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The Influence of School Discipline Approaches on Suspension Rates

Donna Christy
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Donna L. Christy

has been found to be complete and satisfactory in all respects,
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the review committee have been made.

Review Committee
Dr. Karen Shafer, Committee Chairperson,
Public Policy and Administration Faculty

Dr. Raj Singh, Committee Member,
Public Policy and Administration Faculty

Dr. Meena Clowes, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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by

Donna L. Christy

MS, College of Saint Rose, 1998

BS, Russell Sage College, 1994

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Abstract

A free and appropriate public education is promised to every child in the United States. However, zero tolerance school discipline policies have broken that promise, pushing students out of the classroom and into the school-to-prison pipeline. Despite the growing body of research demonstrating negative social and economic impacts of exclusionary discipline, public school administrators have been slow to adopt innovative policies that provide rehabilitative alternatives. The purpose of this study was to compare, using the consequences of innovations application of Rogers's diffusion of innovations theory, the impact of various school district approaches to school discipline on suspension rates while controlling for race and socioeconomic status. This study used a quantitative, nonexperimental, nonequivalent groups, posttest-only research design using secondary analysis of data reported by 218 school districts in a New England state for the 2016-17 school year. Analysis of covariance indicated that there is a significant relationship between approaches to school discipline and suspension rates when controlling for racial and socioeconomic composition ($p < .05$). Race and economic disadvantage significantly influenced suspension rates ($p < .001$), and districts implementing alternatives differed significantly in their racial and socioeconomic compositions ($p < .001$). Policy implications include the promotion of alternative approaches to school discipline. Implications for social change include evidence to support the work of those addressing the needs underlying student behavior rather than crime and punishment models to produce safe and supportive schools and dismantle the school-to-prison pipeline.

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Dedication

This dissertation is dedicated first to my amazing daughter, Alina. Thank you for sacrificing too many evenings and weekends so that I could complete this goal. I hope that I have set the example that education is important and that we all have a role to play in making this world a better place. Together we will change the world!

To my father, your work in juvenile justice and social welfare throughout my childhood set me on this course. Without your loving example that all people, regardless of the mistakes they have made in life, are valued, I would not be the person I am today. You taught me that all people are doing the best they can with what they have, and it is my job to give them more, so that they can do more.

To my dear friends, Bob and Qadir, your personal histories, the difficulties you faced, the mistakes you made, and the resilience you have shown are an inspiration to me. It is because of you that I truly understand the long-lasting impact of adverse childhood experiences, and that those experiences do not have to define us. Inside the protective walls we build are hearts that need to heal.

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Table of Contents

List of Tables iv

Chapter 1: Introduction to the Study 1

Introduction 1

Background 3

Problem Statement 5

Purpose Statement 7

Research Question and Hypotheses 7

Theoretical Framework 8

Nature of the Study 9

Definitions 10

Assumptions 12

Scope and Delimitations 13

Limitations 15

Significance 16

Summary 18

Chapter 2: Literature Review 20

Introduction 20

Literature Search Strategy 22

Theoretical Foundation 23

Previous Uses of Diffusion of Innovations Theory 26

Rationale for Using Diffusion of Innovations Theory 28

Approaches to School Discipline 30
Zero Tolerance Policies 31
Rehabilitative Alternatives 37
Previous Research Approaches to the Problem 40
Summary 42
Chapter 3: Research Method 45
Introduction 45
Research Question and Hypotheses 45
Research Design and Rationale 46
Variables 46
Research Design 47
Methodology 48
Population 48
Data Collection 49
Operationalization of Variables 50
Independent Variable 51
Dependent Variable 51
Confounding Variables 51
Data Analysis Plan 52
Threats to Validity 55
Internal Validity 55
External Validity 56

Ethical Procedures 57
Summary 58
Chapter 4: Results 59
Introduction 59
Data Collection 59
Independent Variable 60
Dependent Variable 61
Confounding Variables 62
Results 63
Assumptions Testing 64
ANCOVA Results 67
Post Hoc Tests 68
Summary 77
Chapter 5: Discussion 79
Introduction 79
Interpretation of the Findings 79
Limitations of the Study 82
Recommendations 84
Implications 87
Conclusion 89
References 91

List of Tables

Table 1. Between-Subjects Factors 61

Table 2. Descriptive Statistics for Dependent Variable 62

Table 3. Regression Model for Racial Composition and Suspension Rate 62

Table 4. Regression Model for Socioeconomic Composition and Suspension Rate 63

Table 5. Tests of Between Subjects Effects 65

Table 6. Shapiro-Wilk's Tests of Normality 66

Table 7. Estimates 67

Table 8. Tests of Between-Subjects Effects 68

Table 9. Descriptive Statistics 69

Table 10. Tests of Between-Subjects Effects 70

Table 11. Multivariate Tests 70

Table 12. Tukey HSD Multiple Comparisons – Racial Composition 71

Table 13. Tukey HSD Multiple Comparisons – Socioeconomic Compositions 72

Table 14. Unadjusted and Adjusted Means 73

Table 15. Pairwise Comparisons 76

Chapter 1: Introduction to the Study

Introduction

In the United States, the provision of a free and appropriate public education has been a cornerstone of democracy (Stitzlein, 2017) and a core civil rights issue for decades (Warren, 2014). Many systemic factors have contributed to achievement gaps for racial minority and economically disadvantaged groups (Valencia, 2015). Approximately one-fifth of the black-white reading and math achievement gap can be attributed to school suspensions (Morris & Perry, 2016). Racial disproportionality in the use of exclusionary discipline, suspensions and expulsions, has grown since the adoption of zero tolerance school discipline policies throughout the United States following several high-profile school shootings in the 1990s (Curran, 2016). These shootings led to the Gun Free Schools Act of 1994 mandating that any school receiving federal funding adopt zero tolerance weapons policies (Mongan & Walker, 2012). Most districts took these policies further by determining that they would have zero tolerance for any disruption to the school environment, opening the door for school administrators to suspend and expel students for even relatively minor offenses (Irby, 2013).

As evidence linking suspensions to academic achievement, school dropout, and juvenile delinquency (Walker & Sprague, 1999) emerged, researchers discovered the presence of a school-to-prison pipeline and attributed it to zero tolerance policies (Wald & Losen, 2003). The school-to-prison pipeline has emerged as a social problem in which racial minority and economically disadvantaged students are being disproportionally suspended and expelled from school (Skiba, Michael, Nardo, & Peterson, 2002). This

exclusionary discipline negatively impacts the academic and social development of students (Ryan & Goodram, 2013) and propels students into the justice system (Heitzeg, 2009). These school discipline policies, based on a crime and punishment model, have been under review by local, state, and national education agencies as the cause of this phenomenon (Marchbanks et al., 2014). Interest groups and community organizers have formed coalitions to campaign against zero tolerance policies (Evans & Didlick-Davis, 2012). Because of this activism, there is a current trend toward reforms that restrict the use of exclusionary discipline for minor offenses, provide more due process protections, and involve innovative strategies to address misbehavior (Ruiz, 2017). Diffusion of reforms will depend on the success of alternatives to exclusion.

The topic of this study was school discipline policy and the innovative strategies in use to address misbehavior and decrease dependency on exclusionary discipline. Innovations range from a continuation of the current behaviorist tradition to more progressive and newer humanistic perspectives that use social engagement and nurture a sense of belonging, and that motivate prosocial behavior, decreasing the general need for teachers to refer students out of the classroom for disciplinary action (Milne & Aurini, 2015). The results of this study inform and support social change and current reform efforts to improve educational outcomes, particularly in majority minority communities and communities with high rates of socioeconomic disadvantage. Social change can be achieved by addressing the root causes of behavior problems, reducing reliance on exclusionary discipline, eradicating the school-to-prison pipeline, and closing achievement gaps.

This chapter includes a brief review of the literature related to this study and describes the gap in the current body of knowledge that this study fills. I also describe the social problem that this study addresses and explain the purpose of the study, connecting the social problem to the research design. After identifying the research question, hypotheses, and variables, I describe the theoretical lens I used to guide the study. The chapter concludes with discussions of my assumptions, issues of validity, and limitations.

Background

The literature related to this study includes research that has shown the diffusion of zero tolerance school discipline policies (Mongan & Walker, 2012), the expansion of these policies to a broad range of behaviors (Irby, 2013) such that students receive harsher punishments more quickly (Irby, 2014), and the criminalizing effect they have had on the educational environment while concealing a lack of public investment in student safety (Hirschfield & Celinska, 2011). While the public accepted these policies believing they were cost effective, the social and economic impacts have outweighed the benefits (Marchbanks et al., 2014) and disproportionately affect racial minorities (Van Dyke, 2016), English language learners (Burke, 2015), students with disabilities (Mitchell, 2017), and students who are gender non-conforming (Snapp, Hoenig, Fields, & Russell, 2015). When negative externalities outweigh the benefits of a policy, alternative strategies must be considered.

The literature includes rehabilitative alternatives that researchers have proposed to address the underlying causes of behavior problems, proactively reducing the need for

reactionary suspensions and expulsions (McNeill, Friedman, & Chavez, 2016). These alternatives include school-wide positive behavior interventions and supports (Feuerborn & Tyre, 2016), restorative justice practices (Lustick, 2017), trauma sensitive schools (Plumb, Bush, & Kersevich, 2016), and full-service community schools (Min, Anderson, & Chen, 2017). For these alternatives to be considered for widespread diffusion, it is necessary to evaluate their effectiveness to reduce suspensions in side-by-side comparison.

Much of the research in this area has been retrospective or qualitative, thereby creating a need for empirical, quantitative evidence to support researchers interpretations (Hirschfield & Celinska, 2011; Irby, 2013; Milne & Aurini, 2015; Morrison & Vaandering, 2012). Studies have had limited generalizability due to small sample sizes, the insufficient variability of settings, and limited geographic coverage (Flannery, Fenning, Kato, & McIntosh, 2014; Longstreth, Brady, & Kay, 2013). The evaluations researchers have completed are limited to single districts with a single approach to school discipline (Osher, Poirier, Jarjoura, Brown, & Kendziora, 2014; Thompson, 2016). Researchers have not compared the effectiveness of reform efforts already in progress to academic indicators, nor to other approaches (Flannery et al., 2014; Gregory, Clawson, Davis, & Gerewitz, 2015; Longstreth et al., 2013; Morrison & Vaandering, 2012). Studies evaluating the effectiveness of reforms have not been long enough to capture the full implementation effect (Flannery et al., 2014; Gregory et al., 2015). I thus determined that it was crucial to conduct quantitative research to determine which reform efforts have had a statistically significant impact on suspension rates to guide policy and funding

decisions. This study filled this gap by providing an evaluation of the relationship between alternative policy initiatives to suspension rates in a side-by-side comparison.

Problem Statement

The specific problem of interest was school discipline policies that rely heavily on suspensions, excluding students from the learnng environment, which can lead to poor post-secondary outcomes and disproportionately impact racial minorities and students living in proverty (Anderson & Ritter, 2017; Heitzeg, 2009). The school-to-prison pipeline is one of the most critical problems facing public education since the massacre at Columbine High School on April 20, 1999 spurred the expansion of zero tolerance school discipline policies. Zero tolerance policies mandate suspension or expulsion for specified drug and gun offenses, but are often applied to less serious offenses, escalating to more severe disciplinary responses more quickly, including the involvement of the juvenile justice system for infractions that previously would have been considered typical adolescent misbehavior (Irby, 2013). School discipline policies that set a low threshold for exclusionary discipline and bring a crime-based mindset to the educational environment are misaligned with student educational interests (Hirschfield & Celinska, 2011). These practices have facilitated school disengagement by high school students (Flannery et al., 2014).

Despite reform efforts now underway to reverse zero tolerance policies and restrict the use of exclusionary discipline, an estimated 2,635,743 students received one or more out-of-school suspensions, 568,234 received in-school suspensions, and 111,215 students were expelled during the 2013-14 school year (U.S. Department of Education

Office of Civil Rights, 2017). In addition, there were 192,219 referrals to law enforcement and 60,170 school-related arrests (U.S. Department of Education Office of Civil Rights, 2017). The overuse of exclusionary discipline has negatively impacted graduation rates and other post-secondary outcomes (Gregory et al., 2015; Heitzeg, 2009). Specifically, nearly one-fifth of public school students fail to complete high school within four years (National Center for Education Statistics, 2015).

A possible cause of the limited impact of policy reform efforts is that policies and approaches are not consistent across all states, among local education agencies (LEAs) within a state, or even among schools within the LEAs. The study of school discipline policies to inform reform efforts is a relatively young area with many deficiencies. While researchers have focused on why zero tolerance policies were adopted (Berlowitz, Frye, & Jette, 2017; Hirschfield & Celinska, 2011; Irby D. J., 2014; Mongan & Walker, 2012), defining and proving the existence of the school-to-prison pipeline by linking zero tolerance policies to poor educational outcomes (Heitzeg, 2009; Maag, 2012; Mallett, 2016a; Marchbanks et al., 2014; Morrison & Vaandering, 2012; Mullet, 2014; Wald & Losen, 2003), linking the pipeline to institutionalized racism (Dancy, 2014; Mizel et al., 2016; Skiba et al., 2002), and investigating specific alternatives (Bowen & Murshid, 2016; Flannery et al., 2014; Gregory et al., 2015; Joseph, 2013; Milne & Aurini, 2015; Osher et al., 2012; Pinkelman, McIntosh, Rasplica, Berg, & Strickland-Cohen, 2015; Varnham, 2005), to date there has been minimal formal assessment of the reform efforts that have taken place. Therefore, I developed this study to provide a formal assessment of these reform efforts to determine if the proposed alternative strategies can effectively

reduce the number of students trapped in the school-to-prison pipeline. I did this by considering the relationship of alternative school discipline approaches to suspension rates.

Purpose Statement

The purpose of this nonexperimental, causal comparative, quantitative study was to compare the impact of various school district approaches to school discipline used throughout Massachusetts (i.e., standard state policy, restorative practices, trauma sensitive schools, and full service community schools) on suspension rates while controlling for racial and socioeconomic composition. Massachusetts has been an early adoptor of alternatives, with legislative support to fund district-wide trainings such as the Safe and Supportive Schools grant program and other alternative education grants of fiscal year 2012-2013 that funded five districts to become trauma sensitive (Massachusetts Department of Elementary and Secondary Education, 2013). Massachusetts organizes public school districts according to a feeder system, meaning that each district is composed of a high school with the middle and elementary schools that feed into it, resulting in 218 public and public charter school districts serving grades K-12. In this study, I intended to determine which approaches to school discipline are most successfully reducing suspension rates.

Research Question and Hypotheses

The following research question and hypotheses guided this study:

RQ: How do suspension rates vary when school districts implement different approaches to school discipline when controlling for the racial and socioeconomic composition of the districts?

H_0: There is no relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition.

H_1: There is a relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition.

Theoretical Framework

Rogers's (1995) diffusion of innovations theory posits that adoption of a policy depends on an interaction of internal motivational factors, resources, obstacles, other policies, and government influence. Researchers can use this theory to understand why a policy was or was not adopted, or why adoption took varying forms. Even when other governments in the same system are implementing a policy, others may not if the internal conditions are not fertile, or they may apply them differently to adjust for internal factors (Rogers, 1995). Previously, researchers have employed diffusion of innovations theory to consider how and why innovations are diffused (Homburg, Dijkshoorn, & Thaens, 2014; Ke & Huang, 2014; Papaioannou, Watkins, Kale, & Mugwagwa, 2015), describe processes and attributes that facilitate innovation diffusion (Bish, Newton, & Johnston, 2015; Sundstrom, Billings, & Zenger, 2016; Zulu, Hurtig, Kinsman, & Michelo, 2015), and consider the consequences (positive and negative) of innovations (Angeles, Dolovich, Kaczorowski, & Thabane, 2014; Fabry, 2015; Hanrahan et al., 2015). I followed this tradition by considering the consequences, or impact, of adopting

innovative policy solutions intended to reduce districts' dependency on exclusionary discipline.

In Chapter 2, I use this theoretical model to understand how the school-to-prison pipeline became a nationwide concern as all states adopted zero tolerance school discipline policies, but only some states have since engaged in reform efforts and adopted alternative policies. As educational leaders and lawmakers in some states became aware of the social problems associated with zero tolerance policies, they began to look for alternatives. This theoretical model provides an explanation for why some local and state education agencies follow leaders in adopting alternative policies because of imitation, while laggards wait to learn if the alternatives are effective before adopting them (Rogers, 1995). This study was intended to fill a gap in current research and provide laggards with an assessment of the effectiveness of alternatives needed for them to make informed decisions about adoption and further diffusion of these alternative approaches to school discipline.

Nature of the Study

To measure the differences in suspension rates between school districts implementing alternative school discipline policies, I employed a quantitive reseach approach. This quantitative study required a nonexperimental design because random assignment of the independent variable was not possible. Specifically, I used a nonequivalent groups, posttest only design. This design allowed comparison of group differences after the school discipline approach had been implemented. It was important to use this research design to identify effective and ineffective reform efforts and

determine which efforts should be further diffused and which should be abandoned or modified to improve effectiveness. The independent variable was the approach to school discipline that school districts have adopted, measured as a categorical variable. The dependent variable was suspension rate, measured as a continuous variable. The covariates were racial and socioeconomic composition, measured as continuous variables.

I collected secondary data from state reports for the dependent variable, suspension rate, and the covariates, racial and socioeconomic composition. The independent variables were identified based on information gathered from school district websites and recipients of the Safe and Supportive Schools grants reported on the Massachusetts Department of Elementary and Secondary Education (MA-DESE) website. The data analysis plan included analysis of covariance (ANCOVA) with post hoc testing that included multivariate analysis of variance (MANOVA), analysis of variance (ANOVA), and Bonferroni pairwise comparisons.

Definitions

School discipline: School discipline refers to the combination of rules, strategies, and practices used in schools to manage student behavior schoolwide and in classrooms, as well as to address the needs of individual students through prevention and intervention (American Institutes of Research, 2018).

Massachusetts school discipline regulations: All statewide laws and regulations pertaining to school discipline in Massachusetts as compiled by the U.S. Department of

Education and verified by the state education agency (U.S. Department of Education, 2017).

Schoolwide positive behavioral interventions and supports (SW-PBIS): A systems change process that includes a multi-tiered approach to teaching behavioral expectations as a core curriculum subject for an entire school or district (U.S. Department of Education, Office of Special Education Programs, 2018).

Restorative justice practices (RJP): A non-punitive approach to handling conflict that includes restorative conferencing and mediation between victims, offenders, and the community emphasizing repairing relationships resulting in reconciliation and reacceptance of the wrongdoer (Fronius, Persson, Guckenburg, Hurley, & Petrosino, 2016).

Trauma sensitive schools (TSS): A school environment facilitated by linking mental health and staff training to instructional practices and strategies that help traumatized students be successful (MA-DESE, 2018).

Full service community schools (FSCS): Schools that provide comprehensive services to students, families, and community members through partnerships with public and private entities (U.S. Department of Education, Office of Innovation and Improvement, 2018)

Suspension rate: Calculated by dividing the number of students disciplined by the number of enrolled students as reported in the MA-DESE Student Discipline Days Missed Report (MA-DESE, 2017).

Economic disadvantage: Based on student participation in one or more of the following state-administered programs: Supplemental Nutrition Assistance Program, Transitional Assistance for Families with Dependent Children, Department of Children and Families foster care program, or MassHealth (MA-DESE, 2015).

Assumptions

In this study, I made several assumptions regarding aspects of the study that I took to be true, but whose veracity was unverifiable. First, I assumed that all districts, at a minimum, follow the state schools discipline laws and regulations set forth by the MA-DESE. I also assumed that all public schools in Massachusetts are accurately recording and reporting required data to MA-DESE and that MA-DESE is accurately reporting the data in its statewide reports. Finally, I assumed that schools are implementing the approaches to school discipline with consistency and as intended. Implementation fidelity may impact the effectiveness of the alternative approach to reduce suspension rates (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Assessing implementation fidelity may be a direction for future research in this area. These assumptions were necessary for the context of this study because it was not feasible for a single researcher to directly supervise implementation, data collection, and data reporting in every school or at MA-DESE.

I also made methodological assumptions when employing ANCOVA. ANCOVA includes one continuous dependent variable, one independent variable with two or more categorical groups, one or more continuous covariates, and independence of observations (Huitema, 2011). I assumed that the covariates were linearly related to the dependent

variable for each group of the independent variable and that there was homogeneity of regression slopes (Huitema, 2011). To use ANCOVA, I also assumed a normal distribution of the dependent variable at each level of the independent variable, homoscedasticity, homogeneity of variances, and the absence of significant outliers (Huitema, 2011).

Scope and Delimitations

The problem of the school-to-prison pipeline includes many factors such as truancy (Mallett, 2016c), educational disabilities (Bell, 2016), mental health (Emmons & Belangee, 2018), and juvenile delinquency (Shippen, Patterson, Green, & Smitherman, 2012), but this study was focused on school discipline policies, the use of suspension and expulsion as a response to rule breaking, and the roles that race and socioeconomic status play in application of exclusionary discipline. Researchers have considered zero tolerance school discipline policies to lie at the root of the pipeline since it was first defined (Wald & Losen, 2003). As further demonstrated in the literature review in Chapter 2, racial minorities and economically disadvantaged students have been disproportionately suspended and expelled from schools (Roch & Edwards, 2017). Therefore, I controlled for these variables in the data analysis plan to maintain internal validity of the comparisons between the various school discipline approaches.

The scope of this study was limited to the Commonwealth of Massachusetts. Including the entirety of the United States, with more than 14,000 school districts (U.S. Departmet of Commerce, 2012) was unfeasible. Massachusetts was chosen for several reasons. There are very few states other than Massachusetts that are implementing all the

alternative approaches considered in this study. Specifically, Massachusetts has been developing and piloting a framework for trauma sensitive schools since 2004 (Trauma and Learning Policy Initiative, n.d.) making it a leader in this area. Massachusetts is also currently ranked as having the best K-12 education system in the country by several sources (Editorial Projects in Education, 2018; McKinsey & Company, 2018; Stebbins & Frohlich, 2018) making it a leader in education policy that other states are looking to follow. For example, in a search of the Maryland Commission on Innovation and Excellence in Education's Preliminary Report, I found that the commission referred to Massachusetts 54 times to support its recommended policies (Kirwan, 2018). In addition, the structure of the Massachusetts public school districting, with nearly all districts comprised of a single high school and the elementary and middle schools that feed into them, was conducive to using district level data in this study.

When defining the population of school districts to include in the population of this study, it was necessary to eliminate some districts. Massachusetts has two virtual school districts in which students receive online instruction. These districts were eliminated from the population because they would not be subject to the same disciplinary rules and procedures as students attending traditional brick and mortar schools. Also excluded were districts that do not provide all grades Kindergarten through Grade 12. Districts that only serve grades Kindergarten to Grade 6 are not expected to be comparable to districts that only serve Grades 9-12. Therefore, to limit data collection to comparable districts, I limited the population to districts that serve all grades Kindergarten through Grade 12.

Although the discipline data for the students attending the excluded districts was not included in this study, the population of districts included provided complete geographic coverage of the state. The population included urban, rural, and suburban districts, as well as the full range of socioeconomic conditions. Therefore, I expected a high level of external validity. The results of this study can be generalized to other states considering the adoption and diffusion of these policy innovations.

I considered but decided against using social reproduction theory as the theoretical framework for this study. Social reproduction theory provides an understanding of how school discipline policies may transmit achievement and socioeconomic disparities from one generation to the next (Bourdieu & Passeron, 1990), but does not provide an explanation for the adoption and diffusion of alternative approaches to school discipline specifically intended to disrupt the school-to-prison pipeline.

Limitations

According to Ravitch and Carl (2016), it is important for researchers to assess and document their positionality in relation to the research topic so that they can identify and manage their own biases. As a school psychologist for 20 years, I have worked closely with teachers to manage and improve student behavior. However, I am not responsible for maintaining order in a classroom on a regular basis and I have not been faced with the challenge of teaching amidst disruptive and disrespectful students. As a fellow educator, I am accepted by teachers as a colleague and generally regarded as an expert advisor. As a union leader I am viewed as an advocate for teachers and protective of their rights. As

a school psychologist, I am also an ardent advocate for my students and believe that they cannot learn if they are excluded from the classroom. I recognize that I am biased in opposition to zero tolerance policies and in support of more positive interventions that improve student behavior while maintaining them in the learning environment.

Consistent with its positivist tradition, for which there is only one reality or truth regardless of the researcher's perspective (Whetsell & Shields, 2015), quantitative research methodology, such as the one used for this study, avoids allowing bias to impact the study by applying a rigorous process that distances the researcher from the participants to provide objectivity (Quick & Hall, 2015). Given my adherence to standard statistical procedures that had been carefully planned to analyze secondary data collected and reported by a third party through institutional procedure, the results of this study were based on an objective process and not influenced by bias.

Significance

This study was necessary to fill the gap in the current literature by providing policymakers with the feedback they need to promote and diffuse innovations that are reducing suspensions. Local, state, and national education policymakers such as education agencies and the legislative bodies that appropriate the funding for them, are likely to be interested in aspects of the study that focus on the benefits of reform efforts such as improving academic outcomes and decreasing the economic factors related to grade retention and dropout (Marchbanks et al., 2014). The high economic costs to the community created by the school-to-prison pipeline has created a need for substantive review and reform of current policies (Longstreth et al., 2013; Marchbanks et al., 2014).

Policy reforms have ranged from a continuation of the current behaviorist tradition, to more progressive and newer humanistic perspectives that use social engagement and the nurturing of a sense of belonging that motivates prosocial behavior, decreasing the general need for teachers to refer students out of the classroom for disciplinary action (Flannery et al., 2014; Gregory et al., 2015; Milne & Aurini, 2015; Morrison & Vaandering, 2012).

This study of school discipline reform efforts is likely to hold interest for a variety of other audiences concerned with building strong communities. Social justice activists may be interested in the effectiveness of reform efforts to resist and reverse the criminalization of students, particularly where current practices create disproprionality for specific groups such as males, minorities, and those of lower socioeconomic status (Hirschfield & Celinska, 2011). Social justice advocacy groups have begun to use evidence from research validating the existence and causes of the school-to-prison pipeline to lobby for reforms to local and state school discipline policies. However, more research is needed to determine whether such changes are addressing the problem and which approaches are most effective. Finally, this study could be used to improve buy in from stakeholders, such as professional educators, who will be most impacted by reform efforts and whose participation is necessary for effective implementation (Flannery et al., 2014).

The positive social change that will result from this study is the identification of the most effective approach or approaches to address student misbehavior to disrupt and dismantle the school-to-prison pipeline. The school-to-prison pipeline is a social justice

issue that needs to be addressed through effective policies and appropriate practices. In this study, I sought to evaluate the policies and practices that are believed to influence the flow of individuals from the schoolhouse to the jailhouse. The public's welfare is significantly impacted by the effectiveness of our nation's public schools because they have direct effects on the employability of the citizens, property values, public safety, and the sustenance of democracy through a literate electorate.

Summary

School discipline policies that exclude students from the learning environment promote a cycle of academic failure and pushes them out of economic opportunities and into the school-to-prison pipeline (Curran, 2016; Marchbanks et al., 2014; Ryan & Goodram, 2013). Recent school discipline reform efforts have promoted innovative strategies that seek to reduce dependency on exclusionary discipline by addressing the underlying causes of problematic behavior (Flannery et al., 2014; Fronius et al., 2016; McNeill et al., 2016; Min et al., 2017; Plumb et al., 2016). In this study, I sought to determine the effectiveness of these approaches to reduce suspension rates.

This chapter provided a brief overview of this study and Rogers's (1995) diffusion of innovations theory that I used as a lens to understand the need to evaluate the effectiveness of alternative approaches to school discipline and inform policymakers' future reform efforts. The variables in question were defined and the assumptions required to make this study feasible were outlined. I also provided a rationale for the specific focus of this study, identified necessary boundaries, disclosed limitations and biases, and considered the significance of this study for promoting positive social change.

Chapter 2 includes an in-depth review of the literature to identify the gap that this study fills. In it, I offer a more detailed explanation of the theoretical foundation for the study and review previous applications of the diffusion of innovations theory (Rogers, 1995). I thoroughly examines zero tolerance policies and the negative consequences attributed to them. I also review current literature examining alternative school discipline policies to identify what researchers currently known and do not known about schools' abilities to effectively close the school-to-prison pipeline.

Chapter 2: Literature Review

Introduction

The school-to-prison pipeline, through which elementary and secondary students are pushed out of the educational system and into the justice system because of exclusionary discipline practices, is a relatively young area of interest with the first articles on the topic appearing in a 2003 special issue of *New Directions for Youth Development*. The school-to-prison pipeline describes the poor outcomes of chronic suspensions and expulsions caused by excluding children from the classroom and limiting their access to instructional resources. These exclusions lead to school disengagement, drop-out, and unfortunate post-secondary outcomes such as limited income potential and criminal activity (Flannery et al., 2014; Gregory et al., 2015). The school-to-prison pipeline has been attributed to the zero tolerance school discipline policies of the 1990s and further criminalization of the educational environment in response to incidents of school violence. These policies and practices have been shown to disproportionately affect minorities, particularly black males and low-income students (Skiba et al., 2002). As this problem has been exposed to policymakers, the United States Department of Education issued guidance on school discipline (Duncan, 2014), prompting local and state educational agencies to begin experimenting with alternative approaches and placing restrictions on the use of exclusionary discipline. The purpose of this study was to evaluate the effectiveness of these alternatives in reducing suspension rates.

According to diffusion of innovations theory (Rogers, 1995), it is important to understand the changes that result from the adoption of public programs and policies. Researchers have shown the negative social and economic consequences of zero tolerance policies that have led to the school-to-prison pipeline and have disproportionately impacted African American students, low income students, students with disabilities, English language learners, and gender nonconforming youth (Anderson & Ritter, 2017; Burke, 2015; Faria et al., 2017; Marchbanks et al., 2014; Mitchell, 2015; Palmer & Greytak, 2017). Alternative learning centers that offer educational services to students while they are suspended or expelled, and progressive discipline policies that allow more discretion in the application of exclusionary discipline but continue to mandate suspension or expulsion for specific violations have been implemented in some states and districts, but these alternatives fail to address the underlying conditions that contribute to disruptive behavioral patterns and chronic cycles of exclusion (Kennedy-Lewis, 2015; Milne & Aurini, 2015).

In the current literature, researchers have considered rehabilitative alternatives including restorative justice practices, school-wide positive behavior interventions and supports, full-service community schools, and trauma sensitive schools that offer approaches to address underlying conditions and disrupt the school-to-prison pipeline (Armour, 2016; Lamont et al., 2013; Phifer & Hull, 2016; Sanders, 2016). Each of these alternatives have been implemented through limited pilot programs on a trial basis. Greater public investment to diffuse adoption of these innovations requires evidence that

they can produce positive consequences such as significant reduction of incidence of disruptive behavior (Rogers, 1995).

In this chapter, I review the literature germane to this study. After describing my literature search strategy, I lay the theoretical foundation connecting Rogers's diffusion of innovations theory to current school discipline reform efforts. In addition, I review the literature related to the innovations of interest, previous research approaches taken, and justification of the variables selected for study.

Literature Search Strategy

The literature search process began with a year-by-year search of the term *school-to-prison pipeline* in Google Scholar to find the origin of the term. Then I generated a variety of search terms to use individually and in combination using Boolean operators. Search terms included *school-to-prison pipeline, school discipline, zero tolerance, criminalization, disproportionality, institutionalized racism, poverty, progressive discipline, positive behavior interventions, restorative justice, restorative practices, community schools, trauma sensitive schools, suspensions*, *exclusionary discipline*, and *diffusion of innovations*.

In addition to Google Scholar, I gathered literature using databases accessed via the Walden University library including Thoreau, Political Science Complete, Business Source Complete, SocINDEX, SAGE Journals, and ERIC. Articles were verified to be from peer-reviewed journals using Ulrich's Periodical Directory. After determining that the literature on the school-to-prison pipeline emerged in 2003, I often restricted searches to the last 5 years to prioritize attention to the most current findings. Additional literature

was added by searching for specific sources referenced in articles. These included books, reports from government agencies and nonprofit organizations, and policies, legislation, and grant programs.

Theoretical Foundation

Rogers's (1995) diffusion of innovations theory provided the foundation for this study. Researchers have used diffusion theory to explain the mechanisms through which new policy innovations are developed and adopted across subnational governments (Berry & Berry, 2014). Consensus has formed around learning, imitation, and competition as mechanisms that drive the propagation of policies (Anderson et al., 2016). Normative pressure (Maggetti & Gilardi, 2016) and coercion (Shipan & Volden, 2008) mechanisms have also been distinguished. This study falls into the *consequences of innovation* type of diffusion research (Rogers, 1995), and I conducted it to stimulate the learning mechanism for school discipline reform adoption.

The beginning of diffusion research was rooted in sociology as an explanation for changes in human group behavior. The French sociologist Gabriel Tarde (1903) applied his laws of imitation directly to diffusion of policy innovations from family to city to province to nation through "contagious imitation, the tendency to copy the legislative and juristic innovation" (p. 312). Around the same time, diffusionism emerged as a school of thought in anthropology to describe the transmission of culture across geographical and migratory patterns (Eriksen & Nielsen, 2013). Educational diffusion research arose from Columbia University's Teachers College as studies of the influence of local control of schools on innovation (Rogers, 1995).

There are four primary elements that define the process of innovation diffusion (Rogers, 1995). The first is the innovation itself. In the case of public policy, an innovation is a new (or perceived as new) practice. Governments wanting to more efficiently and effectively meet the demands of the public have become more willing to try innovations to deal with intransigent problems (Sørensen, 2017). The second element is the channel of communication through which information about the innovation is shared. Governments' abilities to learn about policy successes from other governments is vital to the adoption of innovative policies (Boehmke, Rury, Desmarais, & Harden, 2017; Butler, Volden, Dynes, & Shor, 2017). Third is the time it takes for an innovation to pass from first knowledge to adoption or rejection, or the rate at which an innovation is adopted. Boehmke et al. (2017) advised that advocates for policy innovations could increase the rate of policy adoption by targeting the states that other states count as their top sources for imitation. The final element is the social system or structure that is engaged in the problem-solving process. Using the Affordable Care Act (ACA) as an example, Conti and Jones (2017) suggested a larger ecosystem that involves competing and complementary state and local policies, along with the ability for suppliers of medical care to meet the increased demands interacting to influence adoption of ACA provisions.

The innovation-development process first begins with the identification of a problem or unmet need (Rogers, 1995). In this case, the problem of the school-to-prison pipeline was first identified and defined by Wald and Losen (2003). The next stages involve research of factors contributing to the problem and possible solutions,

development of innovations, marketing and distribution of the innovative policies and/or programs (commercialization), diffusion and adoption of the innovations by early adopters on a trial bases, and finally, assessment of the consequences or outcomes of the innovation to inform expansion of the innovation (Rogers, 1995). The innovation development process overlaps with the innovation-decision process.

As the research and development stage of the innovation-development process progresses, advocates begin to stimulate the innovation-decision process. Special interest groups use research findings to frame the issue and strategically communicate model legislation with government officials around the social problem and their innovative solutions (De Bruyker, 2017; Garrett & Jansa, 2015). Social and mass media are engaged to show the saliency of the problem and open policy windows by generating normative pressure to persuade decision makers to seek and adopt innovative solutions (Boushey, 2016; Mackie, Sheldrick, Hyde, & Leslie, 2015; Rice, 2017; Rogers, 1995). As early adopters decide to implement innovations and put them into use, feedback from trials leads to diffusion through learning and re-invention of the innovation in the confirmation stage (Butler et al., 2017; Karch & Cravens, 2014; Nicholson-Crotty & Carley, 2016; Park, Wilding, & Chung, 2014; Shipan & Volden, 2008).

The rate of diffusion of an innovation depends on a number of factors. Innovations perceived as a relative advantage over prior practice are more likely to be adopted (Hartzler, 2015), particularly when innovations are compatible with the political ideology of the prevailing party (Anderson et al., 2016; Butler et al., 2017). However, when perceived relative advantage is greater than actual advantage, some innovations are

over-adopted and enjoy widespread diffusion despite a lack of evidence to support them (Adam, 2016; Boushey, 2016; Butz, Fix, & Mitchell, 2015). Another factor is compatibility with current values, trends, and needs. The complexity of an innovation and the complexity of the social system targeted for intervention will impact rate of adoption because more complicated innovations and systems will present more barriers to implementation (Lewis, Taylor, DiSarro, & Jacobsmeier, 2014; Mâsse, Naiman, & Naylor, 2013; Rohrbach, D'Onofrio, Backer, & Montgomery, 1996). Innovations that can be experimented with on a limited basis will improve the rate of adoption (Hayes, Eljiz, Dadich, Fitzgerald, & Sloan, 2015; Pashaeypoor Ashktorab, Rassouli, & Alavi-Majd, 2016; Wu & Liu, 2015). Finally, the degree to which the outcome of an innovation is observable and measurable will promote rate of adoption (Hartzler, 2015; Hayes et al., 2015; Pashaeypoor et al., 2016).

Previous Uses of Diffusion of Innovations Theory

Diffusion of innovations theory has been used by public policy researchers in a variety of ways including to determine how policy makers become aware and gain knowledge of innovations (Rogers, 1995). In their study of how and why public electronic services were diffused throughout the Netherlands, Homburg et al. (2014) used diffusion of innovations theory to reveal how horizontal and vertical persuasive pressures are applied by advocates for innovations through framing an innovation in relation to the priorities and goals of the stakeholders rather than specific opportunities or cost-benefit analysis. Ke and Huang's (2014) exploration of how and why a literacy program was adopted also revealed the importance of knowledge sharing through

information networks with localities primarily accepting the endorsement of an innovation vertically from higher levels of government. Diffusion of innovations theory was used by Papaioannou et al. (2015) to demonstrate the role of associations and organizations within an industry on the policy process as diffusers of information.

Often the knowledge being shared are the consequences of the innovation, as laggards look to early adopters to learn which innovations are effective and which ones to avoid, therefore, program evaluation has been another use of diffusion of innovations theory. Hanrahan et al. (2015) used Roger's diffusion of innovations in their study of evidence-based nursing practices as replacements of a phenomenon they branded "sacred cows" which are old habits and practices that persist despite evidence of their ineffectiveness. Diffusion of innovations was used to evaluate the spread of hourly rounds for nurses as knowledge of the benefits of the practice was disseminated (Fabry, 2015). Brooks, Brown, Davis, and Lebeau (2014) used diffusions of innovations theory to evaluate the adoptability of an education engineering program based on how well the program's design met the characteristics of relative advantage, complexity, and compatibility. Angeles et al. (2014) similarly demonstrated the use of diffusion of innovations as a theoretical framework in their evaluation of a cardiovascular health awareness program to understand how the elements of the program interacted to influence adoption of the program by individuals. Hodges (2017) proactively infused concepts from diffusion of innovations theory, such as compatibility and trialability, into the planning and implementation phases of a health promotion program to identify and remove potential barriers to adoption. Breslau, Weiss, Williams, Burness and Kepka

(2015) used diffusion of innovations as a framework to organize the results of their qualitative evaluation of the implementation of a program to encourage cancer screenings according to the challenges and facilitators in the adoption and adaptation stages.

Diffusion of innovations theory is often used by researchers to describe the process through which their innovative program was spread. In a study of change in human resource policy, Bish et al. (2015), learned that administrators' abilities to effectively communicate a vision of change to employees facilitated buy in and diffusion of the policies using the theory to guide their analysis. Sundstrom et al. (2016) used diffusion of innovations as a framework to analyze the effectiveness of a campaign to promote use of a contraceptive method. Zulu et al. (2015) used the theory to describe the contextual and community processes, as well as the social factors, that contributed to the diffusion of community health assistants to fill a gap in the health system of Zambia.

Rationale for Using Diffusion of Innovations Theory

The current study fits into diffusion of innovations theory as it seeks to evaluate innovations that have been proposed to address the problem of the school-to-prison pipeline. These innovations have been piloted on a trial basis in a number of schools and feedback is needed to determine which ones warrant continued diffusion and which ones should be discontinued. The first 10 years from 2003-2013 was a period of problem recognition with research and development of innovative solutions. Many grassroots organizations have been hard at work persuading decision makers to try their programs and policy solutions (Evans & Didlick-Davis, 2012). Each one has positive and negative

attributes affecting its rate of adoption. All of the proposed innovations have been able to benefit from trialability due to the localized control of school districts.

Diffusion of innovations theory provides a framework to understand how innovations start out as localized trials and are then diffused through a policy decision making process. A key ingredient of this process is assessment and evaluation of the various innovations as options to solve a social problem. Most policy makers will follow the lead of early adopters. With competing options available, it can be difficult for policy makers to know which innovations will be the most effective option to fit the unique needs of their population. Research into the consequences of an innovation, or the changes that result from an innovation, is an important, but underused, type of diffusion research (Rogers, 1995). Rogers (1995) suggests that the barriers to this type of research include biased assumptions that innovations of interest produce positive outcomes, the fact that the consequences of an innovation are often not measurable for several years after adoption, and difficulties in identifying measurable outcome variables. This study was uniquely able to fill this gap by comparing the direct, anticipated consequence, of innovative rehabilitative alternatives to zero tolerance school discipline models several years after implementation of pilot programs within a state public education system. The research question defined the independent variable in terms of the innovations being piloted and the dependent variable as suspension rates, which are the direct, anticipated consequence.

Approaches to School Discipline

As the negative consequences of zero tolerance school discipline policies have been revealed, school administrators and policy makers have been considering a variety of alternative options. Restorative justice practices benefit from the relative advantage of consistency with social justice values, but requires a shift in culture and mindset to generate buy in from the school staff charged with implementation (Armour, 2016). Restorative justice practices seek to build positive student-teacher relationships before, during, and after rule breaking behavior occurs and a growing body of research in this area shows some preliminary results that are promising, but there have been significant implementation challenges related to complexity (Gregory et al., 2015). Progressive discipline is compatible with current discipline practices and simple to implement through revision of school discipline policies, but does not address racial and economic disproportionality concerns (Milne & Aurini, 2015). Positive behavioral interventions and supports are consistent with current behaviorist approaches to behavior modification with systems of rewards for positive behaviors (McNeill et al., 2016), but are inconsistent with the trend toward more humanistic approaches. Community schools address the underlying needs of students and their families, but are expensive to develop and implement. Trauma sensitive schools, the youngest innovation, lacks name recognition and addresses adverse childhood experiences that are often difficult to discuss due to stigmas attached (McConnico, Boynton-Jarrett, Bailey, & Nandi, 2016).

Zero Tolerance Policies

Zero tolerance school discipline policies inflexibly prescribe suspensions and expulsions for behavioral infractions. They do not allow for student history, mitigating circumstances, or severity to be considered in the application of punishments that have long lasting consequences (Mitchell, 2015). These policies were widely diffused as the result of federal coercion through The Gun Free Schools Act of 1994 (P.L. 103-382, §14601) which provided federal public education funding in exchange for state laws requiring local school districts to expel students for a mandatory one year minimum if they are found to be in possession of a firearm on school property. However, some states had already implemented zero tolerance policies of varying degrees prior to the 1994 Act (Mongan & Walker, 2012). As states developed and adopted their own versions of zero tolerance policies, they were expanded to include broader definitions of weapons and school property, drug possession, and additional infractions, including nonviolent offenses, that would receive mandatory suspensions or expulsions (Irby, 2013). The effect of these expansions was to both broaden and deepen the use of exclusionary discipline, such that students experience more significant consequences sooner and for a greater variety of offenses, pushing students out of school with limited economic prospects (Irby, 2014). The zero-tolerance approach to student behavior also gave rise to the further criminalization of the educational environment with the additions of security cameras, metal detectors, school police and resource officers, and referrals to juvenile court (Fedders, 2016; Hirschfield & Celinska, 2011). However, increased security measures fail to reduce problem behaviors (Gerlinger & Wo, 2016). These policies

concealed a lack of investment in public education in a way that gave the appearance of addressing problem behaviors that interfered with the learning process while failing to address the underlying conditions that contribute to student behavior (Hirschfield & Celinska, 2011).

Zero tolerance policies have been embraced by educators, entrenched in behaviorist philosophies, believing that the consistency of such measures is a necessary element of school discipline and that they will produce disciplined students, academically oriented cultures, and orderly schools (Irby & Clough, 2015). Teachers and school administrators often struggle to see alternatives to zero tolerance as effectively able to deal with behaviors that they believe to be grounded in the cultural norms of racial minorities (Berlowitz et al., 2017). However, educators with relational, humanistic perspectives reject the need for consistency in school discipline practices, recognize that behaviors and situations are unpredictable and variable and assert that teaching internalized locus of control and developing intrinsic motivation more effectively produces students that choose to follow rules (Irby & Clough, 2015). Attending to the relational dynamics of the educational environment offers improved educational outcomes (Anyon, Zhang, & Hazel, 2016)

The public accepted these policies based on a misperception of schools as unsafe perpetuated by mass media coverage of school shooting incidents that, while horrific, are isolated and rare considering the number of schools operating on a daily basis without incident (Cornell, 2015). Research has demonstrated that not only are exclusionary

discipline practices ineffective at reducing problem behaviors, the negative impacts outweigh any possible benefits (McNeill et al., 2016).

Social and economic impact. While zero tolerance policies were supposed to bring with them a new era of safer schools, their impact to students and society has been costly. Student suspensions, both in school and out of school, are associated with lower grades and are a strong early predictor and indicator of school dropout (Cholewa, Hull, Babcock, & Smith, 2017; Faria et al., 2017). Marchbanks et al. (2014) estimate that exclusionary discipline practices in Texas increase school dropouts by 24% with an economic impact between $750 million to $1.35 billion per year in increased costs and lost wages, an estimate that does not include the costs of incarcerations.

The isolation of exclusionary practices is more likely to generate feelings of social alienation that accelerate school violence than it is to make schools safer (Buckmaster, 2016). Students who experience a persistent cycle of exclusion, perpetuated by being labelled as "bad," perceive social and educational systems as inherently unjust that they are powerless to challenge (Kennedy-Lewis & Murphy, 2016). As adults, students who were suspended during their K12 years are more likely to experience criminal victimization, criminal involvement, and incarceration (Wolf & Kupchik, 2017) The racial discipline gap significantly decreases feelings of connectedness to school (Anyon et al., 2016).

Disproportionality. Since the adoption of zero tolerance policies, there have been larger increases in suspension rates for black students than for white students and the presence of state zero tolerance laws are predictive of black-white suspension gaps

(Curran, 2016). African Americans are consistently overrepresented in exclusionary discipline data (Brown & Steele , 2015; Cholewa et al., 2017; Van Dyke, 2016). Majority minority schools also tend to rely more heavily on exclusionary discipline practices (Roch & Edwards, 2017). A study of the use of exclusionary discipline in Massachusetts schools found that while black and white students were similarly involved in fights at schools, black students received exclusionary discipline 25% of the time compared to 15% of the time for white students (Gastic, 2017). Black students are significantly more likely to be suspended for subjective offenses such as disrespect, insubordination, and disruption than their white peers (Heilbrun, Cornell, & Lovegrove, 2015; Smolkowski, Girvan, McIntosh, Nese, & Horner, 2016). Exclusionary discipline rates are significantly higher in low income areas than high income areas with the socioeconomic composition of schools predictive of exclusionary practices (Cholewa et al., 2017; Shabazian, 2015). Racial disproportionality is found across schools while disproportionality related to family income and disability status are found within schools (Anderson & Ritter, 2017).

English language learners (ELLs) are suspended and expelled from school at increasing degrees of disproportionality through the middle and high school years (Burke, 2015; Peguero, Bondy, & Shekarkhar, 2017). English language learners are most frequently suspended for subjective offenses such as aggression, insubordination, and disruption (Burke, 2015). While exclusionary discipline is less predictive of dropout for ELLs (Deussen, Hanson, & Bisht, 2014), it is a contributing factor (Peguero et al., 2017).

Suspended and expelled ELLs have had significantly lower performance on state assessments than other ELLs who were not suspended or expelled (Burke, 2015).

Students with disabilities are significantly more likely to be suspended, expelled, and referred to law enforcement than their non-disabled peers (Cholewa et al., 2017; Mitchell, 2017). Lesbian, Gay, Bisexual, Transgender, and Questioning (LGBTQ) youth also report disproportionate punishments and hostile school climates combined with family issues related to their sexuality working together to push them out of school and into the school-to-prison pipeline (Snapp et al., 2015). Higher rates of LGBTQ victimization at schools appear to be related to higher rates of disciplinary referrals (Palmer & Greytak, 2017).

In addition to validating the role of implicit racial and gender biases in discipline decision making, Smolkowski et al. (2016) identified specific decision points at which biases are more likely to influence disciplinary decisions particularly the first 90 minutes of the school day during which time teachers will immediately refer minority and marginalized students to the office but hold off on referring majority students. Physical aggression on the playground is also a decision point vulnerable to bias (McIntosh, Ellwood, McCall, & Girvan, 2017).

Alternative learning centers. When students are expelled under state zero tolerance regulations, some school districts offer alternative learning centers (ALCs) to provide them with continued access to educational opportunities. Alternative learning centers that provide behavioral support and smaller learning environments have been found to successfully retain students and transition them back to traditional schools

(Henderson & Barnes, 2016). In a case study of an ALC in California, Kennedy-Lewis (2015) found two competing cultures, one punitive and one rehabilitative, working at cross purposes, diminishing the effectiveness of the program, but that the students reported benefits from the rehabilitative educators at the school. Alternative learning centers are more responsive to students' needs and students enjoy better relationships with teachers (Henderson & Barnes, 2016; Kennedy-Lewis, 2015). Alternative learning centers can provide more positive interactions with adults to transform the negative experience of an expulsion or long-term suspension into an opportunity for improvement of self-concept, internalized locus of control, social skills, and independent decision making (Coleman, 2015). Evidence of the effectiveness of ALCs to improve academic outcomes for students is mixed and inconclusive (Kennedy-Lewis, Whitaker, & Soutullo, 2016).

Progressive discipline. Progressive discipline policies have replaced explicitly zero tolerance policies in most states but continue to mandate exclusionary discipline for specific infractions such as the possession of guns and drugs (Curran, 2017). Progressive discipline allows more discretion and the consideration of mitigating circumstances with infractions classified into levels with corresponding options for consequences up to and including expulsion. However, research suggests that these policies may increase socioeconomic disproportionality as parents of higher socioeconomic status are better able to navigate the more complex procedures and exploit discretionary spaces to obtain more favorable disciplinary responses for their children (Milne & Aurini, 2015).

While zero-tolerance and the newer progressive discipline policies continue to be widespread approaches to school discipline, they are reactionary and only address behavior problems after they have escalated in the level of disruption to the school environment. They fail to address the underlying social emotional, and economic factors that contribute to a student's behavior. A variety of rehabilitative alternatives have been proposed to address those factors.

Rehabilitative Alternatives

School districts are increasingly modifying their discipline policies to allow more flexibility and include rehabilitative alternatives (Mallett, 2016b). Reducing the inflexible prescription of exclusionary discipline is a first step in disrupting the school to prison pipeline (Rocque & Snellings, 2017). For example, Miami-Dade County Public Schools revised their school discipline policy to implement a tiered system of positive behavior interventions and supports (Thompson, 2016). In some jurisdictions, collaboratives of varied stakeholders from multiple agencies such as juvenile justice, school districts, mental health, and social services have formed to redirect students from the justice system to care systems (Fedders, 2016). A systematic review of state regulations found that only seven states continue to have explicitly zero tolerance policies while mandates for expulsion in specific instances, such as gun and drug possession, continue to be present in 49 out of 50 state regulations (Curran, 2017). In their policy statement, the American Academy of Pediatrics recommended the consideration of alternatives such as preschool intervention, coordinated early intervention services, and school-wide positive behavioral intervention and support (SW-PBIS) (Lamont et al.,

2013). While alternatives may require greater investment of resources to implement, they offer the potential to decrease suspension rates and improve academic achievement (Lustick, 2017).

Restorative justice practices. School cultures that reflect social cohesion and promote prosocial belief systems have been shown to reduce school disorder (Gerlinger & Wo, 2016). When fully embraced, RJP builds a school-wide community of care that shifts power from authority figures to the full community through building and restoring relationships. When one member of the community engages in a behavior that causes harm to another member of the community they come together as a community to find ways to heal the harmed relationship and restore trust rather than assigning blame and issuing punishment using restorative processes such as peace circles, community conferencing, and peer mediation (Armour, 2016; Lustick, 2017). Armour (2016) warns of the dangers of legislatively mandating implementation of RJP, while the resources, training, and philosophical capacity is absent. While RJP addresses the immediate school environment and situational behaviors, it is unable to address underlying origins that potentially lead to reoccurrence (McNeill et al., 2016).

School-wide positive behavior interventions and supports. School-wide positive behavior interventions and supports institutes tiered systems of rewards for students exhibiting desirable behaviors with the aim of preventing negative behaviors from developing or replacing negative behaviors with positive ones (McNeill et al., 2016). School-wide positive behavior interventions and supports are viewed less favorably by staff in secondary schools compared to elementary schools as the

complexity of secondary schools make implementation difficult and few achieve full implementation (Feuerborn & Tyre, 2016).

Trauma sensitive schools. Teaching practices such as supervision and instructional management are associated with the presence of high risk behaviors, barriers to learning, and school climate (Martinez, McMahon, Coker, & Keys, 2016). Trauma sensitive schools (TSS) introduce teaching practices that consider the effects of complex trauma from adverse childhood experiences on the learning environment to improve educational outcomes (Plumb et al., 2016). Trauma sensitive schools emphasize the impact of toxic stress on the development of the child and focuses on social and emotional learning to help students regulate emotional responses to triggers in the classroom (McConnico et al., 2016). Trauma-informed practices are used to take adverse childhood experiences into account and provide assistance to the student, mitigating the impact of the trauma, decreasing maladaptive behavioral responses, and improving academic engagement (Phifer & Hull, 2016). The TSS movement started with pilot programs in Massachusetts and Washington including a Safe and Supportive Schools legislative program that provided grant funding to five school districts in Massachusetts (New look at discipline, 2014).

Full-service community schools. The full-service community school (FSCS) model brings coordinated community services into the school to support the needs of disadvantaged communities (Min et al., 2017). The intended goal is to improve educational outcomes for students by insuring that their basic needs are met, mitigating the impact of poverty (Sanders, 2016). Effective FSCSs are characterized by strong

principal leadership, coordinated community partnerships, and highly qualified teachers (Sanders, 2016). One of the benefits of FSCSs is increased parent involvement in the schooling of their children (Chen, Anderson, & Watkins, 2016). Early indicators suggest that when families are engaged in FSCS opportunities, student attendance and achievement improve (Biag & Castrechini, 2015). However, FSCS implementation challenges have included engaging parents and bridging the home-school gap (Galindo, Sanders, & Abel, 2017; Newton, Thompson, Oh, & Ferullo, 2017;) and moving the model from serving families to empowering families (Stefanski, Valli, & Jacobson, 2016) Other positive impacts attributed to FSCSs include building social capital by exposing students to potential career paths, connecting students and families to economic opportunities, mentoring, increased feelings of hopefulness, and improved parental perceptions of schools (Newton et al., 2017)

Previous Research Approaches to the Problem

Researchers studying the school-to-prison pipeline, the exclusionary discipline policies that have contributed to the pipeline, and potential solutions have applied both qualitative and quantitative methods in their attempts to define and explore the problem. Qualitative policy and document analyses have been conducted to evaluate school discipline policies (Curran, 2017; Irby, 2013) and the efforts to reform them (Evans & Didlick-Davis, 2012; McNeill et al., 2016). These studies effectively described the policies in question, but do not support their findings with evidence of either effectiveness or ineffectiveness which depends on the intended goals of the policy makers who instituted them.

Quantitative analysis of discipline data, disaggregated by race, gender, socioeconomic status, and other variables have been conducted to demonstrate disproportionate application of exclusionary discipline (Anderson & Ritter, 2017; Brown & Steele , 2015; Curran, 2016; Gastic, 2017; Mizel et al., 2016; Roch & Edwards, 2017; Skiba et al., 2002; Smolkowski et al., 2016; Van Dyke, 2016) and the academic, social, and economic impacts (Burke, 2015; Cholewa et al., 2017; Deussen et al., 2014; Marchbanks et al., 2014; Peguero et al., 2017; Wolf & Kupchik, 2017). The volume of these studies and consensus around disproportionality validates the social injustice problem, but they do not provide direction to policy makers in regard to moving forward to reverse the harm done. Beliefs, perceptions, and experiences with disciplinary practices and the rehabilitative alternatives have been evaluated through quantitative surveys (Anyon et al., 2016; Chen et al., 2016; Feuerborn & Tyre, 2016; Heilbrun et al., 2015; Martinez et al., 2016; Palmer & Greytak, 2017) as well as qualitative interviews (Berlowitz et al., 2017; Kennedy-Lewis, 2015; Kennedy-Lewis & Murphy, 2016; Kennedy-Lewis et al., 2016), focus groups (Henderson & Barnes, 2016; Irby & Clough, 2015; Snapp et al., 2015), and narrative inquiry (Coleman, 2015). These studies demonstrate the importance of understanding the human experience of policies and how the people affected most by them are impacted. Descriptive case studies and qualitative research reviews have been used to describe the implementation of full-service community schools (Biag & Castrechini, 2015; Galindo et al., 2017; Min et al., 2017; Newton et al., 2017; Sanders, 2016) and trauma-sensitive schools (Phifer & Hull, 2016; Plumb et al., 2016). Quantitative models have been used to evaluate the impact of reform

efforts such as SWPBIS (Flannery et al., 2014) and restorative justice practices (Gregory et al., 2015), but they have been limited to a single approach and setting making it impossible for the policy decision maker to know which alternative is the most efficient and effective for their schools.

The diffusion of effective innovations to solve social problems, such as the school-to-prison pipeline, requires knowledge of the consequences of innovations that can be shared among policy decision makers (Rogers, 1995). Review of the extant literature has revealed four innovations (SWPBIS, RJP, FSCS, and TSS) that show promise, but outcomes have not been evaluated in side-by-side comparison. The literature connecting zero tolerance policies, exclusionary discipline, and the school-to-prison pipeline demonstrate that suspension rates are an indicator of how many children are being pushed out of school and into the prison pipeline (Mitchell, 2015; Ryan & Goodram, 2013). Disproportionality research shows that race and socioeconomic status have a strong influence on suspension rates (Anderson & Ritter, 2017), including suspension rates in Massachusetts (Gastic, 2017), therefore they must be controlled for when comparing heterogeneous school districts with varying populations.

Summary

Preventing students from passing through the pipeline from school to prison is an important agenda item for policy makers to consider due to the social and economic impacts this problem has on communities. Rogers (1995) diffusion of innovations theory provides the theoretical foundation for evaluation of the consequences or outcomes of proposed policy alternatives to inform the innovation development and decision-making

processes, facilitating the diffusion of best practices. The current literature shows that the expansive adoption of reactive zero tolerance policies, intended to address school violence, has forced students out of school and into the juvenile and criminal justice systems earlier (Hirschfield & Celinska, 2011; Irby, 2013) while failing to make a significant impact on reducing disruptive behaviors in the educational environment (Gerlinger & Wo, 2016; McNeill et al., 2016). The negative effects of these policies have been disproportionately felt by communities who have already been marginalized from society (Burke, 2015; Mitchell, 2017; Shabazian, 2015; Snapp et al., 2015; Van Dyke, 2016).

Several rehabilitative alternatives (RJP, SWPBIS, TSS, FSCS), aimed at preventing at-risk youth from progressing through the pipeline have been presented in relation to their ability to reduce suspension rates by addressing the underlying conditions that contribute to rule breaking behavior (Lustick, 2017; Martinez et al., 2016; McNeill et al., 2016; Min et al., 2017). Having been piloted, there is evidence to suggest that each of these innovations may provide an effective solution to the problem (Gerlinger & Wo, 2016; McNeill et al., 2016; Sanders, 2016). However, what is unknown is which alternative will provide the most effective solution. This quantitative analysis filled this gap by providing a comparison of suspension rates across districts implementing the proposed policy innovations.

Chapter 3 provides an expansion of the rationale for the research design. In it, I explain the details of the research design and methodology for this study. I describe the population, sampling procedure, and data collection procedures. I further operationalize

the variables. I provide a plan for data analysis. I conclude the chapter by considering the threats to validity and ethical procedures.

Chapter 3: Research Method

Introduction

The purpose of this study was to consider the effectiveness of the rehabilitative alternatives to zero tolerance school discipline policies (RJP, SWPBIS, TSS, and FSCS) to proactively address student behavior, thereby reducing exclusionary discipline rates and the number of children caught in the school-to-prison pipeline. Given that racial minorities and students living in poverty are disproportionately excluded from the educational environment in response to their behavior (Cholewa et al., 2017; Gastic, 2017), these variables must be controlled for when comparing the alternative models. Researchers have recently considered pilot programs of these alternative models in isolation (Biag & Castrechini, 2015; Feuerborn & Tyre, 2016; Gregory et al., 2015; Phifer & Hull, 2016), but have not provided the comparative analysis necessary to inform policymakers about which innovations most effectively produce the desired changes and should be diffused, and which ones should be abandoned due to lackluster effectiveness.

In this chapter, I describe the research design for this study and provide the rationale for its use. I explain the methodology including the population, sample, and data collection. The variables are operationalized, and the data analysis plan is described in detail. Threats to validity and ethical procedures are also considered.

Research Question and Hypotheses

The purpose of this study was to identify the most effective rehabilitative alternatives to exclusionary school discipline by considering the relationship between suspension rates and the various approaches school districts are taking to address

misbehavior while taking into consideration racial and socioeconomic disproportionalities. I developed the following research question and associated hypotheses to guide this study:

RQ: How do suspension rates vary when school districts implement different approaches to school discipline when controlling for the racial and socioeconomic composition of the districts?

H_0: There is no relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition.

H_1: There is a relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition.

Research Design and Rationale

Variables

The independent variable was the type of discipline policy—the primary approach that has been adopted by the public school district to address student behavior. This independent variable was measured at the nominal level as categorical, independent groups. The dependent variable was the suspension rate. Suspension rate was a continuous variable measured as the percentage of enrolled students disciplined through suspension of their access to a free and appropriate public education. The control variables (covariates) were the school districts' racial and socioeconomic compositions. Racial and socioeconomic composition were measured at the continuous level as percentage of enrolled students who were non-white and percentage of enrolled students identified as economically disadvantaged. The MA-DESE is required to report

enrollment and suspension data to the public annually. For this study, I used data from the most recent school year reported, 2016-2017.

Research Design

I used a quantitative, nonexperimental, nonequivalent groups, posttest only research design using secondary data analysis to compare the impact of various district approaches to student behavior used throughout Massachusetts (standard state policy, SWPBIS, RJP, TSS, FSCS, multiple) on suspension rates. Quantitative research designs provide the opportunity to analyze human problems and social phenomena through the objective measurement of the variables and application of mathematical models to determine whether the relationships between variables are statistically significant and unlikely to co-occur by chance (Yilmaz, 2013). By using mathematically-based methods to produce numerical data that explain a phenomenon, research can use quantitative designs to deductively explain or predict outcomes and cause-effect relationships that are generalizable (Yilmaz, 2013).

A nonexperimental design was required. This type of design was necessary because random assignment was impossible in this situation, exposure to the various school discipline approaches could not be provided in isolation from other factors, and the independent variable included nonequivalent groups with posttest only (O'Sullivan, Rassel, Berner, & Taliaferro, 2017). School districts had already implemented their chosen approach to school discipline. Nonexperimental designs cannot provide the same level of internal validity as experimental designs because they do not include random assignment to experimental and control groups (Frankfort-Nachmias, Nachmias, &

DeWaard, 2015).

It was crucial that I conduct quantitative research to determine which reform efforts have had a statistically significant impact on suspension rates in order to guide policy and funding decisions and advance knowledge in this area. Much of the research in this area has been qualitative, thereby creating a need for empirical, quantitative evidence to support researchers interpretations (Hirschfield & Celinska, 2011; Irby, 2013; Milne & Aurini, 2015; Morrison & Vaandering, 2012). Studies have had limited generalizability due to small sample sizes, the insufficient variability of settings, and limited geographic coverage (Flannery et al., 2014; Longstreth et al., 2013). The evaluations researcher have completed are limited to single districts with a single approach to school discipline (Osher et al., 2014; Thompson, 2016). Researchers have not compared the effectiveness of reform efforts already in progress to academic indicators or to other approaches (Flannery et al., 2014; Gregory et al., 2015; Longstreth et al., 2013; Morrison & Vaandering, 2012). Studies evaluating the effectiveness of reforms have not been long enough to capture the full implementation effect (Flannery et al., 2014; Gregory et al., 2015). This study filled these gaps by providing a side by side comparison of behavioral approaches that have been implemented across districts statewide.

Methodology

Population

The target population for this study was all public and public charter school districts in the Commonwealth of Massachusetts serving Kindergarten through Grade 12.

I excluded two virtual school districts because the students enrolled in these schools do not physically attend classes in a school building and thus are not required to follow a code of conduct subject to suspension or expulsion. Therefore, the total population included 218 districts. All school districts in Massachusetts are required to follow state student discipline regulations and report student discipline data to the public for accountability purposes.

Given the limited size of the population and ready availability of data for the variables in question, it was not necessary to restrict this study to a sample of the population. There were no districts that needed to be dropped from the study. Based on a population of 218, a sample size of 140 school districts would yield results with a 5% margin of error and 95% level of confidence (Raosoft, Inc., 2004). Therefore, up to 78 school districts could have been dropped from the study and still produced reliable results. However, doing so would have decreased the strength of the data analysis.

Data Collection

I used secondary data to study the relationship between school discipline approach and suspension rates. Secondary data is data collected for one purpose, but reused for a second purpose (O'Sullivan et al., 2017). Without available secondary data, this study would have been too costly and not feasible to conduct. The use of secondary data has the added benefit of opening the research process to the scrutiny and evaluation of other researchers to validate and further expand the results and conclusions drawn (O'Sullivan et al., 2017).

Public and public charter schools routinely collect data through their daily operating procedures such as student demographic information, attendance, grades, discipline, and so on. The MA-DESE compiles and disaggregates this data on its website to report it as school accountability data to the public. I retrieved the data retrieved from statewide reports of enrollment and student discipline (http://profiles.doe.mass.edu /state_report/). However, choice of school discipline approach beyond the standard state policy is a local decision that is not currently required to be reported in accountability data. As stated earlier, I assumed that all districts implement, at a minimum, the state's school discipline regulations; therefore, any district that was not found to be implementing any of the other approaches was classified as implementing only the state regulations. Districts implementing SW-PBIS were identified by the presence of PBIS coordinators and/or school handbooks that included PBIS processes and descriptions. Districts implementing RJP were identified based on the presence of RJP processes and descriptions in the school handbooks or discipline policies. Districts implementing TSS were identified based on their receipt of Safe and Supportive Schools grants intended for this purpose from MA-DESE. Districts implementing FSCS were identified based on the presence of comprehensive services for students, families, and community members through partnerships with other entities.

Operationalization of Variables

In this study, my plan was to examine suspension data in relation to the implementation of various school discipline approaches. The operationalization of the variables is further described in this section.

Independent Variable

The independent variable was a categorical variable that represents the school discipline approach implemented in each school district. I identified the discipline approach in each school district using information provided by state and district websites. I coded the discipline policies as those continuing to implement only the standard state school discipline policy (0), implementation of TSS (1), implementation of the SWPBIS (2), implementation of RJP (3), implementation of FSCS (4), and implementation of multiple models (7).

Dependent Variable

The dependent variable for this study was suspension rate, a continuous variable representing the percentage of the students enrolled in a district who were excluded from participating in school activities for at least one day during the 2016-2017 school year. The MA-DESE student discipline data report (http://profiles.doe.mass.edu/statereport /ssdr.aspx) provided the number of students enrolled and the number of students disciplined in a school year. For this dependent variable, I converted this data into a percentage by dividing the number of students disciplined by the number of students enrolled, then multiplying by 100.

Confounding Variables

Based on the previous literature reviewed, I included other confounding variables to control for their known influence on the dependent variable. Race and socioeconomic status have been disproportionately linked to exclusionary discipline (Mizel et al., 2016).

Therefore, to isolate the impact of the independent variable on the dependent variable, it was necessary to control for these factors.

Racial composition. Racial composition was treated as continuous variable measured as the percentage of non-white students enrolled in the school district. The MA-DESE's Enrollment by Race/Gender Report (District) (http://profiles.doe.mass.edu /state_report/enrollmentbyracegender.aspx) provided enrollment data as the percentages of students enrolled in each district who identify as African American, Asian, Hispanic, White, Native American, Native Hawaiian/Pacific Islander, and multi-race/non-Hispanic. I calculated this variable by subtracting the reported percentage of white students from 100.

Socioeconomic composition. Socioeconomic composition was treated as a continuous variable measured as the percentage of economically disadvantaged students enrolled. The MA-DESE's Selected Populations Report (http://profiles.doe.mass.edu /state_report/selectedpopulations.aspx) provided the percentage of students enrolled in each district who are economically disadvantaged. Economically disadvantaged was defined as students whose family is participating in a state-administered program including the Supplemental Nutrition Assistance Program (SNAP); the Transitional Assistance for Families with Dependent Children (TAFDC); the Department of Children and Families' (DCF) foster care program; and MassHealth (Medicaid); (MA-DESE, n.d.).

Data Analysis Plan

Data were collected from the MA-DESE state-wide reports for the 2016-2017 school year and entered in an Excel spreadsheet then transferred to IBM SPSS version 24

for analysis. The data analysis planned was the one-way ANCOVA using the general linear model (GLM) procedure. The ANCOVA analysis was able to use the covariates to adjust the means for each of the groups and increase the ability to determine whether statistically significant differences exist between the groups of the independent variable. Post hoc testing was planned to determine where the differences existed between the groups, consider the influence of the cofounding variables, and how controlling for race and SES changed the pattern of suspension rate means.

Analysis of covariance provided the opportunity to examine the relationship between and among variables, including control variables, by measuring the strength of the association between variables and testing for the statistical significant of those relationships (O'Sullivan et al., 2017). Therefore, a weaker association that is statistically significant would not be discounted. When covariate data is successfully integrated into the research design, and there is a strong relationship between the covariates and the outcome variable, error variance is reduced producing greater magnitudes of treatment effects between the independent and dependent variables and statistically significant relationships can be detected with smaller populations or sample size (Shieh, 2017).

Analysis of covariance is particularly useful when comparisons are made between nonequivalent groups (Warner, 2013). Despite past attempts to desegregate schools, it has been shown that school segregation by race and poverty has been deepening over the past few decades and segregation is higher in more fragmented district structures, such as the feeder system present in Massachusetts (Ayscue & Orfield, 2015). Additionally, prior research has established a strong relationship between race, poverty, and suspension

rates (Skiba et al., 2002). Therefore, it was necessary to control for racial composition and economic disadvantage in the data analysis plan.

Before carrying out the ANCOVA, the statistical properties, or assumptions, under which the mathematical model was derived were tested. The assumptions for ANCOVA include independence and normality of errors, homogeneity of regression slopes and variances, and linearity of within-group regression (Huitema, 2011). The *F*-test of significance was used to assess for differences. Because predictable variances known to be associated with the dependent variable are removed from the error term, ANCOVA increases the power of the *F*-test for the main effect (Huitema, 2011; Warner, 2013). The *F*-test was used with the probability of rejecting the null hypothesis when it is true set at $p < .05$. This ensured a 95% certainty that the differences did not occur by chance. When significance was found, comparison of the original and adjusted group means provided information about the role of the covariates.

When the null hypothesis was rejected, post hoc testing was performed to further investigate the relationships between the variables. I used the MANOVA and ANOVA procedures to consider the nature of the relationships between the discipline approaches and the control variables and determine if the districts implementing the approaches differed in racial and/or socioeconomic composition. Then, I examined how controlling for racial and socioeconomic composition changed the pattern of suspension rate means. Finally, Bonferroni post hoc testing, making pairwise comparisons, was used to identify the nature of the differences between the districts implementing different policies, to

determine which pairs of policy groups differed significantly, and which school discipline policies were associated with the lowest mean suspension rates.

Threats to Validity

Threats to validity must be considered in the research design to ensure that the conclusions that are drawn accurately reflect the interaction between the variables. Factors affecting internal and external validity were considered in this section.

Internal Validity

Internal validity relates to whether the variables in question are related in the way the research suggests, or whether there were other factors, that were not considered, that could provide an alternate explanation for the relationship. For example, can the changes in suspension rates between groups be explained by some other factor. The most common factors affecting internal validity include history, selection, maturation, statistical regression, experimental mortality, testing effects, instrumentation, and design contamination (O'Sullivan et al., 2017). Maturation, testing, instrumentation, and design contamination are unlikely threats to the internal validity of this study. Changes in the dependent variable were not being measured over time or with a pretest that could influence the data. The data collected was routinely collected through standard operating procedures, therefore there was no instrument involved that would have influenced data reporting and inclusion of school districts in the design of the study would not influence their behavior or decision making regarding suspension.

History. While the design of this research project could not control for external events that may influence results, the school districts were all within a single state and

likely to be influenced equally by any external events that would be of such significance as to impact the data. For example, all districts would be affected equally by changes to state and national governance or regulations. The data from all districts was collected for the same period.

Selection and statistical regression. While school districts were not selected for this study based on scores on measures or having certain characteristics, they may have selected and implemented the interventions in question based on their need to reduce suspensions if they had been identified as having unusually high suspension rates. For example, a majority minority district may have had a disproportionately high rate of suspension due to the known influence of race, causing them to adopt one of the interventions. By controlling for racial composition as a covariate, the influence of this factor was addressed. Districts with high levels of poverty were also considered in the same way.

Experimental mortality. All data used in this research was administrative and regulatory in nature, therefore, school districts could not opt out of data reporting. Also, given the expense and commitment required to implement system changes, it was unlikely that communication between districts using different interventions would cause them to shift to a different intervention in the middle of a fiscal year. Therefore, mortality and diffusion of treatment are not likely threats to internal validity.

External Validity

External validity relates to generalizability of results to other settings (O'Sullivan et al., 2017). Using the full statewide population included diversity of districts including

urban, suburban, and rural districts. The choice of Massachusetts as the setting for this researcher was made because in policy diffusion research Massachusetts has been identified as a driver of policy innovation that other states look to for policy ideas and solutions (Peck, 2011) including such policy areas as health care (Shipan & Volden, 2008), the environment and energy (Fishlein, Feldpausch-Parker, Peterson, Stephens, & Wilson, 2014), public finance (Berzin, Pitt-Catsouphes, & Peterson, 2014), and education (U.S. Department of Education, 2008). While this study was restricted to a single state, Massachusetts's position as a policy innovation leader suggested that other states are more likely to adopt and generalize policies after successful experimentation by Massachusetts.

Ethical Procedures

The ethical requirements of Walden University were followed including review and approval by the Institutional Review Board (IRB) before the collection of data was begun (#07-16-18-0508979). All data collected for analysis was collected from public records of administrative and regulatory reports used for public school accountability and readily available on the internet. No consent for access to the data was required. There was no risk to human subjects as the data collected was at the systems level and did not identify any individuals. All data and documents used will be saved as portable digital files and stored in a password protected folder. They will be stored securely in the password protected folder for the five years following publication of the dissertation. After five years the files will be deleted.

Summary

In this chapter, I explained the methodology that was used to examine the relationship between implementation of rehabilitative alternative to exclusionary discipline and suspension rates. I used a quasi-experimental, quantitative design using the full population of public and public charter school districts in the state of Massachusetts. The independent variable was the type of approach districts implemented to address student behavioral concerns. The dependent variable was suspension rates. Control variables were used to control for the influences of the racial and socioeconomic composition of school districts on suspension rates. Data were collected from public accountability reports, state grant programs, district websites, and reports from training providers. The data analysis plan included ANCOVA with post hoc testing to determine the nature of the differences among group means, which discipline policies were associated with the lowest suspension rates, and how controlling for racial and socioeconomic composition changed the pattern of suspension rates. In Chapter 4, I will detail the data collected and the results of the data analysis.

Chapter 4: Results

Introduction

The purpose of this nonexperimental, causal comparative, quantitative study was to compare the impact of various school discipline approaches on suspension rates of school districts in Massachusetts. The research question underwriting this study was: How do suspension rates vary when school districts implement different approaches to school discipline when controlling for the racial and socioeconomic composition of the districts? The null hypothesis was that there was no relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition. The alternative hypothesis was that there was a relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition.

In this chapter I describe the data collection process including the population of interest, report baseline descriptive statistics, and provide the basic univariate analysis that justified the inclusion of the covariates. I then evaluated the appropriateness of the statistical assumptions and report the findings of the statistical analysis with post-hoc testing. The chapter concludes with a summative interpretation of the findings.

Data Collection

For this study, I collected secondary data from a variety of sources in July 2018 as described below. Data was readily available for all 218 districts included in the identified population. No districts needed to be dropped from the study.

Independent Variable

For the independent variable, school discipline approach, each group required a different source. Districts implementing SW-PBIS were identified by the presence of a PBIS coordinator, which I found by accessing a national database of PBIS coordinators available in the public domain via the internet as well as evidence from district websites (Educational and Community Supports, 2018).

Districts implementing the TSS were identified by their receipt of a state grant supporting training by TLPI during fiscal years 2014, 2016, and 2017 (TLPI, 2018). The 2014 recipients were the pilot program and the grant was not offered in 2015.

There was no national or state level coordination of RJP, thus requiring a review of each individual school district's website to determine if they were implementing these practices during the 2016-2017 school year. To be identified as a RJP district, I required that the district include RJP in their school year 2016-2017 policy manual and student handbooks with more than the single mention that included RJP in a list of alternatives to suspension options allowed copied directly, without alteration, from the state policy (MA-DESE, 2014).

Districts with FSCS were identified based on their receipt of federal (U.S. Department of Education, 2018) and state (MA-DESE, 2015) grants.

Collection of the independent variable resulted in the following baseline characteristics of the sample. Of the 218 districts included in the study, during the 2016-17 school year, 123 had implemented only the standard state policy without any of the alternatives, 22 districts had implemented the TSS approach, 35 districts had

implemented SW-PBIS, 20 districts had implemented RJP, 4 districts included FSCS, and 14 districts had implementing more than one of the identified alternative school discipline approaches (Table 1).

Table 1

Between-Subjects Factors

School discipline approach	Value	*N*
SSP	0	123
TSS	1	22
SW-PBIS	2	35
RJP	3	20
FSCS	4	4
Multiple	7	14

Dependent Variable

The dependent variable for this study, suspension rate, was obtained from the MA-DESE Student Discipline Data Report of all offenses, for all students, at the district level from the 2016-2017 school year (http://profiles.doe.mass.edu/statereport/ssdr.aspx); (MA-DESE, 2017).

An examination of unadjusted means showed that suspension rate was greater in the SSP group ($M = 3.02$, $SD = 2.85$) compared to TSS ($M = 2.62$, $SD = 1.71$), SW-PBIS ($M = 2.65$, $SD = 2.37$), and RJP ($M = 2.64$, $SD = 2.12$). The suspension rate was less in the SSP group ($M = 3.02$, $SD = 2.85$) compared to FSCS ($M = 5.95$, $SD = 3.15$) and Multiple ($M = 5.44$, $SD = 3.66$) respectively (Table 2).

Table 2

Descriptive Statistics for Dependent Variable

School discipline approach	Mean	Std. deviation	*N*
SSP	3.0233	2.84623	123
TSS	2.6177	1.70880	22
SW-PBIS	2.6543	2.36631	35
RJP	2.6425	2.11615	20
FSCS	5.9525	3.14875	4
Multiple	5.4393	3.65724	14
Total	3.0971	2.76155	218

Confounding Variables

Racial composition. I obtained data for the first covariate, racial composition of the districts, from the MA-DESE's 2016-17 Enrollment by Race/Gender Report (District); (MA-DESE, 2018). A simple linear regression using racial composition as an independent variable and suspension rate as the dependent variable was conducted to justify the inclusion of this covariate.

Racial composition of the districts accounted for 25.5% of the variation in suspension rates with adjusted $R^2 = 25.1\%$, a moderate to strong size effect according to Cohen (1988). Racial composition statistically significantly predicted suspension rate, $F(1, 216) = 73.87$, $p < .001$ (Table 3). Therefore, inclusion of this covariate was justified.

Table 3

Regression Model for Racial Composition and Suspension Rate

Model 1	Sum of squares	df	Mean square	F	Sig.
Regression	421.712	1	421.712	73.867	.000[b]
Residual	1233.160	216	5.709		
Total	1654.873	217			

Note. [a]Dependent variable: Suspension rate. [b]Predictors: (Constant), Racial composition.

Socioeconomic composition. Data for the second covariate, socioeconomic composition of the districts, were obtained from the MA-DESE's 2016-17 Selected

Populations Report (District); (MA-DESE, 2018). A simple linear regression using socioeconomic composition as an independent variable and suspension rate as the dependent variable was conducted to justify the inclusion of this covariate.

Socioeconomic composition of the districts accounted for 52.0% of the variation in suspension rates with adjusted $R^2 = 51.7\%$, a strong size effect according to Cohen (1988). Socioeconomic composition statistically significantly predicted suspension rate, $F(1, 216) = 233.68$, $p < .001$ (Table 4). Therefore, inclusion of this covariate was justified.

Table 4

Regression Model for Socioeconomic Composition and Suspension Rate

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	859.960	1	859.960	233.675	.000[b]
	Residual	794.912	216	3.680		
	Total	1654.873	217			

Note. [a]Dependent variable: Suspension rate [b]Predictors: (Constant), Socioeconomic composition

Results

I tested the research question with a one-way ANCOVA using the general linear model (GLM) procedure while including the covariates to adjust the means for each of the groups and increase my chance of determining whether statistically significant differences existed between the groups of the independent variable. The ANCOVA is strongest when the statistical properties, or underlying assumptions, are met. These include linearity, homogeneity of within-group regression slopes, normality, homoscedasticity, homogeneity of conditional variances, and absence of outliers (Huitema, 2011). Before carrying out the ANCOVA, I tested these assumptions.

Assumptions Testing

Linearity. ANCOVA is a linear model, therefore I assumed that the within-group relationship between the independent and dependent variables was linear (Huitema, 2011). If the assumption of linearity is not met, the power of the ANCOVA is decreased (Huitema, 2011). There was a linear relationship between each of the covariates and suspension rates for each school discipline approach as assessed by visual inspection of scatterplots.

Homogeneity of within-group regression slopes. ANCOVA requires that the regression slopes for each level of the independent variable—in this case the school discipline approach—are the same (Huitema, 2011). When this assumption is not met, the null hypothesis may be falsely retained (Huitema, 2011). I tested this assumption using the GLM univariate procedure between the independent variable and each of the covariates. There was homogeneity of regression slopes for the covariate, racial composition, as the interaction term was not statistically significant, $F(5, 194) = .955$, $p = .447$. There was also homogeneity of regression slopes for the covariate, socioeconomic composition, as the interaction term was not statistically significant, $F(5, 194) = 2.172$, $p = .059$. However, there was not homogeneity of regression slopes when the covariates interact together with the independent variable, as the interaction term was statistically significant, $F(6, 194) = 4.136$, $p = .001$ (Table 5). This indicated that districts with higher scores on both covariates will have higher suspension rates for the SSP than the alternatives and districts with lower scores on both covariates will have lower suspension rates for the SSP than the alternatives, but districts with average scores on both covariates

do not appear to differ in their suspension rates. Therefore, there is a risk of retaining the null hypothesis in error. However, Huitema (2011) suggested that this risk is relatively low and the ANCOVA is often sufficiently robust to withstand violation of this assumption. Therefore, I decided to continue with the ANCOVA.

Table 5

Tests of Between Subjects Effects

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	1112.644[a]	23	48.376	17.308	.000
Intercept	1.434	1	1.434	.513	.475
IV	11.357	5	2.271	.813	.542
CV1	.105	1	.105	.038	.847
CV2	.074	1	.074	.026	.871
IV * CV1	13.341	5	2.668	.955	.447
IV * CV2	30.360	5	6.072	2.172	.059
IV * CV1 * CV2	69.368	6	11.561	4.136	.001
Error	542.228	194	2.795		
Total	3745.886	218			
Corrected total	1654.873	217			

Note. R squared = .672 (Adjusted R squared = .633)

Normality. The errors of the ANCOVA must be normally distributed. If the assumption of normality is violated results may not be trustworthy, however, the ANCOVA is often sufficiently robust to proceed (Huitema, 2011). Table 6 shows that the standardized residuals for four of the school discipline approaches (SW-PBIS, RJP, FSCS, and multiple) were normally distributed, as assessed by the Shapiro-Wilk's test ($p > .05$). However, the assumption of normality was violated for two of the school discipline approaches (SSP and TSS). The potential consequence of violating the normality assumption is a false retention of the null hypothesis, however, the ANCOVA is often sufficiently robust to violations of normality (Huitema, 2011); therefore, I decided to continue to proceed with the ANCOVA.

Table 6

Shapiro-Wilk's Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	School discipline approach	Statistic	df	Sig.	Statistic	Df	Sig.
Standardized residual for DV	SSP	.112	123	.001	.896	123	.000
	TSS	.254	22	.001	.748	22	.000
	SW-PBIS	.123	35	.200*	.970	35	.443
	RJP	.136	20	.200*	.955	20	.457
	FSCS	.231	4	.	.968	4	.831
	Multiple	.183	14	.200*	.941	14	.425

Note. *This is a lower bound of the true significance. [a]Lilliefors significance correction.

Homoscedasticity. ANCOVA requires that the variance of the errors is the same regardless of the group or the dependent variable (Huitema, 2011). There was homoscedasticity, as assessed by visual inspection of the standardized residuals plotted against the predicted values for each group.

Homogeneity of conditional variances. ANCOVA requires that the variance of the residuals for each level of the independent variable are equal, otherwise a false positive is likely (Huitema, 2011). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variance (p = .708).

Outliers. There were 3 outliers in the data, as assessed by identifying cases with standardized residuals greater than ±3 standard deviations. Inspection of the data found that these were genuinely unusual values without data entry or measurement error. The outliers were maintained in the analysis.

Overall, testing of the assumptions yielded mixed results. The assumptions of linearity, homoscedasticity, and homogeneity of conditional variances were met. The assumption of homogeneity of within-group regression slopes was met for each of the covariates individually, but the assumption was not met when the covariates were

combined in the model. In addition, the assumption of normality was met for four groups of the independent variable, but not for two of the groups. The potential consequence of both assumption violations is false retention of the null hypothesis. Given the robust nature of the ANCOVA to overcome these violations, it was decided to continue with the ANCOVA.

ANCOVA Results

The ANCOVA was performed to determine the significance of differences in the means of suspension rates between the school discipline approaches while controlling for the racial and socioeconomic composition of the school districts. Adjusted means are presented unless otherwise stated. After adjusting for the covariates, suspension rate was greater in the SSP group (M = 3.481, SE = .173) compared to the TSS group (M = 2.401, SE = .401), the SW-PBIS group (M = 2.701, SE = .317), the RJP group (M = 2.524, SE = .421), the FSCS group (M = 2.368, SE = .980), and the Multiple group (M = 2.834, SE = .537) respectively (Table 7).

Table 7

Estimates

			95% Confidence interval	
School discipline approach	Mean	Std. error	Lower bound	Upper bound
SSP	3.481[a]	.173	3.141	3.822
TSS	2.401[a]	.401	1.611	3.191
SW-PBIS	2.701[a]	.317	2.075	3.327
RJP	2.524[a]	.421	1.694	3.353
FSCS	2.368[a]	.980	.435	4.300
Multiple	2.834[a]	.538	1.773	3.895

Note. Covariates appearing in the model are evaluated at the following values: racial composition = 27.2243, socioeconomic composition = 24.0330.

The ANCOVA procedure revealed that after adjustment for the racial and socioeconomic composition of the districts, there was a statistically significant difference

in mean suspension rates between school discipline approaches, $F(5, 210) = 2.349$, $p = .042$, partial $\eta^2 = .053$ (Table 8). Therefore, the null hypothesis is rejected with a significance value of $p = .042$ which exceeds the value of $p = .05$. There is a relationship between suspension rates and school discipline approaches when controlling for racial and socioeconomic composition.

Table 8

Tests of Between-Subjects Effects

Source	Type III sum of squares	df	Mean square	F	Sig.	Partial eta squared
Corrected model	914.674[a]	7	130-668	37.071	.000	.553
Intercept	8.417	1	8.417	2.388	.124	.011
CV1	18.351	1	18.351	5.206	.024	.024
CV2	461.189	1	461.189	130.843	.000	.384
IV	41.398	5	8.280	2.349	.042	.053
Error	740.199	210	3.525			
Total	3745.886	218				
Corrected total	1654.873	217				

Note. [a]R Squared = .553 (Adjusted R Squared = .538)

Post Hoc Tests

With the null hypothesis rejected, the MANOVA and ANOVA procedures were used to consider the nature of the relationships between the discipline approaches and the control variables and determine if the districts implementing the approaches differed in racial and/or socioeconomic composition. The MANOVA procedure tested the school discipline approaches against the two control variables together while the ANOVA procedure tested them separately.

The districts implementing FSCS and multiple approaches had higher compositions of racial minority students ($M = 68.75$, $SD = 22.57$ and $M = 54.83$, $SD = 28.73$, respectively) than districts implementing SSP, TSS, RJP, and SW-PBIS ($M = 22.39$, $SD = 18.54$; $M = 26.95$, $SD = 18.96$; $M = 31.27$, $SD = 24.25$; and $M = 26.28$, $SD =$

17.77, respectively); (Table 9). The districts implementing TSS, RJP, FSCS, and multiple approaches had higher compositions of economically disadvantaged students (*M* = 25.92, *SD* = 13.42; *M* = 24.45, *SD* = 13.57; *M* = 48.53, *SD* = 19.59; and *M* = 42.21, *SD* = 24.90, respectively) than districts implementing SSP and SW-PBIS (*M* = 20.84, *SD* = 13.54 and *M* = 23.77, *SD* = 14.71, respectively); (Table 9).

Table 9

Descriptive Statistics

	School discipline approach	Mean	Std. deviation	N
Racial composition	SSP	22.3902	18.54243	123
	TSS	26.9545	18.95631	22
	SW-PBIS	26.2829	17.76933	35
	RJP	31.2700	24.25531	20
	FSCS	68.7500	22.56642	4
	Multiple	54.8286	28.72743	14
	Total	27.2243	21.94063	218
Socioeconomic composition	SSP	20.8350	13.53648	123
	TSS	25.9227	13.42719	22
	SW-PBIS	23.7743	14.70885	35
	RJP	24.4500	13.57065	20
	FSCS	48.5250	19.58509	4
	Multiple	42.2143	24.90403	14
	Total	24.0330	15.85926	218

There was a statistically significant difference in district compositions between the school discipline approaches implemented in racial composition $F(5, 212) = 10.541$, $p < .0005$; partial $\eta^2 = .199$ (Table 10), in socioeconomic composition $F(5, 212) = 7.680$, $p < .0005$; partial $\eta^2 = .153$ (Table 10), and on the combined covariates, $F(10, 422) = 5.765$, $p < .0005$; Wilks; $\Lambda = .774$; partial $\eta^2 = .120$ (Table 11)

Table 10

Tests of Between-Subjects Effects

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.	Partial η^2
Corrected model	Racial composition	20799.728[a]	5	4159.946	10.541	.000	.199
	Socioeconomic composition	8369.622[b]	5	1673.924	7.680	.000	.153
Intercept	Racial composition	117109.981	1	117109.981	296.757	.000	.583
	Socioeconomic composition	76043.992	1	76043.992	348.876	.000	.622
IV	Racial composition	20799.728	5	4159.946	10.541	.000	.199
	Socioeconomic composition	8369.622	5	1673.924	7.680	.000	.153
Error	Racial composition	83662.133	212	394.633			
	Socioeconomic composition	46209.380	212	217.969			
Total	Racial composition	266035.430	218				
	Socioeconomic composition	180492.840	218				
Corrected total	Racial composition	104461.861	217				
	Socioeconomic composition	54579.002	217				

Note.[a] R squared = .199 (Adjusted R squared = .180), [b]R squared = .153 (Adjusted R squared = .133)

Table 11

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial η^2
Intercept	Wilks' lambda	.332	212.111[b]	2.000	211.000	.000	.668
IV	Wilks' lambda	.774	5.765[b]	10.000	422.000	.000	.120

Note.[a] Design: Intercept + IV, [b]Exact statistic

The mean differences in minority representation from districts implementing SSP (46.35%), TSS (41.80%), SW-PBIS (42.47%), and RJP (37.48) to the districts implementing FSCS were statistically significant ($p < .05$) increases (Table 12). Likewise, the mean differences in minority representation from districts implementing SSP (32.44%), TSS (27.84%), SW-PBIS (28.55%), and RJP (23.56%) to districts implementing multiple approaches were also statistically significant ($p < .05$) increases (Table 12).

Table 12

Tukey HSD Multiple Comparisons – Racial Composition

(I) School discipline approach	(J) School discipline approach	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval	
					Lower bound	Upper bound
SSP	TSS	-4.5643	4.59850	.920	-17.7895	8.6609
	SW-PBIS	-3.8926	3.80573	.910	-14.8378	7.0526
	RJP	-8.8798	4.78958	.434	-22.6544	4.8949
	FSCS	-46.3598*	10.09290	.000	-75.3866	-17.3329
	Multiple	-32.4383*	5.60325	.000	-48.5531	-16.3235
TSS	SSP	4.5643	4.59850	.920	-8.6609	17.7895
	SW-PBIS	.6717	5.40491	1.000	-14.8727	16.2160
	RJP	-4.3155	6.13755	.981	-21.9669	13.3359
	FSCS	-41.7955*	10.79796	.002	-72.8501	-10.7408
	Multiple	-27.8740*	6.79161	.001	-47.4065	-8.3416
SW-PBIS	SSP	3.8926	3.80573	.910	-7.0526	14.8378
	TSS	-.6717	5.40491	1.000	-16.2160	14.8727
	RJP	-4.9871	5.56838	.947	-21.0016	11.0273
	FSCS	-42.4671*	10.48491	.001	-72.6214	-12.3129
	Multiple	-28.5457*	6.28198	.000	-46.6125	-10.4789
RJP	SSP	8.8798	4.78958	.434	-4.8949	22.6544
	TSS	4.3155	6.13755	.981	-13.3359	21.9669
	SW-PBIS	4.9871	5.56838	.947	-11.0273	21.0016
	FSCS	-37.4800*	10.88071	.009	-68.7726	-6.1874
	Multiple	-23.5586*	6.92240	.010	-43.4672	-3.6499
FSCS	SSP	46.3598*	10.09290	.000	17.3329	75.3866
	TSS	41.7955*	10.79796	.002	10.7408	72.8501
	SW-PBIS	42.4671*	10.48491	.001	12.3129	72.6214
	RJP	37.4800*	10.88071	.009	6.1874	68.7726
	Multiple	13.9214	11.26260	.819	-18.4695	46.3123
Multiple	SSP	32.4383*	5.60325	.000	16.3235	48.5531
	TSS	27.8740*	6.79161	.001	8.3416	47.4065
	SW-PBIS	28.5457*	6.28198	.000	10.4789	46.6125
	RJP	23.5586*	6.92240	.010	3.6499	43.4672
	FSCS	-13.9214	11.26260	.819	-46.3123	18.4695

The mean differences in economic disadvantage from districts implementing SSP (27.69%), SW-PBIS (24.75%), and RJP (24.08%) to the districts implementing FSCS were statistically significant ($p < .05$) increases (Table 13). Similarly, the mean differences in economic disadvantage from districts implementing SSP (21.38%), TSS

(16.29%), SW-PBIS (18.44%), and RJP (17.76%) to districts implementing multiple approaches were also statistically significant ($p < .05$) increases (Table 13).

Table 13

Tukey HSD Multiple Comparisons – Socioeconomic Compositions

(I) School discipline approach	(J) School discipline approach	Mean difference (I-J)	Std. error	Sig.	95% Confidence interval Lower bound	Upper bound
SSP	TSS	-5.0878	3.41757	.672	-14.9166	4.7411
	SW-PBIS	-2.9393	2.82839	.904	-11.0737	5.1950
	RJP	-3.6150	3.55957	.912	-13.8523	6.6222
	FSCS	-27.6900*	7.50095	.004	-49.2626	-6.1175
	Multiple	-21.3793*	4.16429	.000	-33.3557	-9.4030
TSS	SSP	5.0878	3.41757	.672	-4.7411	14.9166
	SW-PBIS	2.1484	4.01688	.995	-9.4040	13.7009
	RJP	1.4727	4.56137	1.000	-11.6456	14.5911
	FSCS	-22.6023	8.02495	.059	-45.6818	.4772
	Multiple	-16.2916*	5.04746	.018	-30.8079	-1.7752
SW-PBIS	SSP	2.9393	2.82839	.904	-5.1950	11.0737
	TSS	-2.1484	4.01688	.995	-13.7009	9.4040
	RJP	-.6757	4.13837	1.000	-12.5775	11.2261
	FSCS	-24.7507*	7.79230	.021	-47.1611	-2.3403
	Multiple	-18.4400*	4.66871	.001	-31.8671	-5.0129
RJP	SSP	3.6150	3.55957	.912	-6.6222	13.8523
	TSS	-1.4727	4.56137	1.000	-14.5911	11.6456
	SW-PBIS	.6757	4.13837	1.000	-11.2261	12.5775
	FSCS	-24.0750*	8.08645	.038	-47.3314	-.8186
	Multiple	-17.7643*	5.14467	.009	-32.5602	-2.9684
FSCS	SSP	27.6900*	7.50095	.004	6.1175	49.2626
	TSS	22.6023	8.02495	.059	-.4772	45.6818
	SW-PBIS	24.7507*	7.79230	.021	2.3403	47.1611
	RJP	24.0750*	8.08645	.038	.8186	47.3314
	Multiple	6.3107	8.37027	.975	-17.7619	30.3833
Multiple	SSP	21.3793*	4.16429	.000	9.4030	33.3557
	TSS	16.2916*	5.04746	.018	1.7752	30.8079
	SW-PBIS	18.4400*	4.66871	.001	5.0129	31.8671
	RJP	17.7643*	5.14467	.009	2.9684	32.5602
	FSCS	-6.3107	8.37027	.975	-30.3833	17.7619

Overall, districts varied significantly in their racial and socioeconomic compositions. Districts with the highest levels of minority representation and concentrated poverty were most likely to implement either the FSCS approach or a

combination of multiple models. Given the significant differences in composition between districts implementing the various school discipline approaches, controlling for racial and socioeconomic composition changed the pattern of suspension rate means. For the two groups, FSCS and multiple, with the highest enrollments of racial minorities and economically disadvantaged students the unadjusted means were higher than the unadjusted mean of the districts implementing the SSP. However, after adjusting the mean suspension rates to control for the confounding variables their adjusted means were brought into alignment with the other alternative approaches, lower than the SSP districts. (Table 14).

Therefore, without controlling for race and economic disadvantage, suspension rates for districts with high concentrations of these populations could be misleading and the interventions could be mistakenly interpreted as ineffective. The higher suspension rates for these districts are thus attributed to their racial and socioeconomic composition. Given their composition, the FSCS and multiple model districts did have lower adjusted suspension rates than districts implementing only the SSP suggesting that these approaches were effective in reducing suspension rates.

Table 14

Unadjusted and Adjusted Means

School discipline approach	Unadjusted mean	Adjusted means
SSP	3.023	3.481[a]
TSS	2.618	2.401[a]
SW-PBIS	2.654	2.701[a]
RJP	2.643	2.524[a]
FSCS	5.953	2.368[a]
Multiple	5.439	2.834[a]

Note. Covariates appearing in the model are evaluated at the following values: Racial Composition = 27.2243, Socioeconomic Composition = 24.0330.

Finally, Bonferroni post hoc testing, by making pairwise comparisons, was completed to determine the differences that existed between the groups. Adjusted means are presented unless otherwise stated. Suspension rate was greatest in the SSP group (M = 3.48, SE = 0.17), but not statistically significant when compared individually to the TSS group (M = 2.40, SE = 0.40), a mean difference of 1.080, 95% CI [-.218, 2.377], p = .214; the SW-PBIS group (M = 2.70, SE = 0.32), a mean difference of .780, 95% CI [-.291, 1.852], p = .476; the RJP group (M = 2.52, SE = 0.42), a mean difference of .958, 95% CI [-.397, 2.312], p = .456; the FSCS group (M = 2.37, SE = 0.98), a mean difference of 1.113, 95% CI [-1.871, 4.098], p = 1.000; and the Multiple group (M = 2.83, SE = 0.54), a mean difference of 0.647, 95% CI [-1.066, 2.360], p = 1.000; respectively (Table 15).

Suspension rate was also greater in the Multiple group (M = 2.83, SE = 0.54), but not statistically significant, when compared individually to the TSS group (M = 2.40, SE = 0.40), a mean difference of -.433, 95% CI [-2.420, 1.554], p = 1.000; the SW-PBIS group (M = 2.70, SE = 0.32), a mean difference of -.133, 95% CI [-1.993, 1.727], p = 1.000; the RJP group (M = 2.52, SE = 0.42), a mean difference of -.310, 95% CI [-2.323, 1.702], p = 1.000; and the FSCS group (M = 2.37, SE = 0.98), a mean difference of -.466, 95% CI [-3.638, 2.706], p = 1.000 (Table 15).

Suspension rate was lowest in the FSCS group (M = 2.37, SE = 0.98), but not statistically significant when compared individually to the TSS group (M = 2.40, SE = 0.40), a mean difference of 0.034, 95% CI [-3.108, 3.175], p = 1.000, the SW-PBIS group (M = 2.70, SE = 0.32), a mean difference of 0.333, 95% CI [-2.731, 3.398], p = 1.000; or

the RJP group (M = 2.52, SE = 0.42), a mean difference of 0.156, 95% CI [-2.995, 3.307], p = 1.000 (Table 15).

Suspension rate was lower in the TSS group (M = 2.40, SE = 0.40), but not statistically significant, when compared individually to the SW-PBIS group (M = 2.70, SE = 0.32), a mean difference of -.300, 95% CI [-1.817, 1.218], p = 1.000; or the RJP group (M = 2.52, SE = 0.42), a mean difference of -.122, 95% CI [-1.849, 1.605], p = .1000 (Table 15).

Finally, the suspension rate was lower in the RJP group (M = 2.52, SE = 0.42), but not statistically significant, when compared individually to the SW-PBIS group (M = 2.70, SE = 0.32), a mean difference of 0.177, 95% CI [-1.389, 1.743], p = 1.000 (Table 15).

Overall, the Bonferroni pairwise comparisons failed to produce statistically significant differences between group means when compared individually. This result may have been impacted by the differences in group sizes. However, districts only following the SSP continued to have the highest suspension rates, while FSCS districts produced the lowest suspension rates after controlling for race and economic disadvantage. It is also noted that all of the alternative approaches individually produced lower suspension rates than districts implementing multiple approaches.

Table 15

Pairwise Comparisons

(I) School discipline approach	(J) School discipline approach	Mean difference (I-J)	Std. error	Sig.[a]	95% Confidence interval for difference[a]	
					Lower bound	Upper bound
SSP	TSS	1.080	.437	.214	-.218	2.377
	SW-PBIS	.780	.361	.476	-.291	1.852
	RJP	.958	.456	.556	-.397	2.312
	FSCS	1.113	1.005	1.000	-1.871	4.098
	Multiple	.647	.577	1.000	-1.066	2.360
TSS	SSP	-1.080	.437	.214	-2.377	.218
	SW-PBIS	-.300	.511	1.000	-1.817	1.218
	RJP	-.122	.582	1.000	-1.849	1.605
	FSCS	.034	1.058	1.000	-3.108	3.175
	Multiple	-.433	.669	1.000	-2.420	1.554
SW-PBIS	SSP	-.780	.361	.476	-1.852	.291
	TSS	.300	.511	1.000	-1.218	1.817
	RJP	.177	.527	1.000	-1.389	1.743
	FSCS	.333	1.032	1.000	-2.731	3.398
	Multiple	-.133	.627	1.000	-1.993	1.727
RJP	SSP	-.958	.456	.556	-2.312	.397
	TSS	.122	.582	1.000	-1.605	1.849
	SW-PBIS	-.177	.527	1.000	-1.743	1.389
	FSCS	.156	1.061	1.000	-2.995	3.307
	Multiple	-.310	.678	1.000	-2.323	1.702
FSCS	SSP	-1.113	1.005	1.000	-4.098	1.871
	TSS	-.034	1.058	1.000	-3.175	3.108
	SW-PBIS	-.333	1.032	1.000	-3.398	2.731
	RJP	-.156	1.061	1.000	-3.307	2.995
	Multiple	-.466	1.068	1.000	-3.638	2.706
Multiple	SSP	-.647	.577	1.000	-2.360	1.066
	TSS	.433	.669	1.000	-1.554	2.420
	SW-PBIS	.133	.627	1.000	-1.727	1.993
	RJP	.310	.678	1.000	-1.702	2.323
	FSCS	.466	1.068	1.000	-2.706	3.638

a. *Note.* Based on estimated marginal means, [a]Adjustment for multiple comparisons: Bonferroni.

Overall, the ANCOVA revealed that the mean suspension rate was statistically significantly greater in the SSP group than the alternatives. Therefore, the null hypothesis was rejected. There was a statistically significant relationship between suspension rates and school discipline approaches when controlling for the racial and socioeconomic composition of school districts. However, the Bonferroni post hoc testing

failed to reveal statistically significant differences between each of individual school discipline approaches through pairwise comparisons.

Summary

The research question of this study considered how suspension rates vary according to different school discipline approaches when controlling for the racial and socioeconomic composition of the school districts. An ANCOVA was performed to determine the effect of school discipline approaches following the standard state policy, trauma sensitive schools, school-wide positive behavior interventions and supports, restorative justice practices, full-service community schools, and districts implementing multiple alternatives to the standard state policy. After adjusting for the racial and socioeconomic composition of the districts, the mean suspension rate for districts following the standard state policy was higher than all of the alternatives. The difference was statistically significant. Therefore, the null hypothesis was rejected and post hoc testing was performed.

Districts implementing the FSCS and multiple approaches had statistically significantly higher compositions of racial minorities and economically disadvantaged students. For both of these groups, the unadjusted means of suspension rates were higher than the unadjusted mean of the SSP districts. Controlling for the confounding variables showed that the higher suspension rates for these districts are attributable to their racial and socioeconomic composition and the implementation of these approaches effectively reduced suspensions.

While Bonferroni pairwise comparisons failed to show statistically significant differences between the adjusted means of the school discipline groups, the SSP group produced higher adjusted suspension rates than all of the alternative groups. When multiple approaches were implemented within the same district they produced higher suspension rates than when each of the alternatives were implemented individually. Of the alternative approaches, FSCS districts produced the lowest suspension rates after controlling for race and economic disadvantage.

Chapter 5 provides an interpretation of these findings and consider how these finding contribute to the current body of knowledge in relation to previous research and the theoretical framework. In it, I will include a discussion of the limitations of the study, provide recommendations for further research, describe the implications for social change, and make recommendations for practice.

Chapter 5: Discussion

Introduction

The purpose of this study was to investigate the consequences of various approaches to school discipline policy on suspension rates as a mechanism to diffuse effective innovations intended to address the problem of the school-to-prison pipeline. I did this by comparing the suspension rates of public and public charter school districts throughout Massachusetts. Suspensions, which exclude students from their learning environments, disproportionately impact students who are in racial minority groups and who are economically disadvantaged (Cholewa et al., 2014). Therefore, to determine the impact of the school discipline policies separate from the racial and socioeconomic composition of the districts, it was necessary to control for these demographic characteristics.

Using data reported publicly by school districts through the MA-DESE website, I conducted an ANCOVA of the data from all K-12 public and public charter school districts in Massachusetts. My results showed that use of the alternative discipline approaches significantly reduces suspension rates when controlling for race and economic disadvantage. In this chapter, I provide an interpretation of the findings, consider the limitations of the study, make recommendations for further research, and discuss the study's implications for positive social change and future practice.

Interpretation of the Findings

In this study, I sought to answer the question of whether the school discipline approaches of school districts affect suspension rates. Analysis of the public

accountability data reported by the MA-DESE confirmed the persistence of disproportionalities of race and economic disadvantage in the administration of school discipline policies and extended scholarly understanding of suspension rates in relation to proposed rehabilitative alternatives to standard state school discipline policies during the 2016-2017 academic year. As described in Chapter 2, school districts composed of higher percentages of racial minority and/or economically disadvantaged students have consistently yielded higher suspension rates (Gastic, 2017; Shabazian, 2015). My findings confirmed that racial composition of the districts accounted for 25.5% of the variation in suspension rates and the socioeconomic composition of the districts accounted for 52.0% of the variation in suspension rates. These results verified the need to control for these variables to determine how much of the variability in suspension rates could be attributed to the discipline approaches rather than to these factors. However, these findings also indicated the continued need to address why and how race and economic disadvantage contribute to problem behaviors and the administration of exclusionary discipline.

The literature I reviewed in Chapter 2 showed that there are several rehabilitative alternatives currently being considered by public education policy makers, including SW-PBIS (Greflund, McIntosh, Mercer, & May, 2014), TSS (Plumb, Bush, & Kersevich, 2016), RJP (Armour, 2016), and FSCS (Biag & Castrechini, 2015). The previous research studies done in this area have focused on the beliefs, perceptions, and experiences of students and educators in the implementation of the various approaches (Anyon et al., 2016; Berlowitz et al., 2017; Coleman, 2015; Snapp et al., 2015);

implementation processes and challenges (Min et al., 2017; Newton et al., 2017; Phifer & Hull, 2016); and the impacts of individual approaches (Flannery et al., 2014; Gregory et al., 2015; Plumb et al., 2016; Sanders, 2016), but did not provide side by side comparison of suspension rates to inform policy diffusion. In this study I provided such comparison and, based on the ANCOVA results, found that districts implementing rehabilitative alternatives produced a statistically significant decrease in suspension rates over districts implementing only the standard state policy when controlling for race and economic disadvantage.

As the literature has shown, race and economic disadvantage significantly influence schools' use of suspension (Cholewa et al., 2017; Shabazian, 2015; Van Dyke, 2016), and majority minority districts were more likely to rely on exclusionary discipline practices (Roch & Edwards, 2017). Post hoc testing completed for this study similarly revealed that districts with concentrated poverty and majority minority populations had higher suspension rates, but I also found that, in Massachusetts, these districts were more likely to implement either the FSCS approach or multiple rehabilitative alternatives rather than relying on exclusionary practices.

While pairwise comparisons failed to reveal any statistically significant differences between suspension rates for the discipline approaches, it is noteworthy that the suspension rate for districts implementing multiple approaches was higher than all the alternatives implemented individually after controlling for racial and socioeconomic composition. This may suggest that implementing more than one approach interferes with the fidelity of implementation of the approaches, particularly if the approaches are

ideologically incongruent. For example, SW-PBIS is associated with the behaviorist tradition (Bal, 2018) while RJP, TSS, and FSCS models follow more humanistic ideologies (Kronick, 2005; Phifer & Hull, 2016; Rideout, Roland, Salinitri, & Frey, 2010). Behaviorism and humanism can be incompatible in the same setting because they create competing cultures that undermine effectiveness (Kennedy-Lewis, 2015).

Rogers's (1995) diffusion of innovations theory provided the theoretical framework for this study. This theory considers the importance of understanding the impact of a policy innovation for diffusion and adoption by decision makers. In the context of this theory, the findings of this study indicated that policymakers may consider choosing any of these alternatives with confidence that they will reduce suspensions while taking into consideration the unique needs and values of their communities. Innovations that are perceived as a relative advantage over prior practice are more likely to be adopted (Hartzler, 2015), particularly when the innovations are compatible with the prevailing ideology (Butler et al., 2017) and current values, trends, and needs (Mâsse et al., 2013).

Limitations of the Study

As discussed in Chapter 1, I made certain assumptions that may have limited the reliability of the study's results. I assumed that the school districts reported to be using the ascribed discipline approaches were doing so with fidelity. If districts were not implementing their models effectively, their suspension rates may not have accurately reflected the full capacity of the intervention to reduce suspensions. Similarly, this study did not account for the length of time that the approaches had been implemented;

therefore, many districts may have not yet realized the full implementation effect. In addition, it could not be determined exactly when implementation began for each district; therefore, I could not compare suspension rates before and after implementation.

For this study, I was unable to control how many districts implemented each of the alternatives. This produced an unequal distribution among the groups of the independent variable. Group sizes ranged from just 4 districts in the FSCS group to 123 districts in the SSP group. This discrepancy may have decreased the power of the statistical analysis.

The full population of school districts in Massachusetts, with exclusions reported in Chapter 3, provided complete geographic coverage of the state including urban, rural, and suburban districts, as well as the full range of socioeconomic conditions providing strong external validity. However, despite using the full population of school districts in Massachusetts, the sample size of 218 districts may have limited the power of the analysis given 6 levels of the independent variable and 2 covariates. The analysis may have been strengthened by adding a second state to enlarge the data set. However, a second state was not identified as a policy leader likely to influence policy makers in other states in this area of policy while also implementing all the same discipline approaches. In addition, the standard state policies of other states likely include differences that would have further confounded the results.

As reported in Chapter 4, there were also violations of the statistical assumptions that may have weakened the strength of the ANCOVA. The assumptions of linearity, homoscedasticity, and homogeneity of conditional variances were met. However, the

assumption of homogeneity of within-group regression slopes was met for each of the covariates individually, but the assumption was not met when the covariates were combined in the model. In addition, the assumption of normality was met for four groups of the independent variable, but not for two of the groups. The potential consequence of both assumption violations is false retention of the null hypothesis. Given that the findings allowed rejection of the null hypothesis, these violations did not impair the ANCOVA, but may have contributed to the lack of findings in the post hoc pairwise comparisons.

Despite these limitations, this study provides an initial side-by-side comparison of school discipline approaches that has been absent from this body of knowledge. This study provides evidence that there are viable and effective alternatives to zero tolerance and exclusionary practices that can lead to safer and more supportive learning environments. Given the geographic coverage, including rural, suburban, and urban districts, these results may be generalized to expect similar performances in other states and districts.

Recommendations

In this study, I used data collected from a single state to determine how school discipline approaches affect suspension rates. The results of this study indicated that policymakers can be confident that investment in implementation of alternative approaches will significantly reduce suspension. Therefore, as diffusion of these approaches progresses, this work needs to be taken a step further by including more school districts implementing the alternatives across multiple states. This would create a

larger dataset with larger group sizes, allowing data analysis to be more sensitive to differences between groups. Ideally, future research would also have group sizes more equal. This could be achieved through a purposive sampling procedure.

This study was limited to a comparison of suspension rates between groups. Previous research has also associated the school-to-prison pipeline problem with the academic (Faria et al., 2017), social (Wolf & Kupchick, 2017), emotional (Buckmaster, 2016), and economic (Marchbanks et al., 2014) costs of high suspension rates. I recommend that this study be replicated comparing these outcomes between the alternative discipline approaches to determine if their effectiveness extends to improvements in these areas as well.

I assumed that the alternative approaches were implemented consistently and with fidelity. Future research comparing the alternative approaches would attempt to measure and control for implementation fidelity. This could be achieved by including a survey of school district staff and administrators and using the average implementation score as a control variable.

This study was retrospective, using data from a single school year, thus including districts at all stages of implementation. I recommend that data be collected and compared over a longer time period to determine the full implementation effect and how long it takes to achieve. This can be achieved via a time series study beginning before implementation and extending several years after implementation to track changes in suspension rates and/or other outcome variables.

This study also confirmed that, despite the implementation of alternative discipline approaches, disproportionalities in suspension rates continue to persist for racial minorities and students that are economically disadvantaged. Therefore, these approaches failed to close the discipline gap discussed by Losen (2015). Future research should investigate approaches and programs developed to address other unmet needs, such as learning English as a second language, learning disabilities, and behavior mismanagement by early career teachers which are all significantly higher among racial minority and economically disadvantaged students and contribute to higher suspension rates (Losen, Ee, Hodson, & Martinez, 2015; Mitchell, 2017; Peguero et al., 2017).

The finding that the suspension rate for districts implementing multiple approaches was still higher than all the alternatives implemented individually after controlling for racial and socioeconomic composition may suggest that implementing more than one approach interferes with the fidelity of implementation of the approaches, particularly if the approaches are ideologically incongruent. Further investigation of how approaches interact within a district may be a direction for future research, by separating that group into subgroups based on their combinations of approaches to compare their differences in suspension rates.

Additional research is also needed to evaluate attitudes toward alternative school discipline policies. Buy in from stakeholders, such as the educators and school administrators, whose participation is necessary for effective implementation is a key component achieving policy goals (Flannery et al., 2014). Therefore, future research would measure buy in before and after trainings to evaluate the effectivenss of the

training to generate buy in for the alternative school discipline approach, predict implementation fidelity, and/or consider the impact of buy in as a moderating variable between school discipline approaches and suspension rates.

Implications

This study contributes to the growing body of literature concerned with addressing the problem of the school-to-prison pipeline by filling the need to provide policy decision makers with evidence supporting diffusion of alternative approaches to school discipline. Local, state, and national policy makers within education agencies and legislative bodies can use the evidence provided in the study, showing that alternative discipline approaches significantly reduce suspension rates, to justify investment in implementation of these approaches. Also, because there was no statistically significant difference between the alternative approaches, policy makers may choose from among them to select the approach that is best aligned with their values, needs, and trends. For example, a school district significantly impacted by a natural disaster may choose to implement the TSS approach, a district with a lack of community resources and high poverty may find the FSCS approach more beneficial, a district dealing with deep racial divides may opt for the RJP approach, and a district that is interested in proactively developing social and emotional skills could choose the SW-PBIS model.

While previous research in this area has focused on evaluating single policies (Flannery et al., 2014; Gregory et al., 2015; Min et al., 2017; Plumb et al., 2016), this study provides a model for conducting consequences of innovation research comparing the effectiveness of various policies targeting the same goal. By identifying the common

goal of these policies as the outcome variable and identifying a leader state in this policy arena, I was able to provide evidence supporting adoption of various alternative policies. Laggard states may be more likely to consider adoption and diffusion of these policies with such a side-by-side comparison.

One of the greatest challenges encountered during the collection of data for this research study was identifying which school districts were implementing which alternative policies and when they began implementation. It was discovered that there was no state level coordination or monitoring of implementation for some of these alternatives and where there was state level coordination through grant programs, there was no coordination between grant program administrators. Therefore, in future practice, it is recommended that state education agencies improve coordination and monitoring of efforts to implement alternative strategies being used across local school districts. This would allow greater sharing of information between districts implementing similar programs, coordinated training efforts, and efficient collection of data to evaluate the effectiveness of these and future policies and programs.

This study reinforces to practitioners, such as professional educators and school administrators, that the practice of exclusionary discipline disproportionately impacts minority and economically disadvantaged students. This study promotes buy in and adoption of these approaches, that aim to keep students in the classroom. School discipline approaches that address the underlying problems beneath the behavior are more effective than punishing students by excluding them from their learning environment.

This study is intended to create positive social change by providing policy makers with school discipline policy options that are evidence-based alternatives to zero tolerance and reduce reliance on exclusionary discipline that push students out of the education system and into the criminal justice system. By addressing the underlying needs and social-emotional development of students, these alternatives hold the promise of safer and more supportive schools that build stronger communities and greater economic prosperity. The social and economic harm of exclusionary discipline has been well established, and the alternatives presented in this study have been shown to significantly reduce suspension rates. This study does not present a one-size-fits-all solution but provides evidence to support various alternatives from which policy makers may choose based on the needs and values of their individual communities.

Conclusion

Under the Obama Administration, the U.S. Department of Education recognized that school discipline policies that exclude students from the learning environment promote a cycle of academic failure that pushes them out of economic opportunities and into the school-to-prison pipeline (Duncan, 2014). Recent school reform efforts have promoted innovative strategies that seek to reduce dependency on exclusionary discipline by addressing the underlying causes of problematic behavior. This study provides evidence that SW-PBIS, TSS, RJP, and FSCS significantly reduce suspension rates, keeping more students in their learning environments. Overall, the school districts implementing these alternative approaches to school discipline were found to have significantly lower suspension rates than districts that were continuing to strictly follow

the standard state policy when controlling for the racial and socioeconomic composition of the districts. Therefore, policy makers concerned with reducing suspension rates in their education systems may consider choosing from among these evidence-based alternatives while taking into account the needs and values of their communities without being forced into a one-size-fits all solution.

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