calculations and descriptive statistics were performed on the overall number of behavior occurrences and number of occurrences within each category (minor, moderate, major) when broken down by race/ethnicity, sex, SPED, and SES. Prior to performing descriptive statistics, numerous calculations were done to first identify the differences in disproportionality and then to identify the spread of disproportionality. The spread of disproportionality is the value used to operationalize the existence of disproportionality in this study. These values were used to conduct the descriptive statistics.

In order to determine the disproportionality differences for the groups within each demographic category the first step was to calculate the percentage of the total enrollment for each demographic group. The next step was to calculate the percentage that each demographic group represents within the total number of behavior occurrences and within each behavior occurrence category. The disproportionality difference was calculated for each demographic group within the total number of behavior occurrences and within each behavior occurrence category by subtracting the percentage of behavior occurrences from the percentage of enrollment. A positive value for disproportionality difference indicates an overrepresentation of a demographic group within the number of behavior occurrences, and a negative value shows an underrepresentation. Overrepresentation and underrepresentation indicate the existence of disproportionality. In an ideal situation the value would be zero, indicating no existence of disproportionality.

For example, in School 1, Black/African American students make up 58% of the total enrollment and 67% of the overall number of behavior occurrences. When looking at the overall
number of behavior occurrences, the disproportionality difference for Black/African American students in this school is 9. This value indicates an overrepresentation of Black/African American students in the overall number of behavior occurrences for this school.

The spread of disproportionality, or disproportionality spread, is another value that was calculated to respond to the second research question. The disproportionality spread is the distance between the values of disproportionality differences from the central group within a demographic category to the sum of disproportionality differences in all other groups in that category. The disproportionality spread provides a summative value of the existence of disproportionality for an entire demographic category within the overall number of behavior occurrences and within each behavior occurrence category. Larger values of the spread indicate a greater existence in either the overrepresentation of underrepresentation of groups within a demographic category. A positive value indicates that the non-central groups within a demographic category are overrepresented in the number of behavior occurrences, and a negative value indicates that the central group is overrepresented in the number of behavior occurrences.

For example, in School 1, the disproportionality difference for the total number of behavior occurrences for White students is -14, indicating that White students are underrepresented in the total number of behavior occurrences. The combined disproportionality difference of all other groups within race/ethnicity (American Indian = 0, Asian = -1, Black/African American = +9, Hispanic = +2, Native Hawaiian/Other Pacific Islander = +1, Multiple Races = +9) is +14. The spread of disproportionality for White to non-White students for the total number of behavior occurrences in School 1 is +28, indicating that non-White students are overrepresented in the total number of behavior occurrences for this school. The value of the disproportionality spread shows the overrepresentation or underrepresentation when
comparing groups within a demographic category. Additionally, comparing these values from one school to others shows the degree to which disproportionality exists.

Table 5 displays the descriptive statistics for the aggregated values of all 16 participating schools for the disproportionality differences and spreads for the total number of behavior occurrences and within each behavior occurrence category for the race/ethnicity category. The spread of disproportionality from White to non-White students is greatest when looking at behavior occurrences that fall into the overall category (\(M = 10, SD = 19\)) and the major category (\(M = 12.4, SD = 18.9\)). The data in both categories are not skewed but both categories have excessive negative kurtosis. The majority of the data showing the spread of disproportionality for White to non-White students for overall and major behavior occurrences falls on the positive side (greater than zero) for both categories, but the data for both categories are spread out. The interpretation of this is that there is an overrepresentation of non-White students in overall and major behavior occurrences. The mean of the spread of disproportionality of minor category behavior occurrences (\(M = 1.50, SD = 28.8\)) and moderate category of behavior occurrences (\(M = -0.12, SD = 34.2\)) shows a value close to zero, indicating that the existence of disproportionality is much lower in these areas than in overall and major.
### Table 5

**Disproportionality by Race/Ethnicity**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SE</th>
<th>SD</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD Overall</td>
<td>16</td>
<td>38</td>
<td>-25</td>
<td>13</td>
<td>-5.0</td>
<td>2.38</td>
<td>9.5</td>
<td>90.31</td>
<td>0.10</td>
<td>-25</td>
</tr>
<tr>
<td>White</td>
<td>16</td>
<td>38</td>
<td>-13</td>
<td>25</td>
<td>5.0</td>
<td>2.38</td>
<td>9.5</td>
<td>90.31</td>
<td>-0.10</td>
<td>-13</td>
</tr>
<tr>
<td>NonWhite</td>
<td>16</td>
<td>76</td>
<td>-26</td>
<td>50</td>
<td>10.0</td>
<td>4.75</td>
<td>19.0</td>
<td>361.23</td>
<td>-0.10</td>
<td>-26</td>
</tr>
<tr>
<td>DS Overall</td>
<td>16</td>
<td>52</td>
<td>-25</td>
<td>27</td>
<td>-0.8</td>
<td>3.60</td>
<td>14.4</td>
<td>207.13</td>
<td>0.13</td>
<td>-25</td>
</tr>
<tr>
<td>DD Minor</td>
<td>16</td>
<td>52</td>
<td>-27</td>
<td>25</td>
<td>0.8</td>
<td>3.60</td>
<td>14.4</td>
<td>207.13</td>
<td>-0.13</td>
<td>-27</td>
</tr>
<tr>
<td>White</td>
<td>16</td>
<td>104</td>
<td>-54</td>
<td>50</td>
<td>1.5</td>
<td>7.19</td>
<td>28.8</td>
<td>827.69</td>
<td>-0.13</td>
<td>-54</td>
</tr>
<tr>
<td>NonWhite</td>
<td>16</td>
<td>63</td>
<td>-26</td>
<td>37</td>
<td>0.1</td>
<td>4.27</td>
<td>17.1</td>
<td>291.52</td>
<td>0.95</td>
<td>-26</td>
</tr>
<tr>
<td>DS Minor</td>
<td>16</td>
<td>63</td>
<td>-37</td>
<td>26</td>
<td>-0.1</td>
<td>4.27</td>
<td>17.1</td>
<td>291.52</td>
<td>-0.95</td>
<td>-37</td>
</tr>
<tr>
<td>DD Mod</td>
<td>16</td>
<td>126</td>
<td>-74</td>
<td>52</td>
<td>-0.1</td>
<td>8.55</td>
<td>34.2</td>
<td>1168.77</td>
<td>-0.95</td>
<td>-74</td>
</tr>
<tr>
<td>White</td>
<td>16</td>
<td>33</td>
<td>-26</td>
<td>7</td>
<td>-6.2</td>
<td>2.37</td>
<td>9.5</td>
<td>89.47</td>
<td>-0.36</td>
<td>-26</td>
</tr>
<tr>
<td>NonWhite</td>
<td>16</td>
<td>66</td>
<td>-14</td>
<td>52</td>
<td>12.4</td>
<td>4.73</td>
<td>18.9</td>
<td>357.89</td>
<td>0.36</td>
<td>14</td>
</tr>
</tbody>
</table>

*Note: DD=Disproportionality Difference, DS=Disproportionality Spread from White to non-White, Mod=Moderate.*

Table 6 displays the descriptive statistics for the aggregated values of all 16 participating schools for the disproportionality differences and spreads for the total number of behavior occurrences and within each behavior occurrence category for the sex category. The means for the disproportionality spreads when broken down by sex are much closer in value than comparing the means with race/ethnicity (overall: $M = 43.9$, $SD = 19.5$; low: $M = 49.4$, $SD = 28.1$; moderate: $M = 36.8$, $SD = 26.9$; severe: $M = 45.9$, $SD = 19.3$). This indicates that the underrepresentation of females and overrepresentation of males in school behavior occurrences are more consistent across schools, although there is still a large amount of variation in the spread of disproportionality from school to school. The categories of overall, low, and severe do
not have skewness or kurtosis in the distribution. The moderate level of severity shows slight negative skewness and excessive kurtosis, indicating that the disproportionality spread from females to males is more spread out when compared to the collection of data in the other levels of severity and has data with greater values. Although the skewness and kurtosis are present, the data still show an overrepresentation of male students in behavior occurrences overall and within each level of severity.

Table 6

Disproportionality by Sex

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SE</th>
<th>SD</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>DD Overall</td>
<td>16</td>
<td>36</td>
<td>-40</td>
<td>-4</td>
<td>-22.0</td>
<td>2.44</td>
<td>9.8</td>
<td>95.321</td>
<td>0.13</td>
<td>-0.39</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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Note: DD=Disproportionality Difference, DS=Disproportionality Spread from Female to non-Female (male), Mod=Moderate.
Table 7 displays the descriptive statistics for the aggregated values of all 16 participating schools for the disproportionality differences and spreads for the total number of behavior occurrences and within each behavior occurrence category for the SPED category.

### Table 7

**Disproportionality by Special Education Status**

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*Note: DD=Disproportionality Difference, DS=Disproportionality Spread from non-special education to special education, Mod=Moderate.*

The disproportionality spreads overall and within each behavior occurrence category are all positive values, indicating that SPED students are overrepresented in the behavior occurrence data across all participating schools (overall: $M = 26.1$, $SD = 24.0$; minor: $M = 42.4$, $SD = 58.9$; moderate: $M = 27.4$, $SD = 29.1$; major: $M = 30.6$, $SD = 25.3$). The spread of disproportionality is greatest when looking at behavior occurrences that fall into the minor category. Positive skewness exists in the overall number of behavior occurrences and within the minor and
moderate categories, and positive kurtosis exists in the overall number of behavior occurrences and within the moderate category. The mean of disproportionality spreads in the SPED category is greater than the mean of disproportionality spreads for race/ethnicity and less than the mean of disproportionality spreads for sex.

Table 8 displays the descriptive statistics for the aggregated values of all 16 participating schools for the disproportionality differences and spreads for the total number of behavior occurrences and within each behavior occurrence category for the SES category. All of the means of the spread of disproportionality are positive in this category, indicating that students with low SES are overrepresented in the behavior occurrence data for participating schools (overall: $M = 22.4$, $SD = 55.2$; minor: $M = 28.1$, $SD = 57.3$; moderate: $M = 14.0$, $SD = 73.1$; major: $M = 25.1$, $SD = 54.1$). The spread of disproportionality is greatest within the minor category and least within the moderate category. Positive skewness exists in the overall category and within minor and major categories. Positive kurtosis exists overall and within moderate and major categories.
Table 8

Disproportionality by Socioeconomic Status

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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DS Major</td>
<td>16</td>
<td>200</td>
<td>-26</td>
<td>174</td>
<td>25.1</td>
<td>13.5</td>
<td>54.1</td>
<td>2925</td>
<td>1.57</td>
<td>2.63</td>
</tr>
</tbody>
</table>

Note: DD=Disproportionality Difference, DS=Disproportionality Spread from non-low socioeconomic status to low socioeconomic status, Mod=Moderate.

Research Question Three

In order to respond to research question three, a correlation analysis was done looking at the correlation between the SET scores and disproportionality spreads of White to non-White students, female to male students, non-SPED students to SPED students, and non-low SES students to low SES students. A correlation coefficient was generated for the overall number of behavior occurrences and each behavior occurrence category for the disproportionality spreads within each demographic category.

Pearson’s coefficient \( r \) was used as a statistical approach to test for the strength and direction between the two variables in this study: PBIS implementation, which is represented by the overall SET score, and disproportionality spreads. The results of this analysis are displayed in Table 9. For this study, ideal results would show a strong, negative correlation, which is
interpreted as stronger implementation of PBIS results in little or no existence of disproportionality in the reporting of behavior occurrences when broken down by demographic categories. The results of this study did not show this to be true. The majority of demographic categories showed no correlation or very weak correlation. A weak positive correlation exists between PBIS implementation and the spread of disproportionality between females and males for minor category behavior occurrences, \( r(14) = 0.36 \), PBIS implementation and the spread of disproportionality between females and males for major category behavior occurrences \( r(14) = 0.28 \), and PBIS implementation and the spread of disproportionality between non-SPED students and SPED students for major category behavior occurrences \( r(14) = 0.22 \). A weak negative correlation exists between PBIS implementation and the spread of disproportionality between non-SPED students and SPED students for both minor \( r(14) = -0.23 \) and moderate \( r(14) = -0.35 \) behavior occurrences, and with PBIS implementation and the spread of disproportionality between non-low SES students and low SES students for both minor \( r(14) = -0.34 \) and moderate \( r(14) = -0.23 \) behavior occurrences. A moderate positive correlation exists between PBIS implementation and the spread of disproportionality between female and male students for the overall number of behavior occurrences \( r(14) = 0.41 \). When looking at the correlation coefficients within demographic groups broken down by the overall number of behavior occurrences and each behavior occurrence category, there are no consistent patterns to be able to draw themes to represent a correlation between the variables. The implications of the lacking patterns are discussed in Chapter 5.
Table 9

Correlation of SET Scores with Disproportionality Spreads

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall R/E</td>
<td>.01</td>
</tr>
<tr>
<td>Minor R/E</td>
<td>.06</td>
</tr>
<tr>
<td>Moderate R/E</td>
<td>.06</td>
</tr>
<tr>
<td>Major R/E</td>
<td>-.08</td>
</tr>
<tr>
<td>Overall Sex</td>
<td>.41</td>
</tr>
<tr>
<td>Minor Sex</td>
<td>.36</td>
</tr>
<tr>
<td>Moderate Sex</td>
<td>.13</td>
</tr>
<tr>
<td>Major Sex</td>
<td>.28</td>
</tr>
<tr>
<td>Overall SPED</td>
<td>.08</td>
</tr>
<tr>
<td>Minor SPED</td>
<td>-.23</td>
</tr>
<tr>
<td>Moderate SPED</td>
<td>-.35</td>
</tr>
<tr>
<td>Major SPED</td>
<td>.22</td>
</tr>
<tr>
<td>Overall SES</td>
<td>-.19</td>
</tr>
<tr>
<td>Minor SES</td>
<td>-.34</td>
</tr>
<tr>
<td>Moderate SES</td>
<td>-.23</td>
</tr>
<tr>
<td>Major SES</td>
<td>-.18</td>
</tr>
</tbody>
</table>

*Note: R/E describes race/ethnicity; Overall, Minor, Moderate, Major describe the overall number of behavior occurrences and the behavior occurrence categories (minor, moderate, major).*

**Research Question Four**

Initially, it was determined that independent samples $t$-tests would be ran to respond to research question four. Tests for assumptions with normality and homogeneity were ran using the disproportionality spread for the overall number of behavior occurrences for White to non-White students, female to male students, non-SPED students to SPED students, and non-low SES students to low SES students. The tests for assumptions were done using the overall number of behavior occurrences and not for each behavior occurrence category since the categories are encompassed within the overall number of occurrences. For tests of homogeneity, the demographic categories race/ethnicity ($p = .650$), sex ($p = .480$), and SES ($p = .220$) were met. The assumption of homogeneity for the SPED category was violated ($p = .030$). For tests of
normality, assumptions were met according to $p$-values for race/ethnicity ($p = .250$), sex ($p = .740$), and SES ($p = .090$), and assumptions were violated for SPED ($p = .010$).

Due to the violation of assumptions, the Mann-Whitney $U$ test was used as a non-parametric alternative to the independent samples $t$-test. This non-parametric alternative was selected because it compares the existence of disproportionality between schools that fully implement PBIS and schools that do not fully implement PBIS, just as independent samples $t$-tests would do, but takes the small sample size into consideration. The Mann-Whitney $U$ test allows for the comparison to take place given the non-normal distribution of the SPED category.

To evaluate the difference in disproportionality spreads for schools that fully implemented PBIS and schools that did not fully implement PBIS, Mann-Whitney $U$ tests were conducted. The null hypothesis states that the medians for the spreads of disproportionality for each demographic category, overall and within category of behavior occurrences, will be the same for schools that did fully implement PBIS and for schools that did not fully implement PBIS.

$$H_0 : Mdn_1 = Mdn_2$$

$$H_1 : Mdn_1 \neq Mdn_2$$

The disproportionality spreads were measured by comparing White to non-White students, female to male students, non-SPED students to SPED students, and non-low SES students to low SES students for the overall number of behavior occurrences and the behavior occurrences within each category (minor, moderate, major). Table 10 shows the output for this test. The $U$ values range from 14.0-30.5, indicating that there is a lot of overlap in the disproportionality spreads with schools that fully implemented PBIS and those that did not. A Mann-Whitney $U$ test indicated no significant difference between the spread of
disproportionality from White to non-White students for schools that did not fully implement PBIS ($Mdn = 10$) and schools that did fully implement PBIS ($Mdn = 16$), $U = 29.0$, $p = .791$. The same findings exist for every behavior occurrence category for race/ethnicity. A Mann-Whitney $U$ test indicated no significant difference between the spread of disproportionality from female to male students for schools that did fully implement PBIS ($Mdn = 38$) and those that did fully implement PBIS ($Mdn = 50$), $U = 20.0$, $p = .220$. The same findings exist for every behavior occurrence category for sex. A Mann-Whitney $U$ test indicated no significant difference between the spread of disproportionality from non-SPED students to SPED students for schools that did not fully implement PBIS ($Mdn = 14$) and schools that did fully implement PBIS ($Mdn = 30$), $U = 22.0$, $p = .314$. The same findings exist for every behavior occurrence category for SPED. A Mann-Whitney $U$ test indicated no significant difference between the spread of disproportionality from non-low SES students to low SES students for schools that did not fully implement PBIS ($Mdn = -2$) and those that did fully implement PBIS ($Mdn = 14$), $U = 27.0$, $p = .634$. The same findings exist for every behavior occurrence category for SES.

Although there are differences in the compared medians, there are very small differences, if any, in the disproportionality spreads of schools with full PBIS implementation and schools without full implementation when considering the $p$-values for each category. None of the $p$-values for any category indicate that there exists a significant difference between the schools that implemented PBIS and those that did not implement. The $p$-value is the statistic of focus for this test because it considers all of the values generated by the test to identify if there is a statistical difference in the existence of disproportionality in schools that fully implemented PBIS and schools that did not fully implement PBIS. This test showed that there is not a statistical difference. Due to this, there is a need to fail to reject the null hypothesis.
Table 10

*Mann-Whitney U Test Output*

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Ranks</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Full</td>
<td>Full</td>
<td>U</td>
<td>p-Value</td>
</tr>
<tr>
<td>R/E Overall</td>
<td>8.2</td>
<td>8.9</td>
<td>29.0</td>
<td>.791</td>
</tr>
<tr>
<td>R/E Minor</td>
<td>9.7</td>
<td>6.9</td>
<td>20.5</td>
<td>.244</td>
</tr>
<tr>
<td>R/E Moderate</td>
<td>7.2</td>
<td>10.2</td>
<td>19.5</td>
<td>.204</td>
</tr>
<tr>
<td>R/E Major</td>
<td>8.6</td>
<td>8.4</td>
<td>30.5</td>
<td>.916</td>
</tr>
<tr>
<td>Sex Overall</td>
<td>7.2</td>
<td>10.1</td>
<td>20.0</td>
<td>.220</td>
</tr>
<tr>
<td>Sex Minor</td>
<td>6.6</td>
<td>11.0</td>
<td>14.0</td>
<td>.063</td>
</tr>
<tr>
<td>Sex Moderate</td>
<td>7.8</td>
<td>9.4</td>
<td>25.5</td>
<td>.524</td>
</tr>
<tr>
<td>Sex Major</td>
<td>6.9</td>
<td>10.5</td>
<td>17.5</td>
<td>.137</td>
</tr>
<tr>
<td>SPED Overall</td>
<td>7.4</td>
<td>9.9</td>
<td>22.0</td>
<td>.314</td>
</tr>
<tr>
<td>SPED Minor</td>
<td>7.4</td>
<td>9.9</td>
<td>21.5</td>
<td>.289</td>
</tr>
<tr>
<td>SPED Moderate</td>
<td>9.7</td>
<td>7.0</td>
<td>21.0</td>
<td>.265</td>
</tr>
<tr>
<td>SPED Major</td>
<td>6.7</td>
<td>10.8</td>
<td>15.5</td>
<td>.090</td>
</tr>
<tr>
<td>SES Overall</td>
<td>9.0</td>
<td>9.1</td>
<td>27.0</td>
<td>.634</td>
</tr>
<tr>
<td>SES Minor</td>
<td>8.2</td>
<td>8.9</td>
<td>29.0</td>
<td>.791</td>
</tr>
<tr>
<td>SES Moderate</td>
<td>8.6</td>
<td>8.4</td>
<td>30.5</td>
<td>.916</td>
</tr>
<tr>
<td>SES Major</td>
<td>8.1</td>
<td>9.0</td>
<td>28.0</td>
<td>.710</td>
</tr>
</tbody>
</table>

*Note:* R/E = race/ethnicity, SPED = special education status, SES = socioeconomic status, Not Full = schools that did not fully implement PBIS, Full = schools that fully implemented PBIS.

Chapter 4 Closure

Chapter 4 represented the data that explored the correlation between PBIS implementation and the spread of disproportionality of White to non-White students, female to male students, non-SPED students to SPED students, and non-low SES students to low SES students when looking at the overall number of behavior occurrences and the behavior occurrences within category (minor, moderate, major). Descriptive statistics and calculations of disproportionality differences and disproportionality spreads were used to describe the sample in this study. Correlation analysis and a series of Mann-Whitney *U* tests were used to analyze the data. Chapter 4 presented the results of these analyses. Chapter 5 will discuss the practicality and implications of these findings.
CHAPTER 5

DISCUSSION

One major goal of public school systems in the United States is to cultivate academically successful, responsible citizens. One component of reaching this goal is to teach responsible behaviors to uphold safe learning environments for all students. One such initiative aimed at teaching responsible behaviors is Positive Behavioral Interventions and Supports (PBIS), which is used in schools across the country. PBIS is a framework that is intended to meet the behavior needs of all students (Coffey & Horner, 2012; Maag, 2012; Michigan Department of Education, 2021; Robert, 2020; Skiba et al., 2016; Sugai & Horner, 2006, 2009).

Despite implementation of PBIS in many schools, research continues to show that certain groups of students are disciplined at disproportionate rates, meaning that they are overrepresented in the discipline data when compared to their enrollment composition (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Gregory et al., 2010; Hamilton, 2019; Kaufman et al., 2010; Maag, 2012; Mizel et al., 2016; Montgomery, 2012; Okonofua et al., 2016; Roch & Edwards, 2017). Many studies have been done on the implementation of PBIS (Boneshefski & Runge, 2014; Bradshaw et al., 2010; Burke et al., 2012; Burke et al., 2014; Caldarella et al., 2011; Cressey et al., 2014; Freeman et al., 2016; Smolkowski & Strycker, 2016; Warren et al., 2006), and many studies have been done on disproportionality in school discipline (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Lacoe & Manley, 2019; Mizel et al., 2016; Roch & Edwards, 2017).

One facet that is missing in the existing literature is looking at the correlation between the implementation of PBIS and disproportionality in school discipline, and the comparison of
disproportionate discipline rates in schools that fully implement PBIS and those that do not fully implement PBIS, which was the focus of this study.

It is important to identify if PBIS is helping to improve the issue of disproportionality in school discipline. The overrepresentation of student groups in school discipline indicates that the behavior needs of all students are not being met. My study took a deeper look at this issue. It was conducted by having 16 participating schools complete a PBIS implementation survey and using those results to compare to the existence of disproportionality in these schools.

**Discussion of Major Results**

The results presented in this study were based on a sample of 16 participating schools in one Midwest state. The sample included 10 elementary schools, three middle schools, and three high schools with a total of 7,124 enrolled students. The results showed a diverse representation of enrollment compositions of demographic categories, specifically broken down by race/ethnicity, sex, SPED, and SES. Research questions one and two provided results that describe the two variables in the study: PBIS implementation and the existence of disproportionality in reported behavior occurrences. Research questions three and four provided results that get at the purpose of the research, which was to look at the association between the variables and to identify if schools that fully implemented PBIS had better outcomes with groups that are traditionally overrepresented in school discipline. The sections below provide a deeper look at the findings in this study and discuss how these findings connect back to the purpose of the research.

**Findings from Research Question One**

Research question one explored the degree of implementation of PBIS using SET scores, an implementation evaluation tool. Results showed a variety of scores and indicated that nine out
of 16 schools did not fully implement PBIS and seven out of the 16 schools did fully implement PBIS. Although this is an initiative that is supported by the state in which this research took place, implementation takes time and resources (Coffey & Horner, 2012; Robert, 2020; Sanetti & Collier-Meek, 2015; Sugai & Horner, 2009). This may explain why more than half of the schools are not yet at a place of full implementation.

Findings from Research Question Two

Research question two investigated the existence of disproportionality in reported behavior occurrences in participating schools, broken down by race/ethnicity, sex, SPED, and SES, as well as behavior occurrence categories (minor, moderate, major). Figure 2 shows a summary of these findings.

Figure 2

Summary of Greatest Areas of Overrepresentation in School Discipline

<table>
<thead>
<tr>
<th>Demographic Groups that showed the Greatest Overrepresentation in Overall Behavior Occurrence and within each Behavior Occurrence Category</th>
<th>Demographic Groups that Showed the Greatest Overrepresentation within Demographic Categories</th>
<th>Behavior Occurrence Category of Greatest Overrepresentation by Demographic Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-White</td>
<td>Male</td>
<td>Major</td>
</tr>
<tr>
<td>Male</td>
<td>Male</td>
<td>Minor</td>
</tr>
<tr>
<td>SPED</td>
<td>SPED</td>
<td>Minor</td>
</tr>
<tr>
<td>SES</td>
<td>SES</td>
<td>Minor</td>
</tr>
</tbody>
</table>

Note: Overrepresentation shown by demographic groups and behavior occurrence categories.

The results of this study showed that the groups with the largest overrepresentation in school discipline data overall, and within each behavior occurrence category (minor, moderate, major) were male students and SPED students. Within the demographic categories
(race/ethnicity, sex, SPED, SES), the demographic groups that were most overrepresented in school discipline were non-White students, male students, SPED students, and low SES students. The largest spread of disproportionality within race/ethnicity for White to non-White students was in the major category. The largest overrepresentation within the sex category from female to male students, the SPED category from non-SPED students to SPED students, and the SES category from non-low SES students to low SES students all showed up in the minor category.

It was important to look at these specific demographic categories because the existing research shows that groups within these categories are historically and currently overrepresented in school discipline data (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Gregory et al., 2010; Hamilton, 2019; Kaufman et al., 2010; Maag, 2012; Mizel et al., 2016; Montgomery, 2012; Okonofua et al., 2016; Roch & Edwards, 2017).

Previous research revealed that increased circumstances of behavior occurrences equated to increased exclusion from learning and negative connections with school as well as a host of problematic issues post K-12 education (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Mizel et al., 2016; Nese et al., 2020; Nocera et al., 2014). My findings align with the existing research and showed that the following groups of students are overrepresented in school discipline: non-White, male, SPED, and low SES (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Gregory et al., 2010; Hamilton, 2019; Kaufman et al., 2010; Maag, 2012; Mizel et al., 2016; Montgomery, 2012; Okonofua et al., 2016; Roch & Edwards, 2017). My findings indicate that the largest overrepresentation for male, SPED, and low SES students occurred for behavior occurrences that are often more subjective in nature and the largest overrepresentation for non-White students was shown for behavior occurrences that pose major safety threats.
Findings from Research Question Three

Research question three investigated the correlation between PBIS implementation and disproportionality in school discipline. Table 11 provides an overview of the results of research questions three and four (the findings for research question four will be discussed in the next section).

Table 11

Summary of Key Findings Part I

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Association</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Sex</td>
<td>Moderate</td>
<td>None</td>
</tr>
<tr>
<td>SPED</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>SES</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Note: Association = association between PBIS implementation and spread of disproportionality, Difference = difference in disproportionality between schools that fully implemented PBIS and schools that did not.

The first column identifies the demographic categories used in this study: race/ethnicity, sex, SPED, and SES. The second column identifies the correlation between PBIS implementation and the spread of disproportionality for the overall number of behavior occurrences within each demographic category. The third column identifies the difference in the spread of disproportionality for each demographic category when comparing schools that fully implemented PBIS and schools that did not fully implement PBIS. The information displayed in column three will be further discussed in the next section.

Results showed no correlation between PBIS implementation and the existence of disproportionality when broken down by race/ethnicity, SPED, and SES, and a moderate, positive correlation between PBIS implementation and the existence of disproportionality when broken down by sex. In theory, fully implementing PBIS would help to alleviate the existence of
overrepresentation in behavior occurrences because PBIS implementation aims to provide adequate behavior support to all students (Coffey & Horner, 2012; Maag, 2012; Michigan Department of Education, 2021; Robert, 2020; Skiba et al., 2016; Sugai & Horner, 2006, 2009). Not only did this not hold true in my research, but the association between PBIS implementation and the spread of disproportionality from female to male students was moderately positive, indicating that schools with stronger PBIS implementation had a larger overrepresentation of male students in reported behavior occurrences. Although the associations were mostly very weak, which statistically means no correlation at all, the largest associations for male, SPED, and low SES students were within behavior occurrences in the minor category and the largest association for non-White students was in the major behavior occurrence category.

**Findings for Research Question Four**

Research question four aimed to identify if there exists a difference in disproportionality when comparing the seven schools that fully implemented PBIS to the nine schools that did not fully implement PBIS. The results showed that there were no statistically significant differences in the existence of disproportionality in schools that fully implemented PBIS when compared to schools that did not fully implement PBIS. The results imply that each school is essentially on its own path with PBIS implementation, and that some schools have better outcomes when it comes to the existence of disproportionality than others, but the implementation of PBIS did not determine this difference as an isolated measure.

**Summary of Statistical Findings**

The statistical findings in my study did not match up with what I hypothesized while conceptualizing this research. The conceptual framework for my research indicated that, in theory, stronger PBIS implementation would correlate with decreased disproportionality of
traditionally overrepresented student groups in school discipline. Furthermore, in theory, schools that fully implemented PBIS would show a lesser existence of disproportionality than schools that did not fully implement PBIS. In general, if all of the components of PBIS implementation are in place, the issue of disproportionality should improve. Table 12 displays the dissimilarity between the conceptual framework for this study and the actual findings of the statistical tests for correlation and significance.

**Table 12**

*Theories of Conceptual Framework Compared to Actual Findings*

<table>
<thead>
<tr>
<th>Theory</th>
<th>Importance of Theory</th>
<th>Actual Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a strong, negative correlation between the degree of implementation of PBIS and the existence of disproportionality in reported school discipline offenses when broken down by race/ethnicity, sex, SPED, and SES.</td>
<td>The existence of a correlation would create an opportunity to explore causation in further studies to improve the issue of disproportionality by strengthening PBIS implementation.</td>
<td>There is no correlation between the degree of implementation of PBIS and the existence of disproportionality in reported school discipline offenses when broken down by race/ethnicity, SPED, and SES, and a positive, moderate correlation when broken down by sex.</td>
</tr>
<tr>
<td>There is a significant difference in the existence of disproportionality in reported school discipline offenses when comparing schools that fully implement PBIS and schools that do not fully implement PBIS.</td>
<td>A significant difference in disproportionality between schools that implement PBIS and schools that do not would create an opportunity to identify the implementation components that have a stronger impact on the issue of disproportionality to improve this issue.</td>
<td>There is no significant difference in the existence of disproportionality when comparing schools that fully implemented PBIS to schools that did not fully implement PBIS.</td>
</tr>
</tbody>
</table>

I would have liked to have seen a stronger association between the implementation of PBIS and decreased existence of overrepresentation in behavior occurrences by demographic
groups in the results of this study. Further, I would have liked to have seen differences in the existence of disproportionality in schools that fully implemented PBIS and schools that did not fully implement PBIS. One goal of PBIS implementation is to meet the behavior needs of all students (Coffey & Horner, 2012; Maag, 2012; Michigan Department of Education, 2021; Robert, 2020; Skiba et al., 2016; Sugai & Horner, 2006, 2009). Although the implementation of PBIS has been shown to decrease the overall number of behavior occurrences in schools (Boneshefski & Runge, 2014; Bradshaw et al., 2010; Burke et al., 2012; Burke et al., 2014; Caldarella et al., 2011; Cressey et al., 2014; Freeman et al., 2016; Smolkowski & Strycker, 2016; Warren et al., 2006), the issue of overrepresentation of groups of students in school discipline still exists. This issue has existed for decades (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Lacoe & Manley, 2019; Mizel et al., 2016; Roch & Edwards, 2017). Overrepresentation of certain student groups in school discipline is a systemic issue that has tremendous societal impacts on the groups that are overrepresented during their time in K-12 schools and beyond (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Mizel et al., 2016; Nese et al., 2020; Nocera et al., 2014). This study considered a very specific set of data and there is a need for continued studies in this area. In reflection of the results of this study, I analyzed the results through the lens of existing literature on PBIS implementation and on the issue of disproportionality. This analysis is discussed in the next section.

**Relationship of Results to Existing Studies**

There is an existing body of literature related to the implementation of PBIS, and an existing body of literature on disproportionality in school discipline. My study looked at the association between these two topics, and looked to see if there is a difference in
disproportionality depending on the degree of implementation of PBIS in schools. The body of literature shows that this intersection has not been fully explored yet. Table 13 displays how my research is situated within the bodies of literature on these two topics separately. Following this Table, I will summarize my findings in connection to previous research, as depicted in Table 13.
Table 13

Summary of Key Findings Part II

<table>
<thead>
<tr>
<th>Key Finding</th>
<th>Connection to Existing Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following demographic groups of students are overrepresented in school</td>
<td>Affirms: Bowditch (1993); Boneshefski and Runge (2014); Caldwell et al. (2020); Garibaldi (1979); Gregory et al. (2010); Hamilton (2019); Kaufman et al. (2010); Lacoe and Manley (2019); Maag (2012); Mizel et al. (2016); Montgomery (2012); Okonofua et al. (2016); Predy et al. (2014); Roch and Edwards (2017)</td>
</tr>
<tr>
<td>discipline data: non-White, male, SPED, low SES.</td>
<td></td>
</tr>
<tr>
<td>Male students showed the highest level of overrepresentation when compared</td>
<td>Addition to existing literature</td>
</tr>
<tr>
<td>to non-White, SPED, and low SES students.</td>
<td></td>
</tr>
<tr>
<td>The highest level of overrepresentation of male students in school behavior</td>
<td>Addition to existing literature</td>
</tr>
<tr>
<td>occurrences was in elementary schools.</td>
<td></td>
</tr>
<tr>
<td>Male, SPED, and low SES students show the highest levels of overrepresentation</td>
<td>Affirms: Caldwell et al. (2020); Gregory et al. (2010); Kaufman et al. (2010); Lacoe and Manley (2019); Maag (2012); Mizel et al. (2016); Nese et al. (2020); Okonofua et al. (2016); Roch and Edwards (2017)</td>
</tr>
<tr>
<td>in behavior occurrences that fall into the minor category. Behavior</td>
<td></td>
</tr>
<tr>
<td>infractions in the minor category tend to be more subjective.</td>
<td></td>
</tr>
<tr>
<td>Implementation of PBIS, measured by the SET, is strongest in elementary</td>
<td>Affirms: Akos et al. (2015); Bailey et al. (2015); Boneshefski and Runge (2014); Bradshaw et al. (2010); Burke et al. (2012); Cressey et al. (2014); Grimaldi and Robertson (2011); Lacoe and Manley (2019); Smolkowski and Strycker (2014)</td>
</tr>
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<td>settings.</td>
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<td>One major goal of implementing PBIS is to support the needs of all students</td>
<td>Differs: Coffey and Horner (2012); Maag (2012); Michigan Department of Education (2021); Robert (2020); Skiba et al. (2016); Sugai and Horner (2006, 2009)</td>
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<td>However, data show that there is not a strong association between the</td>
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<td>implementation of PBIS and the existence of disproportionality.</td>
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<td>Non-White, male, SPED, and low SES students are overrepresented in school</td>
<td>Differs: Coffey and Horner (2012); Maag (2012); Michigan Department of Education (2021); Robert (2020); Skiba et al. (2016); Sugai and Horner (2006, 2009)</td>
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<td>behavior occurrences in both schools that fully implemented PBIS and</td>
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<td>schools that did not fully implement PBIS, with a higher level of</td>
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<td>overrepresentation of these groups in schools that fully implement PBIS.</td>
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My research contributed to the existing body of literature surrounding the two topics studied in a number of ways. When looking at PBIS implementation, my research affirmed that implementation is strongest in elementary school settings. PBIS is a framework that is structured as a three-tiered system aimed to set a primary foundational tier of preventative measures and additional tiers to support students that do not respond to only the foundational tier. This type of framework was initially designed with an elementary school setting in mind, which explains why implementation is more feasible and stronger at this educational level (Boneshefski & Runge, 2014; Bradshaw et al., 2010; Burke et al., 2012; Cressey et al., 2014; Smolkowski & Strycker, 2016).

When looking at the issue of disproportionality in school discipline, my research affirmed the overrepresentation of the following groups of students in school discipline: non-White, male, SPED, and low SES. My research also affirmed that male, SPED, and low SES students showed a greater overrepresentation in behavior occurrences that fall into the minor category. The issue of disproportionality in school discipline has been present for many years (Boneshefski & Runge, 2014; Bowditch, 1993; Caldwell et al., 2020; Garibaldi, 1979; Lacoe & Manley, 2019; Mizel et al., 2016; Roch & Edwards, 2017). Initiatives such as PBIS were put in place to ensure that all students are supported in equitable ways. My research affirmed that the issue of disproportionality still persists.

There were two findings in my study that stood out as additions to the existing body of literature on these topics. One finding is that male students showed the highest level of overrepresentation in behavior occurrences when compared to other demographic groups that are traditionally overrepresented (non-White, SPED, and low SES students). The second finding was that the greatest overrepresentation of male students in behavior occurrences occurred in
elementary schools. These findings imply that there is a need to determine targeted supports for male students in school settings, particularly in elementary settings.

There were two findings in my study that differ from information in existing literature. One goal of PBIS implementation is to support the needs of all students. However, my research showed no association between the implementation of PBIS and the existence of disproportionality, and increased existence of disproportionality for male students in schools that fully implement PBIS. According to this set of data, PBIS implementation does not appear to be meeting the needs of all students. It should be noted that my research focused a specific set of data that does not consider all factors of PBIS implementation, nor does it consider all factors associated with disproportionality in school discipline.

This study contributed to the beginning work of looking at the intersection between two important topics in education: PBIS implementation and the existence of disproportionality in school discipline data. Although my research did not show strong associations or differences, my findings suggest the need to further explore the intersection between these two topics. My research did not explore causation between these two topics. However, the findings imply that this area needs further exploration. In order to understand the enormity of the issue of disproportionality in school discipline and to make strides towards improving it, there are recommended action steps for educational researchers, school leaders, and school policymakers. These recommended action steps are discussed in the next section.

**Implications for Future Research**

The issue of disproportionality in school discipline heavily impacts the students that are overrepresented in this data, and has lasting impacts on communities (Boneshefski & Runge, 2014; Bowditch, 1993; Garibaldi, 1979; Mizel et al., 2016; Nese et al., 2020; Nocera et al.,
2014). Schools hold a responsibility for contributing to the cultivation of academically successful and responsible citizens. PBIS is one framework that is intended to support this effort through teaching responsible behaviors and supporting the behavior needs of all students, regardless of race/ethnicity, sex, SPED status, and SES. This is truly an effort to provide equitable experiences and outcomes for all students. Even with the implementation of PBIS in participating schools, the issue of disproportionality still exists, indicating that equitable experiences and outcomes are not in place for all students. This issue has implications for educational researchers, school leaders, and educational policymakers. The following recommendations are suggested to these groups to take action towards a more equitable learning experience for all students in K-12 public schools.

**Recommendations for Future Researchers**

There are three main recommendations for future researchers that study the topics of PBIS implementation and/or disproportionality in school discipline. In order to confirm or dispute findings from this study, the first recommendation is that future researchers replicate this study using a larger sample size of schools with a broadened area or region. This study looked at 16 schools within one specific area of one state. A larger sample size with a more diverse representation of locations will allow these topics to be investigated in deeper ways.

Another recommendation is that future researchers do a deeper analysis on the intersection between PBIS implementation and disproportionality in school discipline. This research looked at surface level associations between these two topics. This research did not look specifically at the impact that PBIS implementation has on the overall number of behavior occurrences in schools; this information has already been analyzed in many studies. Even with the possibility of a decreased number of overall behavior occurrences in schools fully
implementing PBIS, this research shows that the most vulnerable students groups continue to be at risk. In order to accurately define effective action steps towards diminishing the issue of disproportionality by implementing PBIS, it is suggested that there are analyses on the relationship, impact, and causation between these variables, and to analyze the data over time. My research looked at PBIS implementation and the existence of disproportionality within one school year. It is probable that the data connected to these two variables changes over time. This would be a valuable measure of improving or worsening conditions of the existence of disproportionality in school discipline as related to the implementation of PBIS.

Finally, future researchers should study specific schools with lower and/or decreasing disproportionate rates in school discipline and identify the strategies being used in these schools. My research showed that disproportionality in behavior occurrences varied from school to school, whether PBIS was fully implemented or not. There is a need to explore the reason for this variation and find strategies that adequately tend to this issue. Future research in these areas will inform school leaders and educational policymakers.

**Recommendations for School Leaders**

PBIS is a framework, and the implementation of this framework has lots of room for interpretation, even with research validated tools for evaluation of implementation. Individual schools and districts have options for their methods of implementation. I am posing three recommendations for school leaders that could, in theory, contribute to decreasing the existence of disproportionality in school discipline through the implementation of PBIS.

The first recommendation is that school leaders construct an implementation model using the PBIS framework which integrates the use of strategies and philosophies that are specifically aimed at diminishing the overrepresentation of certain demographic groups in school discipline.
Some examples of these strategies and philosophies are Restorative Practices, Trauma Informed Practices, and Culturally Responsive and Relevant Teaching Practices. Implementation of PBIS by meeting the checklist items on the evaluation tools is not enough; this framework must integrate equity-focused practices in order to truly meet the needs of all learners.

Secondly, school leaders should make the issue of disproportionality in school discipline a priority in their schools by analyzing the impact that implementation of PBIS is having on specific groups of students. Often times, data used to analyze the impact of implementation are focused on types of behavior occurrences, times and locations that behavior occurs, and the like, and not on the demographics of the students that are showing up in this data. Using the demographic data to determine overrepresentation should be used to inform the process of implementation in order to understand the strategies and philosophies that should be integrated into the framework.

Lastly, school leaders should use evaluation tools for PBIS that go beyond the surface level components of PBIS. Evaluation tools for PBIS should look specifically at the integration of equity-based strategies and data focused on the impact of specific demographic groups. For example, my research showed that male students were the student group in the participating schools that displayed the greatest overrepresentation in the discipline data. School leaders should include PBIS evaluation tools that include components that reveal this type of overrepresentation so that schools can effectively plan for meeting the needs of specific overrepresented student groups. In order to support school leaders in their efforts to implement PBIS below surface level implementation, there must be support from policymakers.
Recommendations for School Policymakers

School policymakers not only bear weight on the accountability of meeting school policy mandates, they also play a part in funding, providing resources, and providing support to schools. Therefore, recommendations for educational policymakers are aligned with the recommendations for future researchers, which inform the processes for school leaders and support their efforts. It is recommended that policymakers continue to support the implementation of PBIS, but within this, they should mandate the following: integration of specific strategies and philosophies that are focused on equitable practices, require evaluation tools for PBIS implementation that specifically evaluate the existence of disproportionality and the data trends within this, and re-establish the goals of PBIS implementation to focus on resolving the issue of disproportionality in school discipline.

The current expected outcome of focus for PBIS implementation is to increase positive pro-social behaviors and decrease negative student behaviors. Although there is evidence to show a decrease in reported behavior occurrences in schools that implement PBIS (Boneshefski & Runge, 2014; Bradshaw et al., 2010; Burke et al., 2012; Burke et al., 2014; Caldarella et al., 2011; Cressey et al., 2014; Freeman et al., 2016; Smolkowski & Strycker, 2016; Warren et al., 2006), there are still certain groups of students that are overrepresented in school discipline data and these groups are the most vulnerable students. If PBIS will continue to be a supported initiative from local governments, the focus of its implementation should be specifically on decreasing behavior issues and having an outcome of behavior occurrences that are proportionate to enrollment composition when broken down by demographic categories. Without this focus, all students are not getting what they need, only some students are getting what they need, and the gap continues to widen. In addition to mandating these changes with the
implementation and evaluation of PBIS, policymakers should develop strategic plans to support schools’ efforts with meeting the mandates. Time, resources, professional learning, and appropriate funding should be allocated as a priority to assisting schools with PBIS implementation that focuses on decreasing the existence of disproportionality.

**Concluding Thoughts**

Public K-12 school systems hold an important responsibility in assisting with the development of young people to be positive, contributing citizens of their communities. This responsibility is not upheld with only some student groups in mind, it is upheld with meeting the needs of all young people. The core of my research is truly about equity in education, particularly in supporting student behaviors for all students in an effort to resolve the issue of disproportionality in school discipline. The existence of disproportionality in school discipline indicates that all students are not experiencing equitable outcomes in during their time in K-12 education. PBIS could be a framework to support this effort, and it may currently be positively contributing to resolving the issue of disproportionality. However, in order for PBIS to truly meet the needs of all students, equitable practices within this initiative must be a priority, and focusing on how the implementation of PBIS is impacting specific groups of students must be a priority for researchers, educators, and educational policymakers. My study did not provide results that show that stronger PBIS implementation provides more equitable outcomes for students. Equity must be the anchor in implementation of the PBIS framework in order to meet its ultimate goal of supporting the behavior needs of all students, and in order for school systems in the United States that are implementing PBIS to truly aid in the cultivation of responsible and successful citizens.
References


Appendix A

Memorandum to Superintendents
From: [Researcher’s email address]
To: [Superintendents’ email addresses]
Subject: Participation in Doctoral Research

Dear Superintendents,

I would like to share some information with you about a research project that I am working on that will benefit your school. I am doing a quantitative research study to look at the correlation between disproportionality in school discipline and School-wide Positive Behavioral Supports and Interventions (PBIS) implementation.

When I initially wrote the proposal for my research, I proposed looking at 25 different schools within 2 different counties. Around this time, your school districts participated in an event, which I attended. I was impressed to see that conversations about equity were at the forefront of this collaborative session. This swayed me to focus my research on your school districts. My study is about equity at its core. I selected this topic for my research because I am a passionate educator that cares deeply about the progress and success of the young people in any community. The data that your schools will be given as a result of participating in this study will benefit them in a number of ways, with a great opportunity to use the data to influence the decision-making around equitable practices regarding student discipline.

In order for your district to participate, it will require an individual from each of your school buildings to complete one survey. The survey will take approximately one hour of time. The survey is a research validated PBIS implementation assessment called the School-wide Evaluation Tool (SET). This survey will be sent to each school principal to provide to the PBIS leader in each building, and this individual will complete the survey through brief interviews, a tour of the building, and a review of school artifacts.

Here are the steps for schools participating in the research and receiving feedback:

- Step 1: school PBIS leaders complete the electronic SET
- Step 2: school/district representative provides researcher with enrollment data and Office Discipline Referral (ODR) data from school year for each school, disaggregated by race/ethnicity, sex, special education status, and socioeconomic status
- Step 3: schools receive their SET feedback in the form of an overall implementation score and broken down by 7 implementation categories
- Step 4: schools receive the statistical analyses for their school, looking specifically at the PBIS implementation and its correlation to disproportionality in ODR data

I am very passionate about serving school communities and improving the educational experience for young people. I know that the data from this research will be useful in making progress towards a more equitable school experience for students, and participation from your district requires minimal effort from your building-level staff. I look forward to moving forward with this research and including your districts in the study.
Appendix B

Doctoral Research Overview
Student Investigator: Stephenie C. Bruce  
Title of the Study: Positive Behavioral Interventions and Supports (PBIS): Does Stronger Implementation Relate to More Equitable Student Outcomes in School Discipline?

You have been invited to participate in a research project titled “Positive Behavioral Interventions and Supports (PBIS): Does Stronger Implementation Relate to More Equitable Student Outcomes in School Discipline?”. This project will serve as Stephenie C. Bruce’s dissertation research project for the requirements of the Doctor of Philosophy in Educational Leadership degree. This document will explain the purpose of this research project and will go over all of the time commitments, the procedures used in the study, and the risks and benefits of participating in this research project. Please read this document carefully and completely and please ask any questions if you need more clarification.

**What are we trying to find out in this study?**
The purpose of this study is to determine the correlation between the degree of implementation of PBIS and the disproportionality differences of demographic groups in school discipline, specifically looking at race/ethnicity, sex, special education status, and socioeconomic status.

**Who can participate in this study?**
General education setting public schools that serve students in kindergarten through twelfth grade within the selected school districts can participate in this study.

**Where will this study take place?**
Data collection will occur at individual school sites to collect the data using the School-wide Evaluation Tool (SET). This survey is a research validated tool used to measure the implementation of School-wide Positive Behavioral Interventions and Supports (PBIS).

Electronic reports will be run by school or district staff to reflect the enrollment of each participating school disaggregated by demographic factors, and the office discipline referrals broken down by category and disaggregated by demographic factors.

**What is the time commitment for participating in this study?**
The time commitment for the superintendents of the selected school districts will be approximately 30 minutes.

The time commitment for the principals of the schools within the selected school districts will be approximately 30 minutes.

The time commitment for the individual within each participating school that will be collecting the survey data to contribute to this study will be approximately one hour.

The time commitment for the individual at the school or district level that will run the enrollment and discipline reports will be approximately 2-4 hours, depending on the number of reports being run.

**What will you be asked to do if you choose to participate in this study?**
Superintendents participating in this study will be asked to distribute initial communication to the building principals in their participating schools.

Principals participating in this study will be asked to identify one person to collect the survey data, and will be asked to participate in a brief interview.

Data collectors in each school will be asked to use the survey guide to collect the data for their school.

The data representative from the school or district will be asked to provide the researcher with the student enrollment of each school, disaggregated by demographic factors, as well as the student discipline referral data, broken down by type of referral, and also disaggregated by demographic factors.

**What information is being measured during the study?**
The following information will be measured during this study: the degree of implementation of PBIS (measured using the *School-wide Evaluation Tool*), the representation of demographic groups in student enrollment for each school, and the representation of demographic groups in school discipline referrals for each school. Statistical analyses will be used to determine the correlation between the implementation of PBIS and the disproportionality spreads of demographic groups in school discipline referrals.

**What are the risks of participating in this study and how will these risks be minimized?**
There are no known risks of participating in this study.

**What are the benefits of participating in this study?**
The benefits of participating in this study are that each school will receive feedback on the degree of implementation of PBIS for their school. This feedback will be broken down by categories of implementation. Additionally, each school will receive a full report of the results of the statistical analyses used to determine the correlation between the degree of implementation of PBIS and the spreads in disproportionality of demographic groups in student discipline for their school.

**Are there any costs associated with participating in this study?**
There are no costs associated with participating in this study.

**Is there any compensation for participating in this study?**
There is no compensation for participating in this study.

**Who will have access to the information collected during this study?**
This is a confidential study. The building principal from each school will receive the results from their individual school only.

**What if you want to stop participating in this study?**
You can choose to stop participating in the study at any time for any reason. You will not suffer any prejudice or penalty by your decision to stop your participation. You will experience no
consequences if you choose to withdraw from this study. The investigator can also decide to stop participation in this study at any time.

Should you have any questions prior to or during the study, you can contact the principal investigator of this research. You can also contact the Vice President for Research for Western Michigan University at with any concerns about this study.
Appendix C

Memorandum to Building Principals
From: [Researcher’s email address]
To: [Principals’ email addresses]
Subject: Participation in Doctoral Research

I am excited and grateful that your superintendents have agreed for your schools to participate in my doctoral research. Full participation in the study will take minimal time on your behalf, and will provide you with valuable data about your school.

My study is about equity at its core. I selected this topic for my research because I am a passionate educator that cares deeply about the progress and success of the young people in any school community. The data that your schools will be given as a result of participating in this study will benefit them in a number of ways, with a great opportunity to use the data to influence the decision-making around equitable practices regarding student discipline.

More specifically, my research will look at the correlation between implementation of School-wide Positive Behavioral Interventions and Supports (PBIS) and the representation of demographic groups in school discipline data. In order to complete this study, I will need a completed survey from each school, and some data reports from your Student Information System. The completed survey from each school will take approximately 1 hour of time, and should be completed by a PBIS leader or someone in a similar position in your school. Once all of the data is compiled, you will be receiving a full report of the results for your school.

In order to complete this survey, please do the following:
- Read the Overview of the Study and the Set Administration Instructions.
- Identify one person in your school to collect the data and share the Overview and Instructions with them.
- Ask your identified data collector to complete their data submission by [date provided].
Appendix D

SET Administration Instructions
Overview
The School-wide Evaluation Tool (SET) is a research validated survey to determine the degree of implementation of PBIS. For the purposes of this survey, the format of the SET has been rearranged in order to allow for more feasible data collection. If you would like to see the original format of the SET, see the SET Manual on the PBIS website.

There are 5 different ways to retrieve responses to the questions on the SET: product review, building tour, staff interviews, student interviews, and administration interview. The purpose of reviewing products is to identify how processes for supporting behavior are ingrained in written systems for the school. Products can include handbooks, PBIS action plans (or something similar), lesson plans, School Improvement Plans, or any other product that would allow for a response to the question. The purpose of the building tour is to observe the ways in which the processes for supporting behavior show up around the school. The purpose of the interviews is to identify the ways in which the processes for supporting behavior are communicated throughout the school.

The total data collection process should take less than one hour. The building tour, staff interviews, and student interviews can all happen at the same time. An interview with administration should be a time to sit down with an administrator and ask the interview questions. Product review can take place at any time and done as needed to answer any questions.

Instructions
Please follow these instructions to collect the data:

• Print this document. You will write your responses on this document, and later transfer these into the Google Form (last set of instructions).
• Review necessary products to answer questions 1-7, and circle the appropriate responses on this document.
• Schedule a time to do a brief building tour (approximately 10-15 minutes). The building tour should occur while students are in school in order to interview students and staff.
• During the building tour, plan to randomly go to 10 locations around the school.
• While on the building tour, tally the responses to questions 8 and 9, and once all tallies are made (10 locations for question 8, and 7 responses for question 9), mark the response for those questions.
• While on the building tour, ask 10 random staff questions 10-15 and tally the responses (this could also be done in a staff meeting or similar times). Once all the tallies are made, mark the responses to questions 10-15.
• While on the building tour, ask 15 random students questions 16 and 17 and tally the responses (this could also be done during lunch periods or similar times). Once all the tallies are made, mark the responses to questions 16 and 17.
• Schedule a brief interview with the building principal (10-15 minutes).
• During the principal interview, ask questions 18-25 and mark the responses to these questions.
• Attend a PBIS team meeting (this could also be a behavior team or something similar).
• Identify the total number of team members present. This will be used to calculate a percentage for the responses.
• Ask the team questions 26-28, tally the responses, and determine the percentage of the responses. Once the percentage is determined, mark the responses for questions 26-28.
• Input your marked responses for questions 1-28 in the corresponding fields in the Google Form.

School-wide Evaluation Tool Survey Questions

Review products to answer the following questions:

1. Is there documentation that staff has agreed to 5 or fewer positively stated school rules/behavioral expectations?
   0: no
   1: more than 5 rules and/or 1 or more rules is negatively stated
   2: yes

2. Is there a documented system for teaching behavioral expectations to students on an annual basis?
   0: no
   1: there is something in writing that states that behavioral expectations should be taught, but it is not a system of teaching the expectations
   2: yes

3. Is there a documented system for acknowledging student behavior?
   0: no
   1: documentation states an expectation to acknowledge, but does not state how this will be done
   2: yes

4. Is there a documented system for dealing with and reporting specific behavioral violations?
   0: no
   1: documentation states that documentation should occur, but does not state how to document
   2: yes

5. Does the discipline referral form list (a) student/grade level, (b) date, (c) time, (d) referring staff, (e) problem behavior, (h) probable motivation, (i) administrative decision?
   0: between 0 and 3 items are on the form
   1: between 4 and 6 items are on the form
   2: between 7 and 9 items are on the form

6. Does the School Improvement Plan list improving behavior support systems as one of the top 3 goals?
   0: a behavior goal is not listed
   1: a behavior goal is listed, but is not a top 3 goal
   2: yes

7. Does the PBIS team (or similar team) have an action plan with specific goals that has been updated within the last year?
   0: no
   2: yes
Do a building tour to answer the following questions using observations:

8. Are the agreed upon behavior expectations publicly posted in 8 out of 10 randomly chosen locations of the school?
   0: between 0 and 4 randomly chosen locations have posted expectations
   1: between 5 and 7 randomly chosen locations have posted expectations
   2: between 8 and 10 randomly chosen locations have posted expectations

9. Is there a documented crisis plan for responding to extreme dangerous situations readily available in at least 6 out of 7 randomly chosen locations of the school?
   0: between 0 and 3 randomly chosen locations have crisis plans available
   1: between 4 and 5 randomly chosen locations have crisis plans available
   2: between 6 and 7 randomly chosen locations have crisis plans available

During building tour, ask 10 random staff these questions:

10. What are the behavior expectations (Define what the acronym means)?
    0: between 0 and 5 staff can state at least 67% of the expectations
    1: between 6 and 8 staff can state at least 67% of the expectations
    2: between 9 and 10 staff can state at least 67% of the expectations

11. Have you taught the school rules/behavioral expectations this year?
    0: between 0 and 5 staff state that behavioral expectations have been taught this year
    1: between 6 and 8 staff state that behavioral expectations have been taught this year
    2: between 9 and 10 staff state that behavioral expectations have been taught this year

12. Have you given out any acknowledgements to students for positive behavior, other than verbal praise, since the beginning of the school year?
    0: between 0 and 5 staff state that they have given acknowledgements
    1: between 6 and 8 staff state that they have given acknowledgements
    2: between 9 and 10 staff state that they have given acknowledgements

13. What types of student problems do you or would you refer to the office?
    0: between 0 and 5 staff list a student problem that should be referred to the office according to the school’s policy
    1: between 6 and 8 staff list a student problem that should be referred to the office according to the school’s policy
    2: between 9 and 10 staff list a student problem that should be referred to the office according to the school’s policy

14. What is the procedure for dealing with an emergency situation, such as an active shooter?
    0: between 0 and 5 staff correctly identify this procedure
    1: between 6 and 8 staff correctly identify this procedure
    2: between 9 and 10 staff correctly identify this procedure

15. Is there a school-wide team that addresses behavioral support in your building?
    0: between 0 and 5 staff report that there is a school-wide team to address behavior support
    1: between 6 and 8 staff report that there is a school-wide team to address behavior support
    2: between 9 and 10 staff report that there is a school-wide team to address behavior support
During building tour, ask 15 random students these questions:

16. What are the behavior expectations in your school? (Define what the acronym means.)
   0: between 0 and 9 students are able to correctly identify at least 67% of the behavior expectations
   1: between 8 and 10 students are able to correctly identify at least 67% of the behavior expectations
   2: between 11 and 15 students are able to correctly identify at least 67% of the behavior expectations

17. Have you received an acknowledgement for positive behavior, other than verbal praise, since the school year started?
   0: between 0 and 3 students state that they have received acknowledgement
   1: between 4 and 7 students state that they have received acknowledgement
   2: between 8 and 15 students state that they have received acknowledgement

Schedule an interview time with the principal and ask these questions:

18. Do you collect and analyze office discipline referral information?
   0: data is not collected or reviewed
   1: data is collected, but not summarized or analyzed
   2: data is collected, summarized, and analyzed

19. Does the PBIS team (or similar team) provide a discipline data summary to staff at least 3 times a year?
   0: data is not provided to staff
   1: data is provided to staff 1-2 times a year
   2: data is provided to staff 3 or more times a year

20. Does PBIS team (or similar team) represent all staff groups and departments?
    0: not all groups or departments are represented
    2: all groups or departments are represented

21. Are the building administrators active members of the PBIS team (or similar team)?
    0: administrators are not active members of this team
    1: administrators are members but are not consistently active
    2: at least one administrator is an active member of the team

22. How frequently do PBIS team (or similar team) meetings occur?
    0: there are no team meetings held
    1: meetings occur less frequently than once a month
    2: meetings occur at least once a month

23. Does the PBIS team (or similar team) report their progress to the staff at least 4 times per year?
    0: team does not report progress to the staff
    1: team reports progress, but not 4 times each year
    2: team reports progress at least 4 times a year

24. Does the school budget contain an allocated amount of money for establishing and maintaining school-wide behavior support?
    0: there is no budget allocation for behavior support
2: there is a budget allocation for behavior support

25. Is there a district, county, or state liaison to assist with school-wide behavior support?
   0: there is not a liaison
   2: there is at least one liaison

Ask the PBIS team (or similar team) these questions (if there is not such a team, all of the responses will be 0):

26. Has the school-wide system for behavior support been taught/reviewed with staff at least one time this school year?
   0: between 0 and 50% of the team state that the system has been taught/reviewed
   1: between 51 and 89% of the team state that the system has been taught/reviewed
   2: between 90 and 100% of the team state that the system has been taught/reviewed

27. Is discipline data used to make decisions about designing, implementing, and revision school-wide behavior supports?
   0: between 0 and 50% of the team state that data is used for decision-making
   1: between 51 and 89% of the team state that data is used for decision-making
   2: between 90 and 100% of the team state that data is used for decision-making

28. Is there a specific team leader?
   0: between 0 and 50% of the team identify a specific team leader
   1: between 51 and 89% of the team identify a specific team leader
   2: between 90 and 100% of the team identify a specific team leader
Appendix E

SET Survey Results
From: [Researcher’s email address]
To: [Principals’ email addresses]
Subject: SET Survey Results

Thank you for participating in my research. I do believe the results will be valuable for your school. I currently have the School-wide Evaluation Tool survey scores ready for (attached). You will see in the spreadsheet that the responses are broken down by category and an overall score is given. The scores for this survey determine the degree of implementation of PBIS in your building, as determined by the individual or team that submitted this data. After the school year is over, I will be collecting the discipline and enrollment data for the year, and will proceed with the statistical analysis for your school, looking at the correlation between the degree of implementation of PBIS and the differences in disproportionality in school discipline. This data will be made available to you.

In the meantime, the attached SET data for your school can be put to great use for planning and goal setting for continued PBIS implementation. Please let me know if you need any support with using this data; I would be happy to work with you and/or your team on this.
Appendix F

Human Subjects Internal Review Board Approval Letter
Date: September 25, 2018

To: Sue Poppink, Principal Investigator
    Stephnie Bruce, Student Investigator for dissertation

From: Amy Naugle, Ph.D., Chair

Re: Approval not needed for IRB Project Number 18-09-33

This letter will serve as confirmation that your project titled "The Relationship between the Implementation of Positive Behavioral Interventions and Support (PBIS) and Student Demographic Groups Disproportionately Represented in Discipline Referrals" has been reviewed by the Western Michigan University Institutional Review Board (IRB). Based on that review, the IRB has determined that approval is not required for you to conduct this project because you are not collecting personal identifiable (private) information about individuals and your scope of work does not meet the Federal definition of human subject.

45 CFR 46.102 (f) Human Subject

(f) Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains:

   (1) Data through intervention or interaction with the individual, or
   (2) Identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes. Interaction includes communication or interpersonal contact between investigator and subject. Private information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.

"About whom" – a human subject research project requires the data received from the living individual to be about the person.

Thank you for your concerns about protecting the rights and welfare of human subjects.

A copy of your protocol and a copy of this letter will be maintained in the IRB files.