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EXAMINING THE IMPACT OF INTEGRATED STUDENT SUPPORTS ON EXCLUSIONARY DISCIPLINE IN HIGH-POVERTY SCHOOLS

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Examining the Impact of Integrated Student Supports on Exclusionary Discipline in High-Poverty Schools

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Students with complex needs and marginalized identities attending high-poverty schools are suspended at higher rates than their more advantaged peers (Mcloughin & Noltemeyer, 2010; Noltemeyer & Mcloughlin, 2010; Erb-Downward & Blakeslee, 2021). When students are suspended from school, they miss out on critical opportunities for instruction and connection. This can increase the likelihood that suspended students will experience a myriad of negative short-term and long-term outcomes, such as lower school engagement, poorer academic performance, school dropout, and justice system involvement (McNeely et al., 2002; Chu & Ready, 2018; Arcia, 2007; Amemiya et al., 2020; Noltemeyer et al., 2015). Supporting the needs of students, teachers, and the school community as a whole, while effectively managing student misbehavior, is a complex task without an easy answer.

Integrated Student Supports (ISS) are a systemic approach to addressing students' out-of-school needs to promote thriving. This approach utilizes several tiers of support to promote positive outcomes for all students in the school community (Adelman & Taylor, 2011). City Connects, an ISS model implemented in high-poverty urban elementary and middle schools, provides tailored supports and resources to all students in the school community and equips school staff with whole child information about their students. While City Connects was not developed to directly reduce suspension rates, many of the model's practices (e.g., connecting students with tailored supports, identifying students' unique strengths and needs, indicating a tier of risk for each student) may indirectly 1) address the mechanisms that drive high suspension

rates in high poverty schools and 2) promote more positive outcomes for students who have been suspended.

In the current study, difference-in-differences analyses identified trends in suspension rates in City Connects schools, compared to similar non-City Connects schools. Chi-square analyses examined patterns in how frequently suspended and non-suspended students in City Connects schools were identified as needing intensive supports. Longitudinal regression and moderation analyses investigated the relationship between receiving City Connects and suspended students' outcomes.

Overall, there is some evidence that City Connects may contribute to maintaining lower school-suspension rates in consistently underperforming schools. The study also found that students who were suspended in City Connects schools were more likely to be identified as needing more intensive supports, compared to students in City Connects schools who were not suspended. Within the district of interest, attending a City Connects elementary school for at least two years was associated with better academic outcomes and slightly better attendance and suspension outcomes in fifth grade. Being suspended at least once in elementary school had an overall negative association with fifth grade academic, attendance, and suspension outcomes. For students who were suspended at least once in elementary school, attending a City Connects school for at least two years was associated with higher math standardized test scores in fifth grade.

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Table of Contents

Chapter 1: Introduction

Since the peak of the utilization of zero-tolerance discipline practices in the 1980s-1990s to promote school safety, students have been removed and excluded from the classroom, through suspensions and expulsions, at an alarming rate (American Psychological Association, 2008). These policies rely on exclusionary discipline (e.g., suspensions, expulsions) to remove students from the classroom as a form of punishment for non-violent offenses (e.g., disruption, defiance, disrespect), to reduce the likelihood of students engaging in those behaviors, and to promote positive school climate (APA, 2008). As a result, more than 2.6 million children are removed from school through out-of-school suspension each year (Civil Rights Data Collection, 2018). This has significantly contributed to U.S. K-12 students losing out on over 11 million days of school instruction, due to out-of-school suspensions (Losen & Whitaker, 2018). Increases in exclusionary discipline have impacted students of all ages, including elementary and preschool-aged children (Jacobsen et al., 2019; Gilliam & Shahar, 2006; Gilliam, 2005). Students of color, special education students, low income students, and students attending high poverty schools are disproportionately likely to be suspended from school (Mcloughin & Noltemeyer, 2010; Noltemeyer & Mcloughlin, 2010; Erb-Downward & Blakeslee, 2021).

The negative effects of exclusionary discipline go far beyond students' lost days of classroom-based instruction. Research suggests an association between suspensions and a number of negative student outcomes such as: lower levels of school connectedness, lower attendance rates, poorer academic achievement, more disruptive behaviors, and higher dropout rates (McNeely et al., 2002; Chu & Ready, 2018; Arcia, 2007; Amemiya et al., 2020; Noltemeyer et al., 2015). The impact of these high rates of exclusionary discipline on school communities and individual students, particularly their contribution to the increased likelihood of

future system involvement through the school-to-prison pipeline, has been receiving significant attention from policy-makers, school administrators, and other stakeholders. Alternative responses to exclusionary discipline, as well as systemic approaches that address the holistic needs of students who have experienced exclusionary discipline, are critical to keep school communities feeling safe and supportive to all students.

This chapter will begin with a brief discussion how school-based interventions can impact complex challenges that students and school communities face. Next, City Connects is introduced as an evidence-backed school-based intervention that impacts positive change for students, school staff, and communities by providing holistic, integrated student support. The chapter will then describe the need to reduce exclusionary discipline rates and better support students who have been suspended. The first chapter will conclude with a theory-driven discussion of how the City Connects model can serve as a potential solution for these problems, setting up the basis of this dissertation.

School-Based Intervention

Schools have long been recognized as an ideal context to provide services to students, due their accessibility to a wide range of children and families (U.S. Department of Health and Human Services, 1999; Brabeck et al., 1997). Children and families living in under-resourced communities often have fewer options for health, mental health, enrichment activities, and other critical resources, compared to those living in higher income areas (Dearing, 2008; Dearing et al., 2009). Schools represent one of the most accessible contexts for many children to receive mental health and other key services, due to having trained personnel (e.g., nurses, counselors, occupational therapists, etc.) with a deep understanding of students' performance, abilities, strengths, and areas of need (Maag & Katsiyannis, 2010). This, coupled with students' and

families' familiarity with the school setting, creates a comfortable and easily accessed context for children and youth to receive prevention and intervention services (Walsh et al., 2023; Masia-Warner et al., 2006). Due to an increased recognition of the significant role that non-academic factors play in students' presentations in school, many of these school-based services do not have a sole academic focus (Walsh et al., 2014).

Best practices for supporting students within the context of school have begun to place a greater emphasis on addressing the out-of-school factors that impact a student's ability to thrive (Wasser Gish, 2019). Systems of student support (often called integrated student supports) address the call for schools to adopt a comprehensive, coordinated approach to addressing students' needs while capitalizing on their strengths (Marx et al., 1998; Walsh et al., 2014; Walsh et al., 2016). These systems of care integrate students' non-academic and academic domains of development while intervening across multiple developmental contexts (e.g., family, community, school) (Brabeck et al., 1997). This push towards a comprehensive, coordinated approach to school-based student support has only become more pertinent in recent years to match the complexity of the challenges that today's children face (Walsh et al., 2016).

Now, more than ever, there is a demand for non-academic services for children and youth. There has been a longstanding gap in students who need services for mental health and behavioral difficulties and students who actually receive these services (Maag & Katsiyannis, 2010; Mitchell et al., 2019). In late 2021, the U.S. Surgeon General issued an advisory on the youth mental health crisis due to significant increases in youth mental health challenges, coupled with the unique challenges faced by individuals of all ages due to the ongoing COVID-19 pandemic. Integrated student support interventions have been critically important in responding to students' complex and immediate needs during these unprecedented times (Pollack et al.,

2021). This dissertation focuses on one comprehensive, holistic model of student support- City Connects. The following sections will provide a brief description of the model and a discussion of the potential roles it can play in developing better systems of managing student misbehavior and supporting students who have been suspended.

The City Connects Intervention

City Connects is an evidence-backed, integrated student support intervention. Since 2000, City Connects has been providing students in high poverty schools with tailored services and supports. In the 2020-21 school year, approximately 26,000 students received the City Connects intervention in more than 90 public, charter, and private schools across six states (City Connects, 2022). During that same year, City Connects had its first international expansion to the Northeast Inner City neighborhood of Dublin, Ireland. The majority of City Connects schools serve students in Kindergarten through 8th grade (City Connects, 2018).

The model is implemented by a City Connects coordinator, a Master's-level school counselor or social worker, who works with teachers and other school staff to identify the unique strengths and needs of each student, every year. This process is called the Whole Class Review (Walsh et al., 2014). Each year, approximately one tenth of students in the school with the most complex needs receive an in-depth plan with specific measurable goals and strategies through an Individual Student Review. This plan is developed through a meeting which gathers professionals across the school community to engage in a thorough discussion about the identified student (City Connects, 2018).

The City Connects intervention is unique in that each student in the school community is included and receives tailored services and referrals based on their interests and identified areas for growth. The model utilizes a holistic approach, in which the whole child, across of each of

their key developmental domains (social-emotional, family, health, and academic), is considered. This differs from many other school-based K-12 interventions, which focus on a) students' pathology/needs without looking at their interests or strengths, b) one domain of students' development without considering the student as a whole within their context, and c) only students at greatest risk/with the most complex needs without including students with significant areas of strength and need or students who could benefit from more preventative intervention (Walsh et al., 2023). The City Connects intervention is embedded within the school community, which allows for school staff to develop a deeper, better understanding of their students as individuals and facilitates students getting the services and resources they need at the right time.

The City Connects model has been associated with a number of positive outcomes for students. Students who received the City Connects intervention when they were in elementary school had significantly lower high school dropout rates, compared to similar students who attended non-City Connects elementary schools (Lee-St. John et al., 2018). A longitudinal analysis indicated that students attending City Connects schools outperformed their peers in similar non-City Connects schools academically in their performance on math and English statewide tests (Walsh et al., 2014; City Connects, 2014). For immigrant students learning English, receiving City Connects was associated with higher reading and math achievement test scores (Dearing et al., 2016). Other positive outcomes have been identified as well for students who receive the City Connects model, such as lower rates of being held back for students at greatest educational risk and lower rates of chronic absenteeism in middle and high school (City Connects, 2012; City Connects, 2014). While the City Connects model was not developed to directly impact exclusionary discipline rates or support suspended students specifically, the

following sections will discuss the exclusionary discipline-related challenges schools and students face and the ways in which City Connects poses a potential solution.

Current Study

Problem

Exclusionary discipline practices are associated with a number of negative outcomes for students (Losen & Skiba, 2010; Wolf & Kupchik, 2017), and there is a strong body of evidence that harsh zero-tolerance discipline policies do little to decrease student misbehavior and may actually have a negative impact on school climate (APA, 2008). An evidence-based, comprehensive, systematic, preventative approach is necessary to address the high rates at which suspensions are utilized in many high poverty, urban school districts that serve higher proportions of minoritized students (Mcloughlin & Noltemeyer, 2010). Further, an approach is needed to disrupt the pathways between suspensions and other negative outcomes (i.e., the school-to-prison pipeline) (Skiba et al., 2014). An effective approach should strengthen teachers' connections with their students, utilize early intervention/prevention techniques, foster school-community-family connections, serve all students in the school, and address whole child strengths and needs across multiple developmental domains (Anyon et al., 2018; Gregory et al., 2014; Welsh & Little, 2018). However, the majority of approaches seeking to impact the problems associated with exclusionary discipline do not meet each of these criteria.

A number of strategies aiming to decrease the use of exclusionary discipline practices have emerged in recent decades. Generally, these strategies serve only a subset of students and/or are specific only to addressing a limited number of discrete mechanism(s) (e.g., classroom management, teacher perceptions and bias, teacher capacity, teacher-student relationships) through training programs and/or shifts in school policies (Welsh & Little, 2018; Cornell et al.,

2012). Some approaches (e.g., SWPBIS), seek to promote positive behavior and deter misbehavior among all students in the school but do not include a simultaneous focus on teachers' and school leaders' practices or understandings of their students and/or can be challenging for school staff to implement (Welsh & Little, 2018; Menzies et al., 2021). Further, many of these interventions take a reactionary approach to student misbehavior rather than focusing on a preventative approach or seeking to address the underlying mechanisms that increase the likelihood of exclusionary discipline being used (Welsh & Little, 2018).

Most interventions addressing the issues associated with exclusionary discipline focus entirely on reducing rates of exclusionary discipline (Lee & Gage, 2020; Welsh & Little, 2018), rather than seeking to also improve outcomes for students who have been recipients of exclusionary discipline. Several studies looking into how these interventions impact students' academic and behavioral outcomes have not seen positive findings (Ryoo et al., 2018; Bradshaw et al., 2010). Because so many interventions have a sole focus on reducing exclusionary discipline rates, there is very little literature on effective ways to reduce the likelihood of the negative short-term and long-term outcomes associated with exclusionary discipline when it is used (e.g., providing additional supports to students who have been suspended, intervening to address the increased risk for lower school engagement/poorer academic outcomes). This dissertation will examine how one intervention impacts suspension rates and outcomes for suspended students in high poverty schools serving high proportions of minoritized students.

The Current Study

This dissertation addresses the gap in the literature by looking at how a model of integrated student support impacts: 1) school-level rates of exclusionary discipline in K-5 and K-8 schools, 2) how students are supported when they get suspended, and 3) 5th grade outcomes of

students who were suspended in elementary school. This model of integrated student support – City Connects—was selected because it is evidence-backed, theory-driven, and provides tailored, coordinated supports to each student that address their health, family, mental health, and academic strengths and needs to support thriving (Walsh et al., 2014). The intervention is primarily implemented in high poverty public elementary schools, a context that is particularly impacted by high rates of exclusionary discipline (Islam, 2021; Mcloughlin & Noltemeyer, 2010).

Examining the impact of City Connects on suspension rates as well as outcomes for suspended students addresses key the gaps in the current literature. While integrated student support interventions and City Connects specifically were not designed to reduce suspensions or directly shift disciplinary practices in schools, there is a tremendous amount of overlap between existing theoretical work on why students are being suspended and the developmental domains and school-level practices that City Connects addresses (e.g., teacher-student relationships) (Walsh et al., 2014; Sibley et al., 2017; Smolkowski et al., 2016; Welsh & Little, 2018; Anyon et al., 2018). Common features of interventions that have been successful in reducing the use of exclusionary discipline and recommendations for these types of interventions closely align with principles of integrated student support and City Connects. For example, best practices and recommendations for reducing discipline rates and City Connects practices both involve 1) fostering supportive relationships between students and school staff; 2) implementing developmentally appropriate behavioral supports; 3) identifying students' strengths and avoiding defining students by their deficits; 4) developing inclusive, positive classroom and school environments, 5) promoting/recognizing student and family voice in decision-making (Gregory et al., 2017; Amemiya et al., 2020; Walsh et al., 2014; City Connects, 2020; Sibley et al., 2017).

Further, City Connects has improved key outcomes for marginalized students, who are at higher risk of being suspended and experiencing disproportionately negative outcomes following a suspension through the school-to-prison pipeline (Dearing et al., 2016; Walsh et al., 2014).

The school-to-prison pipeline operates through a few key mediators that are more likely to be experienced by suspended students and are associated with later juvenile justice involvement, such as: more negative perceptions of school climate, lower school engagement, lower academic achievement and behavior, and higher dropout rates (Skiba et al., 2014). City Connects has been associated with improving marginalized students' outcomes across these domains, in large part through tailored early intervention and prevention supports (City Connects, 2020).

The current study seeks to explore how an integrated student support model serves students who get suspended from school (e.g., through being identified for more intensive supports or being better understood by their teachers). It also aims to investigate how the model impacts overall suspension rates and suspended students' outcomes that are common mediating factors in the school-to-prison pipeline. The current study focuses on investigating these trends for students who are suspended in elementary school, when students are still learning school norms and socially accepted methods to deal with stress or frustration (Jacobsen et al., 2019; Bothe et al., 2014). The current study will also focus on schools that serve primarily lower socio-economic status, minoritized students, as these are the students who have historically been disproportionately subject to exclusionary discipline (Welsh & Little, 2018; Mcloughlin & Noltemeyer, 2010). These students are also disproportionately likely to experience negative effects (e.g., dropout, justice system involvement) following receiving exclusionary discipline (Losen & Skiba, 2010; Mowen, 2017; Wolf & Kupchik, 2017). The findings from this study

could impact how schools and youth-serving community agencies deliver services for students to prevent them being suspended from school and provide responsive services to students who are suspended to prevent or lessen future negative outcomes.

Chapter 2: Literature Review

This chapter provides a review of the extant empirical literature related to the potential impact of integrated student support models on the use of exclusionary discipline practices in schools. Several overarching themes will be discussed in the following order. First, suspensions are used frequently in many schools throughout the country, largely to address more minor-moderate misbehaviors and are widely used even with elementary-school aged learners (Gregory & Weinstein, 2008; Skiba et al., 2014; Jacobsen et al., 2019). Second, high poverty schools and consistently underperforming schools face complex, multidimensional challenges that impact suspension rates and students' abilities to thrive (Noltemeyer & Mcloughlin, 2010; Steinberg et al., 2019). Third, the link between exclusionary discipline and negative short-term outcomes (e.g., school engagement, academic achievement, lost educational opportunity) and negative long-term outcomes (e.g., justice-system involvement, high school dropout) has been well-established (Skiba et al., 2014; Losen & Skiba, 2010; Hwang, 2018; Rosenbaum, 2020; Chu & Ready, 2018; Noltemeyer et al., 2015; Wolf & Kupchik, 2017). Fourth, exclusionary discipline practices are disproportionately doled out to and have a disproportionate impact on outcomes for marginalized, vulnerable students (e.g., students of color, students attending high poverty schools), making these students more susceptible to the negative short-term and long-term outcomes referenced above (APA, 2008, Mcloughlin & Noltemeyer, 2010; Losen & Skiba, 2010; Mowen, 2017; Wolf & Kupchik, 2017). Fifth, there is a practice-to-research gap in strategies schools are implementing to decrease rates of exclusionary discipline, leading to growing calls for evidence-based, whole-school, long-term approaches that reduce rates of exclusionary discipline, while supporting teachers and fostering a positive school climate (Zakszeski & Rutherford, 2021; Welsh & Little, 2018; Griffith & Tyner, 2019). Sixth, developmental

psychology indicates that providing students who are at risk for negative developmental outcomes (i.e., suspended students) with the right supports and interventions at the right time can shift their developmental trajectory in positive ways (Walsh et al., 2014; Masten & Tellegen, 2012; Zimmerman, 2013). Finally, the literature suggests that evidence-based, theory-driven integrated student support initiatives (e.g., the City Connects intervention) are effective in addressing out-of-school factors which impact students' behavior, decreasing the achievement gap, improving high school graduation rates, providing tailored, multi-tiered services to students, and increasing teachers' understandings of the 'whole child', thereby making their impact on exclusionary discipline and the school-to-prison pipeline crucial to investigate (City Connects, 2018; Walsh et al., 2014; Sibley et al., 2017). The chapter will then discuss the gaps in the current literature. The chapter concludes with a brief literature summary followed by a description of the three interrelated studies that make up this dissertation and aim to fill the gap in the extant literature.

The Use of Exclusionary Discipline in U.S. Schools

School safety has been a topic of significant concern for caregivers and school staff for many decades (APA, 2008). In the 1990s, many caregivers felt concerned about their child's safety while they were at school or in the surrounding neighborhood and many children reported feeling unsafe at school (Vardalis & Kakar, 2000). Concerns and fears primarily focused on increases in violent crimes occurring on or near school property, students bringing weapons to school, assaults, and thefts (Vardalis & Kakar, 2000). In response, zero tolerance policies, which mandate the application of predetermined, punitive consequences for a particular unwanted behavior, regardless of the circumstances or situational context, became increasingly popular in schools to decrease problem behaviors and promote positive school climate (APA, 2008). The

purported purpose of bringing harsh zero tolerance policies to U.S. schools was to utilize severe, consistently applied consequences on students who broke school rules to deter others from doing so and prevent future bad behavior (APA, 2008). However, strong evidence indicates that these policies were not effective in meeting this goal and actually negatively impacted school climate and increased the likelihood of students engaging in unwanted behaviors in the future (APA, 2008; Amemiya et al., 2020; Gerlinger et al., 2021).

Unsurprisingly, the rise of zero tolerance policies in schools led to very high numbers of students being removed from the classroom through suspension or expulsion. Despite overwhelming evidence that harsh, zero tolerance policies do not achieve their original aims, the liberal use of suspension and expulsion in schools has continued throughout the first decades of the 21st century. In the 2015-16 school year, data collected by the U.S. Department of Education's Office for Civil Rights (CRDC) showed that U.S. students lost out on over 11 million days of instruction due to suspensions (Losen & Whittaker, 2018). In other words, for every 100 students attending public school in the United States, 23 days of instruction were lost due to suspensions (Losen & Whittaker, 2018). CRDC data from the 2013-14 school year indicates that over 2.6 million public school students in U.S. schools received an out-of-school suspensions and over 500,000 students received an in-school suspension (CRCD, 2018). And these high suspension rates still do not tell the entire story.

While high rates of suspensions are consistently recorded in many schools across the nation, school-reported suspensions do not always paint a full picture due to disparities in how exclusionary discipline is recorded and documented at the school-level. A Hechinger Report investigation published in 2023 found that many California schools and districts pushed students to voluntarily or involuntarily transfer, effectively avoiding reporting these instances as

expulsions even though they caused similar disruption in students' lives (Mathewson, 2023). Documentation of in-school and out-of-school suspensions are also often incomplete or inaccurately recorded as absences (Wood et al., 2021). For example, when a student is only removed from the classroom for part of the day or when a parent is told to pick their child up from school and encouraged to keep them home the next day, these instances often aren't recorded as suspensions and can lead to under-reporting the number of students who are removed from the classroom for disciplinary issues (Wood et al., 2021).

High rates of suspensions in schools cannot fully be explained by students frequently engaging in unsafe or extreme misbehaviors. The most serious infractions (i.e., bringing a weapon to school) are generally a reliable predictor of more serious disciplinary outcomes (e.g., suspension or expulsion), but many students are removed from the classroom for more minor misbehaviors (Skiba et al., 2014). Suspensions are often used in response to truancy/tardiness, noncompliance, defiance, and general disruption, particularly when the student is Latinx or Black (Skiba et al., 2011; Gregory & Weinstein, 2008). Giving punishments for minor misbehaviors or limit-pushing at school, such as violating dress codes in favor of 'fashionable' clothing or talking with friends during class, can backfire, as these behaviors are generally normative in terms of adolescent development, and punishing them, even with a minor infraction, predicts future defiant behavior (Amemiya et al., 2019). The link between being punished at school for a minor misbehavior and future defiance is strongest among students with higher attachment levels to school. This indicates that students who feel closely connected to school have strong behavioral reactions when they feel they are not being treated with freedom or fairness at school (Amemiya et al., 2020).

Suspensions in U.S. schools are not doled out equally amongst students. Students with marginalized and/or minoritized identities, such as Black students, Native American students, Pacific Islander students, Latinx students, students with disabilities, students with complex trauma histories, students living in poverty, and students who are or previously were unhoused are more likely to be suspended from school, and are more likely to receive harsher punishments, compared to their more advantaged peers (Skiba et al., 2014; Losen & Whittaker, 2018; Pierce et al., 2022; Sullivan et al., 2013; Erb-Downward & Blakeslee, 2021; Bell et al., 2021). The mechanisms through which the disproportionate suspensions occur, and their implications for marginalized students, will be further discussed later in this chapter.

Across identity statuses, students are suspended at higher rates as they get older (Arcia, 2007). Suspension rates sharply increase as students go from elementary school to middle school, and students are generally disciplined at the highest rates in middle and high school (Mendez & Knoff, 2003; Theriot & Dupper, 2010). However, this does not mean that younger learners were not impacted by the rise of exclusionary discipline practices in the 1990s and early 2000s (Arcia, 2007; Jacobsen et al., 2019). Suspensions and expulsions occur as early as preschool and are common occurrences in many elementary schools (Arcia, 2007; Gilliam & Shahar, 2006). Using data from 1999-2000, researchers found that preschool and early childhood daycare expulsion rates were actually higher than K-12 expulsion rates in Massachusetts (Gilliam & Shahar, 2006). A 2019 study found that an estimated one in ten children born between 1998 and 2000 in large U.S. cities were suspended or expelled by the time they were nine years old, or in approximately the third grade (Jacobsen et al., 2019). However, students' experiences in school vary a great deal based on the context, strengths, and needs of the school they attend.

Exclusionary Discipline and Schools Facing Multidimensional, Systemic Challenges

There is significant heterogeneity in the landscape of schools in the United States. Even just among public schools within one state, there is variation in class sizes, student: teacher ratios, staff turnover rates, school resources, and student populations, largely driven by the growing gap between rich and poor communities in the United States (McGee, 2004; Cappella et al., 2008; Evans, 2004). This study focuses on schools serving high proportions of minoritized and low income students. Many schools serving these students lack funding and resources, have high staff turnover rates, and have poor average student performance on national and statewide accountability measures, such as standardized test scores (McGee, 2004; Evans, 2004).

A subset of these schools that are lowest performing in their respective state are considered failing, low-performing, consistently underperforming or turnaround. This designation occurs when a large portion of the student body failing to meet state proficiency standards on mathematics and reading assessments for several years in a row, (Herman et al., 2008). The exact criteria for this designation vary by state but can include a review of data on the school's demographics, dropout and attendance rates, and teacher qualifications (Salomon-Fernandez & McQuillan, 2008). These schools often face a multitude of difficulties, including low staff morale, lack of resources, and high teacher and principal turnover (Dee, 2012; Payne, 2008; Miller, 2013). Students are more likely to fail to meet state academic standards in math and reading, have lower attendance rates, and have higher rates of misconduct (Herman et al., 2008; Redding & Nguyen, 2020; Steinberg et al., 2019).

High poverty public schools are critical to study in relation to exclusionary discipline and the school-to-prison pipeline. Several studies have shown that these schools frequently use exclusionary discipline and have high rates of racial disproportionality in discipline practices

(Mcloughlin & Noltemeyer, 2010; Noltemeyer & Mcloughlin, 2010). Further, these schools often serve high proportions of students who hold marginalized and minoritized identities, making them disproportionately likely to be suspended and to experience the myriad of negative short- and long-term effects associated with suspensions.

Exclusionary Discipline and Vulnerable Students

It is well-established in the literature that suspensions and expulsions are disproportionately doled out to students from vulnerable backgrounds, specifically in terms of race, special education status, trauma history, homelessness status, socioeconomic status, and/or sexual/gender identity (APA, 2008, Mallett, 2017; Losen & Skiba, 2010; Snapp et al., 2015; Sullivan et al., 2013; Pierce et al., 2022; Erb-Downward & Blakeslee, 2021; Bell et al., 2021). Though estimates on the level of disproportionality vary and there are significant state and district-level differences in disproportionality, a number of large-scale studies show that Black students are significantly more likely to be suspended, compared to White students, across the United States (Losen & Whittaker, 2018; Gregory et al., 2010; Skiba et al., 2011). One 2018 study found that these racial disparities in exclusionary discipline occur at extreme levels, even in elementary school, with 40% of Black boys receiving a suspension or expulsion, compared to 8% of non-Hispanic White boys (Jacobsen et al., 2019). Nationally representative public-school data from the 2015-16 academic year collected by the U.S. Department of Education's Office for Civil Rights found that Black K-12 students lost out on nearly 5 times more instructional time than White students due to out-of-school suspensions (Losen & Whittaker, 2018). These disparities occur for students with other racial identities as well, with Native American and Latinx students receiving more suspensions than White students, though the data on disparities in suspension rates for Latinx students, compared to White students, is somewhat varied (Losen &

Whittaker, 2018; Skiba et al., 2011; Gregory et al., 2010). Some data show that Latinx students are suspended at only slightly higher rates than White students, while others show a larger disparity (Anyon et al., 2014; Losen & Whittaker, 2018; Gregory et al., 2010). English Language Learner (ELL) status may play a role in the disparate rates of suspensions for Latinx students, compared to White students (Dobbins & Draper Rodriguez, 2013). These racial disparities in suspension rates cannot be fully explained by differential rates of student misbehavior, as Black, Latinx, and multiracial students are often punished more harshly than White students for the same offense (Anyon et al., 2014). Researchers are increasingly illuminating that there are a number of non-racial identities that are also associated with a higher likelihood of being suspended.

Students with disabilities are more likely than their non-disabled peers to receive a suspension (Losen & Whittaker, 2018). Students with disabilities or difficulties related to mental health, particularly students who exhibit aggressive or disruptive behaviors, oppositional behaviors, and/or attentional difficulties, have higher incidences of school suspension in elementary school (Reinke et al., 2008). It is common for school personnel to respond to a student's externalizing behavioral difficulties by taking disciplinary action, such as through a suspension, without addressing the student's underlying mental health needs (Grothaus, 2012). Socio-economic status (SES) has also been investigated as a factor that is associated with a student's likelihood of receiving a suspension. Students from lower SES households (based on parent educational level and qualification for free or reduced-price lunch), are significantly more likely than their more economically advantaged peers to receive a school suspension (Sullivan et al., 2013). A recent investigation of discipline rates in Michigan public schools found that students currently experiencing homelessness as well as students who were housed but had

experienced homelessness in the past are significantly more likely to be suspended from school (Erb-Downward & Blakeslee, 2021). The findings held true for all students, across racial and ethnic backgrounds (Erb-Downward & Blakeslee, 2021). Additionally, students who experience higher numbers of adverse childhood experiences (ACES) are significantly more likely to be suspended from school in early elementary school (Bell et al., 2021). Among possible adverse childhood experiences, parental involvement with the justice system and childhood maltreatment were most strongly associated with suspensions (Bell et al., 2021).

Compounding these discipline disparities further, exclusionary discipline practices put the marginalized students and their families at greater risk for a number of negative short-term and long-term outcomes, compared to their more privileged peers (APA, 2008; Mowen, 2017). There is a growing body of evidence showing an association between the achievement gap (differences in academic achievement between students who hold more privileged identities and students who hold more marginalized identities) and the discipline gap (Gregory et al., 2010). It is especially critical to further investigate ways to curb the use of exclusionary discipline in under-resourced communities, as these disciplinary actions can cause significant disruptions in these children's academic, social-emotional, and family lives (Jacobsen et al., 2019; Brown, 2007). The school-to-prison pipeline is a construct that elucidates the ways in which students, and marginalized students in particular, face a much higher likelihood of negative outcomes following experiences of exclusionary discipline.

Outcomes for Marginalized Students and the School-to-Prison Pipeline

The school-to-prison pipeline refers to the school and juvenile justice policies and practices, particularly regarding school discipline, that decrease the likelihood of school success for children and increase the likelihood of negative life outcomes, particularly juvenile justice

involvement (Skiba et al., 2014). At the most basic level, the school to prison pipeline is the association between school exclusion (e.g., suspension and expulsion) and juvenile justice involvement (Skiba et al., 2014). This association is mediated by multiple domains of child and youth development. In other words, there are a number of short-term outcomes that are more likely when a student is suspended that are additive in increasing the likelihood of future justice-system involvement (Skiba et al., 2014). For example, when a student is suspended from school, they are missing out on instructional time and opportunities to engage with class material with their teacher and peers (Brown, 2007). This in turn can lead students to feel that adults in their school don't care about their well-being or success in school (Brown, 2007). When students feel disconnected from adults in their school, it can lead to increases in missed school work, and poorer attendance rates (Brown, 2007). Each of these factors can contribute to poorer academic outcomes among suspended students (Brown, 2007; Skiba et al., 2014). Strong evidence suggests that students who receive a suspension are more likely to have lower scores on achievement tests and poorer course completion rates (Hwang, 2018; Rosenbaum, 2020; Chu & Ready, 2018; Noltemeyer et al., 2015). It is unlikely that the association between exclusionary discipline and lower academic achievement can be fully explained by other student-level variables, as the results persist even when student-level differences are controlled for (Hwang, 2018). Poorer academic achievement is associated with increased likelihood for a number of negative longer-term outcomes (e.g., not graduating from high school, higher likelihood of grade retention), that in turn increase the risk of later justice-system involvement (Skiba et al., 2014).

Another pathway through which a student who receives a suspension can become more likely to be justice-system involved in the future operates through the relationship between exclusionary discipline and school belongingness/climate. When a student is suspended from

school, it can impact their feelings of belongingness within the school community and trust for authority figures within the school (e.g., teachers), particularly when they feel that the disciplinary action was unfair or unjustified (Anyon et al., 2016; Amemiya et al., 2020; Brown, 2007). Suspensions also impact caregivers' feelings of connection and satisfaction with their child's school. A sample of parents' whose preschoolers had been suspended or expelled expressed feeling their child's school lacked high-quality or responsive teachers, lacked communication between administration and families, and had inequitable school policies (Wahman et al., 2022). This feeling of distrust and disconnect with the school community can drive a number of other negative outcomes that are associated with receiving a suspension, such as weaker attendance rates and higher high school dropout rates (Chu & Ready, 2018; Noltemeyer et al., 2015). Students who are suspended from school generally feel less connected to the adults in their school, including adults who were not involved in giving the suspension (Anyon et al., 2016). This association is strongest for students of color (Anyon et al., 2016). Students who received exclusionary discipline for a minor infraction are actually more, rather than less, likely to act out behaviorally in school in the future (Amemiya et al., 2020). When students are more likely to act out behaviorally, they are at greater risk of receiving more exclusionary discipline, becoming less connected to their school community, and losing out on more instructional time.

Students who received a suspension over the course of their K-12 career are less likely to earn a bachelor's degree or high school diploma, and are more likely to be arrested or on probation, 12 years post-suspension (Rosenbaum, 2020). This increase in likelihood of justice system-involvement post-suspension has been replicated in several studies. Novak (2018) found in a systematic review of seven studies that exclusionary discipline increases the likelihood of

justice system contact with odds ratios ranging from 1.72-5.17. Black individuals' overrepresentation in the criminal justice system can be partially explained by the racial gap in school discipline, making the overuse of school discipline for minoritized students a critical point of intervention (Barnes & Motz, 2018).

The negative effects of exclusionary discipline are not fully contained within the school context, and can have an impact within the family system, particularly for marginalized and vulnerable students. A series of interviews with economically disadvantaged minoritized parents revealed a number of collateral impacts stemming from school discipline, due to the financial burdens of having to miss work, find childcare, and in some cases, hire expensive legal representation (Mowen, 2017). At times, school discipline results in parental job loss due to the strain caused by having to frequently miss work on short notice, which can lead to a myriad of other difficulties such as housing and food insecurity (Mowen, 2017). When students receive school discipline, it can also negatively impact the school-parent relationship. When their child is the recipient of harsh school discipline, minoritized parents report feeling that their child is unwelcome in the school community, overly targeted because of their style of dress, hair and music preferences, and not listened to during the disciplinary process (Bell, 2020; Mowen, 2017). Parent-child relationships can be impacted as well, with parents feeling less positive or hopeful about their child's future educational potential after they have received school discipline (Mowen, 2017). Parents of students who have been suspended also often express feeling overwhelmed by their child's behaviors and lacking social supports or access to early interventions for their child (Wahman et al., 2022).

Mechanisms that Drive High Rates of Exclusionary Discipline

The body of research on exclusionary discipline practices and disproportionate rates of exclusionary discipline for marginalized students is lacking an integrated, commonly used theoretical framework (Little & Welsh, 2019). While student misbehavior is overall associated with increased likelihood of receiving a suspension (Baker et al., 2008), there is a strong body of research that demonstrates that disproportionate rates of discipline for marginalized students are not due to higher rates of misbehavior, making school-level and classroom-level variables important points of intervention (Anyon et al., 2014; Huang & Cornell, 2017; Little & Welsh, 2019). The majority of the literature on mechanisms that drive high rates of suspension, particularly for vulnerable and marginalized students, fall into two general categories: 1) implicit and explicit racism/race-based biases and 2) structural disadvantages impacting students who are at the greatest risk of not being able to regulate their behaviors.

The impact of bias and racism on disproportionate suspension rates for students of color (in particular Black students and Native American students, and to a slightly lesser extent, Latinx students) as well as disparities in the harshness of discipline practices, has been well-documented in the literature (e.g., LaForett & De Marco, 2020; Quintana & Mahgoub, 2016; Anyon, 2014). This ties into larger issues around equity that have existed since the origin of the U.S. school system. The U.S. school system was developed based on White culture and it continues to play a key role in perpetuating and/or reducing racial and ethnic disparities at a systemic level (LaForett & DeMarco, 2020). One way that racial and ethnic disparities are perpetuated is through frequent cultural mismatch between students and teachers. In the United States, the teaching force is predominantly White and female, while the students in classrooms represent much greater diversity in terms of race, socioeconomic status, and gender (Skiba et al., 2011; Villegas et al., 2012). Explicit and implicit racial biases held by teacher and school staff can also lead to

differential perceptions of behaviors, leading to increased rates of exclusionary discipline (Anyon et al., 2018; Little & Welsh, 2019). Explicit and implicit bias racial bias refers to prejudice that occurs on either a conscious or unconscious level based on beliefs or stereotypes about one's perceived racial/ethnic categories and the degree to which their skin tone and features match those of the "dominant" or "majority" group (Hannon et al., 2013). Several studies have focused on reducing discipline rates by focusing solely on the relationship between discipline practices and schooling interactions as they relate to race and/or gender (Little & Welsh, 2019). While these studies explore a critical issue, they are limited in their application to real world settings. Interventions must go beyond focusing on one discrete mechanism that contributes to disproportionate rates of discipline by taking a holistic, integrated approach informed by developmental psychology that addresses the complexity of individuals and how they impact/are impacted by each environment they interact with (Bronfenbrenner, 1977; Sameroff, 2009).

Structural disadvantages and inequality play a large part in driving disproportionate rates of discipline for vulnerable students. For example, students with fewer socioeconomic resources and students living in poverty may have less access to knowledgeable about 'middle class hidden rules' related to academic and behavioral expectations in the school setting (Little & Welsh, 2019; Gregory & Skiba, 2019). When students do not get advantages that help them prepare for school, such as preschool or reading support, they are less likely to meet academic or behavioral expectations. As a result, they may act out in school or engage in problematic behaviors. School staff are often not cognizant of students' contexts and backgrounds, making them likely to respond to rule-breaking with exclusionary discipline, even when the rule-breaking is unintentional (Erb-Downward & Blakeslee, 2021). Further, many disruptive behaviors that

young children display can be indicative of a developmental disability (e.g., autism, ADHD, learning disorder) (Lecavalier, 2006). When these children's families and school teams do not have the capacity or resources to get to the root of these issues and intervene early, struggling children are often labeled as "bad" or "troublemakers". Outside of developmental disabilities, students who have experienced significant disruptions during their formative years (e.g., experiencing homelessness, experiencing trauma) can become triggered during the school day and their fight-or-flight response to a perceived threat is commonly misunderstood as a behavioral or disciplinary issue (Erb-Downward & Blakeslee, 2021; Bell et al., 2021). This process of overly disciplining disadvantaged students represents a lack of understanding of students' contexts and mirrors processes in the criminal justice system, where crime control (i.e., behavioral control) is prioritized over restitution and growth-fostering opportunities (Little & Welsh, 2019).

The City Connects model's impact primarily overlaps with the mechanisms related to structural disadvantages. Overlapping approaches that could reduce the impact of these mechanisms that drive higher rates of suspension for vulnerable students and areas that the City Connects model addresses include: a) increasing teachers' understandings of their students' backgrounds, cultures, realities, and 'whole' selves to better understand their behaviors, b) fostering strong, healthy relationships within schools between school staff, students and families, c) creating open lines of communication with families and caregivers so that concerns regarding students can be more easily discussed and addressed, d) leveraging school-community relationships, e) utilizing tailored interventions to respond to student misbehavior, and f) providing educators with more options for misbehavior, beyond discipline, through processes such as the Whole Class Review (Anyon et al., 2018; Little & Welsh, 2019; City Connects,

2022; Sibley et al., 2017; Walsh et al., 2014). One recent study of educators from low-suspending schools in an urban school district found that staff from these schools reported that having a deep understanding of their students' strengths, needs and context helped them to understand their students' behaviors (Anyon et al., 2018). Teachers' deep understandings of their students minimized teachers' utilization of exclusionary discipline and facilitated relationship rebuilding when punishment had to occur (Anyon et al., 2018). City Connects' overlap with many of the mechanisms that can prevent suspensions is largely due to the model's grounding in theories of developmental psychology.

Theoretical Principles of Intervention: Developmental Contextualism

In order to prevent or protect against the negative impacts of exclusionary discipline, school-based interventions need to be rooted in child developmental theory (Walsh et al., 2002). A theoretical framework that takes into account the multidirectional, contextual, and modifiable nature of development (e.g., developmental contextualism) is critical (Walsh et al., 2002). Three complementary theories of child development are particularly relevant to preventative and promotive school-based interventions that focus on the 'whole child': the transactional model of development, developmental cascades, and the model of risk and resiliency. These developmental theories situate the child within their context and provide an evidence-based framework that allows a better understanding of how to promote positive developmental outcomes and prevent negative developmental outcomes for all students.

The transactional model of development involves the idea that a child's behavior at any point in time can be explained by the complex transactions between the person (phenotype), their environment (envirotype), and their biology (phenotype) (Bronfenbrenner, 1977; Sameroff, 2009). Children's development is also impacted by the multiple systems and contexts within

which they live and spend time, including their home, school, and neighborhood communities (Bronfenbrenner, 1977). These biological, psychological and social domains continuously impact each other throughout the course of development, and altering any one of them impacts the others (Bronfenbrenner, 1977; Sameroff, 2009).

Over time, as various transactions across domains, contexts, and systems occur, the resulting consequences are termed 'developmental cascades' (Masten & Cicchetti, 2010). These developmental cascades can operate in ways that serve or hinder the individual (Masten & Cicchetti, 2010). Because of the complexity of developmental cascades and all of the factors and contexts that impact them across the lifespan, individuals may need very different levels of support or intervention at different times, even if they have certain contexts in common (e.g., siblings in the same home, students in the same classroom) (Moore & Emig, 2014). Thus, well-timed, targeted interventions in one or more domains of development can have a 'cascading' impact on to other domains of development. Factors that promote positive development or resiliency, even in the face of risks across the lifespan, are critical.

The theoretical concept of resiliency is defined as "the capacity of a dynamic system to withstand or recover from significant threats to its stability, viability or development" (Masten & Tellegen, 2012). Promotive and protective factors are the potential resources that can lessen or counteract the effects of adversity on child functioning and development (Masten & Tellegen, 2012). However, resilience is not built by merely counteracting risks, it is developed through access to environments ripe with opportunities to build competence (Masten & Obradovic, 2006; Masten, 2001). Promotive experiences in childhood have cumulative effects and have been shown to be strongly associated with later positive outcomes across domains, even when the individual has also experienced adversity in childhood (Morris & Hays-Grudo, 2023). Each child

possesses their own unique strengths and needs, based on the complex interplay between their internal and external contexts, making it important for children to get tailored, individualized, targeted services to promote resiliency and reduce the impacts of adverse experiences (Masten & Tellegen, 2012; Walsh et al., 2016).

Within resiliency theory, these targeted protective and promotive factors operate by disrupting the typical developmental patterns in which risks within social, contextual or individual domains lead to problem behaviors, or negative health outcomes (Zimmerman, 2013). External promotive factors that occur outside of the individual, such as support from mentors and parents or accessing to high quality extra-curricular activities, are referred to as resources (Zimmerman, 2013). Though generally not explicitly stated, many of the best practice suggestions posited by researchers studying preventing exclusionary discipline align with these theoretical underpinnings of risk and resiliency, by calling for interventions that a) target multiple developmental contexts (e.g., classroom, school, home, neighborhood), b) involve tailored developmentally appropriate behavioral supports, c) focus on students' strengths, and d) impact students' relationships with adults in their lives (Welsh & Little, 2018; Amemiya et al., 2020; Gregory et al., 2017; Gregory et al., 2014 Anyon et al., 2018). Integrated student support models embrace a whole child perspective and are grounded in research on child and youth development (Moore & Emig, 2014; Walsh et al., 2016).

Integrated Student Supports Interventions

In the past several decades, there has been a growing recognition of the critical roles that schools should play in addressing out-of-school factors that interfere with student learning and success (Adelman & Taylor, 2011). This is particularly true in large, urban public schools in the U.S. Within these contexts, many students have significant behavioral, health, and learning needs

that pose major barriers to accessing their education. Therefore, without access to intervention or support, students often struggle to reap the full benefits that these schools aim to provide, such as receiving a high-quality education, gaining necessary academic skills, developing social-emotional competencies, and successfully transitioning to postsecondary life (Adelman & Taylor, 2011; Adelman & Taylor, 2006).

School-based models of integrated student support (ISS) represent a promising area of intervention, as they take a systematic, multi-dimensional approach to addressing students' needs and areas for growth (Moore & Emig, 2014). Core components of ISS models include: a needs assessment, community partnerships, coordinated student support, integration within the school, and data tracking (Moore et al., 2017). These models of support involve several tiers or subsystems of support to ensure that all students' needs are being met and no student is 'slipping through the cracks'. Subsystems within the model include: a) primary prevention and universal intervention that cover low-end needs, b) selective and indicated intervention that cover moderate needs, and c) indicated interventions for students with severe or chronic difficulties on the high-need end (Adelman & Taylor, 2011). These systems of support are best implemented when there are high-quality, consistent school-home-community collaboration practices in place (Adelman &Taylor, 2011). Effective models of integrated student support are grounded in child development theory and are regularly evaluated to ensure that there is measurable evidence of their contribution to student success (Moore & Emig, 2014; Walsh et al., 2016).

ISS models can be well-integrated with other school frameworks, such as Positive Behavioral Interventions and Supports (PBIS), to address students' behavioral and out-of-school needs (Moore et al., 2017). PBIS is similar to ISS in that they are both school-based models that emphasize the use of a tiered model that is used to target students with specific services and

supports based on the intensity and types of needs that they have (Moore et al., 2017). However, PBIS focuses on students' behaviors specifically, while ISS models focus on supporting students more broadly, across multiple connected developmental domains (e.g., health, social, cognitive, behavioral) and take into account a number of influential contextual factors (e.g., student, family, school, community) (Sacks et al., 2022; Moore et al., 2017).

A 2022 analysis revealed that ISS models can have a positive long-term impact. Using the Social Genome Model, a microsimulation model that allows researchers to examine how early-in-life changes can contribute to long-term positive outcomes, the analysis showed that students who attend an elementary school with ISS are predicted to have higher lifetime earnings across demographic groups (Sacks et al., 2022). Researchers found that these findings held true for students from low-income families. When these students had longer exposure to ISS models they were more likely to have higher lifetime earnings, earn a bachelor's degree, and have better mental health outcomes in adulthood (Sacks et al., 2022).

Not all ISS models operate in the same way in schools and not all ISS models have the same evidence of positive student outcomes. A 2017 report examined 21 studies on eight different integrated student support programs to evaluate their efficacy (Moore et al., 2017). The report identified four ISS models as having particularly robust outcomes in terms of students' standardized test scores, grade-point averages, attendance rates, and/or graduation rates as well as rigorous analyses, such as randomized control trials and/or quasi-experimental designs. These models included: Communities in Schools (CiS), Diplomas Now, Harlem Children's Zone – Promise Academy, and City Connects, the ISS model that this dissertation examines (Moore et al., 2017). This dissertation focuses on one of these evidence-backed models: City Connects.

The City Connects Intervention

City Connects is a school-based integrated student support intervention that is grounded in child developmental theory. In City Connects schools, every year each student's strengths and needs across developmental domains (e.g., health, family, social-emotional, academic) are discussed and assessed by their classroom teachers(s) and the City Connects Coordinator, a master's-level school counselor or social worker (City Connects, 2020). Based on this holistic review of each child, students are assigned a tier of risk (1, 2a, 2b, 3) and are provided a tailored set of individualized prevention, intervention and enrichment services that can impact their development in multiple domains/contexts (Walsh et al., 2014). As City Connects enters schools and districts, one of the primary responsibilities of the City Connects coordinator is to identify school- and community-based services and resources. The coordinator builds strong relationships with partners providing these supports and leverages these relationships to address students' needs and foster their strengths.

The City Connects intervention began in 2001 in high poverty, under resourced schools in Boston, Massachusetts. City Connects began with the mission to address the complex out-of-school difficulties facing students living in poverty so that they could achieve and thrive in school. Since then, City Connects has steadily expanded into over 150 public, charter, and private schools in Massachusetts, Connecticut, Ohio, Minnesota, Tennessee, New York, and Indiana, as well as the Northeast Inner-City region of Dublin, Ireland (City Connects, 2020; City Connects 2022). Across all sites, the City Connects intervention has several core practices that become embedded within the school community: Whole Class Reviews, tiering, and Individual Student Reviews.

Whole Class Review

At the start of each school year, the master's-level coordinator who is implementing the City Connects model meets with each classroom teacher for a 'Whole Class Review'. Together, they discuss each student in the teacher's classroom, focusing on each child's unique strengths, needs, and interests. The coordinator uses a set of guiding questions to probe about different contexts and aspects of the child's development, including their family/home life, social-emotional development, academic development, and physical health (City Connects, 2022). The coordinator works with the teacher to make plans for each student and to ensure that they are connected with appropriate, tailored services and supports. The teacher and coordinator also discuss how best to support the student in the classroom and how to support/connect with the student's family, as needed (Heberle et al., 2020).

Tiering

One of the key components of City Connects is the process of assigning students to a tier of risk. As the teacher and coordinator discuss each students' strengths and needs across developmental domains during the Whole Class Review, they collaboratively use that information to assign each student to a tier of risk. The primary purpose of these tiers is to help students get the right combination of services and supports. To promote equity, all students in a City Connects school across all tiers of risk receive services and supports based on their unique profile. There are four tiers within the City Connects model: Tier 1 (strengths and minimal risks), Tier 2a (strengths and mild risks), Tier 2b (strengths and moderate risks), and Tier 3 (strengths and severe/intensive risks) (City Connects, 2022). The tier of risk is relative to the school/classroom population, rather than to a more broadly standardized metric (Petsagourakis, 2021). During the 2021-22 school year, across all City Connects schools, approximately 36% of students were placed in Tier 1, 31% were in Tier 2a, 21% were in Tier 2b, and 12% were in Tier

3 (City Connects, 2022). Students are re-tiered at the start of every school year during the Whole Class Review and their previous tier-level has no bearing on their next tier placement. Re-tiering students regularly helps to account for the high level of lability in children and adolescents' developmental strengths, needs, and overall trajectories.

Individual Student Review

Students with the highest level of needs and the most complex needs (i.e., Tier 3) are considered for an Individual Student Review. The Individual Student Review is a process in which a team of professionals meets to have an in-depth discussion about the strengths and needs of one student who is experiencing significant risks and could use additional support. The team comes up with a plan that includes specific, measurable goals and strategies for the student that are followed up on regularly after the meeting. Team members can include individuals such as school psychologists, teachers, principals, nurses, and, as appropriate, community agency staff members. The City Connects coordinator is typically responsible for running the meeting and communicating with the student's family before and after the meeting. Typically, 8-10% of students receive an Individual Student Review each year (City Connects, 2022).

City Connects Evidence of Efficacy

The City Connects intervention has been rigorously evaluated using qualitative and quantitative methodologies. Results from the evaluations consistently show a number of positive outcomes for students in both the short- and long-term, as well as consistent satisfaction with the intervention among teachers, administrators, City Connects Coordinators, and community partners (City Connects, 2020; City Connects, 2018). In terms of student outcomes, receiving the City Connects intervention has been associated with increased academic success on high-stakes tests and report card grades (Walsh et al., 2014). The intervention has also been shown to have a

statistically significant impact on dropout rates for students who received the intervention in elementary school, with 9.2% of students who received City Connects dropping out of high school, compared to 16.6% of students who attended similar, non-City Connects schools (Lee-St. John et al., 2018). City Connects has also shown efficacy in significantly reducing achievement gaps in math and reading between first generation immigrant children who are English Language Learners (ELLs) and immigrant children who are proficient in English in high poverty schools (Dearing et al., 2016).

A recent qualitative analysis of City Connects coordinators found high levels of satisfaction with the practice and confidence in the effectiveness of the practice model (Heberle et al., 2020). Across all school districts implementing the model, 92% of principals reported feeling satisfied with City Connects and 93% reported feeling satisfied with the supports and services that City Connects provides families and students (City Connects, 2020). Teachers reported similar levels of satisfaction. On an annual satisfaction survey 90% of teachers reported feeling satisfied with City Connects overall and 86% reported feeling satisfied with the supports City Connects provided to teachers and students (City Connects, 2020). In terms of the mechanisms of the practice, such as the annual review of students' strengths and needs through the Whole Class Review, teachers consistently report feeling that this process enhances their awareness of students as individuals and class dynamics and that it provides important information about students' lives outside of school (Sibley et al., 2017). The majority of teachers in City Connects schools report feeling the benefit of understanding their students holistically in terms of their relationships with students (e.g., more patient, more empathetic), addressing student behaviors (e.g., stopping and thinking about factors influencing behaviors before reacting), classroom management (e.g., providing more breaks for certain students), and

instruction (e.g., providing differentiated instruction) (Sibley et al., 2017; City Connects, 2022). These findings represent a shift in teachers' mindsets about their students. When teachers recognize the contextual and developmental factors impacting the students in their classrooms, they are often able to see a child who is acting out because they are tired, hungry, sick, or have less developed social skills compared to their peers, rather than a child who is acting out because they are "bad" or being purposefully defiant. This process is complemented by the partnerships that coordinators leverage with providers in the community so that teachers are able to not only identify the root cause of misbehavior, but also work with coordinators to ensure that the causes of misbehavior are addressed.

Take the example of a first grade student coming into a City Connects school who is not able to sit still in the classroom, is disrupting the teacher's lessons by shouting out responses to questions, and cannot work independently on a tasks. The teacher would have the opportunity to discuss these behavioral difficulties with the coordinator in the Whole Class Review and the coordinator could observe the student in the classroom. While it would not be the coordinator's role to diagnose this student with a psychiatric disorder, their master's-level training in counseling or a related field would inform them that this student may have a developmental or learning disability. Because of their relationship with community agencies, they would be able to refer this student to a therapist to get a mental health evaluation. The coordinator could simultaneously support the teacher by providing them with strategies for working with students with attentional difficulties. This illustrates how the City Connects processes and practices give teachers options other than suspension to handle student misbehavior.

Limitations and Gaps in the Literature

There is not an evidenced-backed intervention or model that simultaneously 1) has been embraced by teachers and administrators, 2) has shown consistent, robust results in reducing suspensions and improving outcomes of suspended students, and 3) is scaled up to serve a wide variety of schools and students. While there is a growing body of literature on interventions and practices aiming to decrease the use of exclusionary discipline in schools, many of these practices do not have the full support of teachers or administrators (Menzies et al., 2021; Griffith & Tyner, 2019). Approaches targeting suspensions, student behaviors, and academic performance often have mixed or negative evidence of efficacy (Bradshaw et al., 2010; Ryoo et al., 2018). A relatively unexplored avenue is the potential impact of integrated student support practices that are grounded in developmental theory on exclusionary discipline and the school-to-prison pipeline. The approaches, and City Connects in particular, are associated with a number of positive academic and non-academic outcomes for students attending high poverty schools (Moore & Emig, 2014; Walsh et al., 2014; Dearing et al., 2016) and benefits to school staff (Sibley et al., 2017). Due to the overlap between best practice suggestions posited by researchers studying exclusionary discipline prevention and theoretical underpinnings of risk and resiliency, (e.g., targeting multiple developmental contexts, involving tailored developmentally appropriate behavioral supports, focusing on students' strengths, and impacting students' relationships with adults in their lives), this is an important gap in the current body of literature that needs to be further explored (Welsh & Little, 2018; Amemiya et al., 2020; Gregory et al., 2014; Gregory et al., 2017; Anyon et al., 2018).

Urban elementary schools that serve primarily students living in poverty and Latinx and Black students are key contexts to study. Many students in these schools face a number of factors that increase their risk of experiencing exclusionary discipline such as implicit and explicit

bias/racism, lower expectations, trauma responses that are interpreted as disciplinary issues, fewer out-of-school resources to support school readiness, and cultural mismatch between themselves and their teachers (Skiba et al., 2011; Little & Welsh, 2019; Gregory & Skiba, 2019; Anyon et al., 2018; Erb-Downward & Blakeslee, 2021; Mittleman, 2018; Bell et al., 2021). These schools are also more likely to utilize high levels of exclusionary discipline (Mcloughlin & Noltemeyer, 2010; Curran, 2019; Erb-Downward & Blakeslee, 2021; Noltemeyer & Mcloughlin, 2010).

The majority of the literature in the area of exclusionary discipline focuses on preventing suspensions from occurring in the first place (Anyon et al., 2018; Welsh & Little, 2018). While this is a critical area to investigate due to the harmful impacts of high rates of exclusionary discipline on individual students and school climate, it fails to consider the needs of suspended students who are at higher risk for a myriad of negative outcomes (APA, 2008; Chu & Ready, 2018). Despite best efforts of practitioners and policy-makers, it is unlikely that exclusionary discipline will be completely eradicated from schools, making it critical to examine potential protective or promotive factors for students who have been suspended. Great strides have been made in investigating the school-to-prison pipeline and the mechanisms through which receiving a suspension puts students, particularly students with marginalized identities, at higher risk of justice system involvement later in life (Skiba et al., 2014). However, the application of developmental psychology theories such as risk and resiliency and promotive/protective factors have not been deeply applied to disrupt this cycle. It is critical to expand the body of literature on exclusionary discipline to take into consideration promotive, protective, and early intervention factors that can alter the pernicious impacts that exclusionary discipline has on students in under-resourced communities.

Literature Summary

Experts and policymakers are largely in agreement about the negative short- and long-term impacts of exclusionary discipline, including in-school suspension, on students (APA, 2008; Amemiya et al., 2020; Arcia, 2007; Cholewa et al., 2018; Chu & Ready, 2018). These negative outcomes are particularly pernicious for marginalized students (i.e., school-to-prison pipeline) (Skiba et al., 2014; Barnes & Motz, 2018). However, there is not a general consensus on how to effectively address student misbehavior in schools while reducing the use of exclusionary discipline (Griffith & Tyner, 2019; Welsh & Little, 2018), largely due to a practice-to-research gap (Zakszeski & Rutherford, 2020). The vast majority of the interventions studied focus on reducing exclusionary discipline rates in schools (Zakszeski & Rutherford, 2020; Lee & Gage, 2020). This leaves a significant gap in the literature regarding how to best support and improve outcomes for students who have been suspended.

Integrated student supports, and the City Connects model specifically, represent promising evidence-backed, theory-driven models of school-based support for students. The City Connects model has been shown to support teachers' holistic understandings of their students (City Connects, 2018; City Connects, 2020). City Connects teachers utilize this 'whole child' knowledge to drive their reactions to student behaviors, interactions with students, and classroom instructional practices (Sibley et al., 2017). Further, by matching students with tailored services and supports, City Connects has positively impacted outcomes (e.g., dropout rates, academic achievement) for marginalized students attending high poverty schools in both the short-term and long-term (Walsh et al., 2014; Lee-St. John et al., 2018; Dearing et al., 2016). This dissertation includes three interrelated studies that investigate the potential role of City Connects in decreasing suspensions and supporting students who have been suspended.

Current Study

K-12 students in the United States continue to be removed from the classroom due to misbehavior at extremely high rates (Losen & Whittaker, 2008). This contributes to these students having lower academic performance, higher dropout rates, and higher rates of school disengagement, among a number of other negative short-term and long-term outcomes (Losen & Whittaker, 2018; APA, 2008). Potential strategies have been and are being utilized to address these issues, and one promising, less-explored area of indirect intervention is integrated student support (Moore & Emig, 2014).

This dissertation examines the impact of City Connects, one evidence-backed, theory-driven model of integrated student support, on exclusionary discipline. The study will investigate 1) whether City Connects impacts rates of exclusionary discipline in high poverty schools, 2) how the model serves and supports suspended students compared to non-suspended students, and 3) whether the intervention can contribute to more positive outcomes for students who have been suspended. This approach will help develop a better understanding of the mechanisms through which an integrated student support model might contribute to differential (i.e., better) outcomes for suspended students, compared to students who never attended a school with integrated student supports. This study has the potential to add to both the body of literature on how to utilize school-wide, developmental theory-driven, evidence-based practices to reduce the rate of exclusionary discipline in schools and promote more positive outcomes for suspended students in high poverty schools.

Rationale and Importance of Study

Despite having a strong base of evidence in its outcomes for students and theoretical underpinnings in child development, there has never been a published study on how City

Connects might impact rates of exclusionary discipline in high-poverty elementary schools. Studies so far have focused primarily on discrete, smaller scale interventions that don't directly take the whole child and child development into account (Welsh & Little, 2018). Further, this study will add to the body of literature by being the first to examine how an integrated student support model supports suspended students, compared to the rest of the student body. Lastly, this study will make important contributions to the literature by examining how receiving tailored prevention and intervention services and supports through an integrated student support model can impact elementary school students' academic achievement, attendance, and suspension rates, compared to students who were also suspended in elementary school but did not receive these services and supports.

The results of this study will add to the growing body of literature on what interventions effectively aid in the prevention of exclusionary discipline policies being used in schools, as well as how schools can respond to students who have been suspended to help them reintegrate back into their school community and thrive in their school environment. The results of this study could have an important impact for policymakers, as it is hypothesized that it will yield information about how schools can balance teachers', principals', and students' needs. City Connects poses a potential cost-effective, long-term solution for a complex issue: managing student misbehavior in a way that is student-centered and supportive to school staff.

Research Questions and Hypotheses

This dissertation is made up of three interrelated studies to investigate the impact of integrated student support on exclusionary discipline. The three studies and their associated research question(s) and hypotheses are outlined below.

Research Aim 1

The first aim of the study is to investigate whether City Connects aids in decreasing the use of exclusionary discipline in K-5 and K-8 schools. In other words, are suspension rates lower in schools implementing City Connects, compared to similar schools that do not have City Connects? This study will track suspension counts and rates over time for students in K-5 and K-8 schools, starting four years prior to City Connects implementation, and follow them through the following six years. These suspension rates will be compared to suspension rates for students in similar K-5 and K-8, non-City Connects schools over the same period of time.

Research Question 1: *Are suspension rate trends lower in City Connects K-5 and K-8 schools, compared to non-City Connects K-5 and K-8 schools over five years of City Connects implementation?*

Alternative Hypothesis 1: Given the high levels of overlap between the extant literature on recommendations and best practices for reducing suspension rates and mechanisms of the City Connects model, it is hypothesized that trends over time will indicate that suspension rates are lower in City Connects schools, compared to non-City Connects schools. Specifically, the extant literature indicates that both best practices for reducing discipline rates in schools and City Connects practices both involve: 1) fostering supportive relationships between students and school staff; 2) implementing developmentally appropriate behavioral supports; 3) identifying students' strengths and avoiding defining students by their deficits; 4) developing inclusive, positive classroom and school environments; 5) promoting/recognizing student and family voice in decision-making (Gregory et al., 2017; Amemiya et al., 2020; Walsh et al., 2014; City Connects, 2020; Sibley et al., 2017). Due to processes like the Whole Class Review and Individual Student Reviews, teachers and school staff in City Connects schools have deeper understandings of student misbehavior and more options for responding to those misbehaviors

outside of exclusionary discipline (e.g., additional services or supports) (City Connects, 2022). It is hypothesized that as the City Connects model becomes engrained in the school community, rates of exclusionary discipline in elementary schools will decrease at a greater rate, compared to non-City Connects elementary schools in the same district.

Null Hypothesis 1: City Connects elementary schools have equal or greater discipline rate trends than similar non-City Connects in the same district.

Research Aim 2

The second aim of the study is to explore how an integrated student support model supports suspended elementary and middle school students, compared to the rest of the non-suspended student body. Specifically, this aim investigates whether within City Connects schools, suspended students are more likely to be identified as requiring more intensive supports, compared to non-suspended students. In order to do this, this part of the study will examine rates of Individual Student Reviews, the in-depth reviews students in City Connects schools are referred to when they are identified as having the most complex needs (City Connects, 2018). This component of the study will also examine tiering trends of suspended students (i.e., Tier 1, Tier 2a, Tier 2b, Tier 3), compared to the rest of the student population in City Connects schools. The second aim of this study is exploratory in nature. Patterns in City Connects' supports and practices for suspended students specifically has not previously been investigated.

Research Question 2: *Are students attending a City Connects elementary or middle school who were suspended at least once, more likely to be referred for an Individual Student Review at least once, compared to their peers in City Connects schools who were not suspended?*

Alternative Hypothesis 2: City Connects elementary and middle school students who were suspended are more likely to receive an Individual Student Review, compared to their peers in a

City Connects elementary or middle school who were not suspended. Students typically receive a suspension due to significant and/or frequent misbehaviors in the classroom. It is hypothesized that the annual holistic review of students and teachers'/coordinators' knowledge of the out-of-school factors that impact students' behavior and performance in school will increase the likelihood that suspended students will be flagged for an Individual Student Review, compared to their non-suspended peers (Sibley et al., 2017; City Connects, 2022).

Null Hypothesis 2: There is no difference between rates of Individual Student Reviews for suspended and non-suspended students in City Connects schools or suspended students in City Connects schools receive Individual Student Reviews at a lower rate than their non-suspended peers.

Research Question 2a: *Are students attending a City Connects elementary or middle school who were suspended at least once more likely to be placed in a higher tier of risk compared to their peers in City Connects schools who were not suspended?*

Alternative Hypothesis 2a: City Connects elementary school and middle school students who were suspended are more likely to be placed into a higher tier of risk (i.e., Tier 2b, Tier 3), compared to their peers in a City Connects elementary or middle school who were not suspended. Students who are suspended are disproportionately likely to have higher levels of academic and social-emotional/behavioral needs. Due to the tiering process occurring as part of the annual holistic review of students, teachers and coordinators are more likely to identify these students as having higher levels of risk across developmental domains that would warrant them being placed into a higher tier (City Connects, 2022; Petsagourakis, 2021).

Null Hypothesis 2b: There is no difference in tiering placements for students who were suspended, compared to students who were not suspended or students who were suspended are placed into lower tiers of risk compared to students who were not suspended.

Research Aim 3

The third aim of the study is to explore whether students who were suspended at least once in elementary school and received City Connects in elementary school have better outcomes in fifth grade, compared to their peers who were also suspended at least once in elementary school and never received City Connects. The fifth grade outcomes of interest for this research aim include: attendance, academics, and number of suspensions. This study examines whether the preventative, tailored supports and services that a student receives in a City Connects elementary school ameliorate some of the negative outcomes commonly associated with receiving a suspension in the short-term.

Research Question 3: *Do students who received City Connects in elementary school and were suspended at least once in elementary school perform better on statewide standardized tests in fifth grade, compared to students who did not receive City Connects in elementary school and were suspended at least once in elementary school?*

Alternative Hypothesis 3: Students who attended a City Connects school in elementary school and who were suspended at least once in elementary school have better test scores in fifth grade, compared to their peers who were suspended in elementary school and never received City Connects. City Connects is expected to impact academic achievement because the model has been shown to improve academic performance for students overall and to reduce achievement gaps for marginalized students (Dearing et al., 2016; Walsh et al., 2014). Many suspended students have complex needs (Brown, 2007; Erb-Downward & Blakeslee, 2021). It is expected

that students who have attended a City Connects school are more likely to have their strengths and needs understood and addressed by their school team through tailored supports and services, which in turn can lead to better school-based outcomes in the long-term (City Connects, 2022).

Null Hypothesis 3: Receiving City Connects in elementary school does not impact fifth grade academic performance for students who were suspended in elementary school.

Research Question 3a: *Do students who received City Connects in elementary school and were suspended at least once in elementary school have better attendance in fifth grade, compared to students who did not receive City Connects in elementary school and were suspended at least once in elementary school?*

Hypothesis 3a: Students who attended a City Connects school in elementary school and who were suspended at least once in elementary school have better attendance in fifth grade, compared to their peers who were suspended in elementary school and never received City Connects. City Connects is expected to impact attendance rates because the relationships that teachers and City Connects Coordinators foster with both students and parents are expected to prevent or lessen the feelings of distrust and disconnect with the school community that are typically associated with suspensions (Sibley et al., 2017; City Connects, 2022; Heberle et al., 2020). This would increase students' likelihood of continuing to attend school regularly, even when a suspension occurs. Further, City Connects matches students with tailored supports and resources based on their needs and interests, which could contribute to students having other trusted adults or peers in the school community who would support the maintenance of students' connection to school and reinforce the importance of attending school regularly (City Connects, 2022).

Null Hypothesis 3a: Receiving City Connects in elementary school does not impact fifth grade academic performance for students who were suspended in elementary school.

Research Question 3b: *Do students who received City Connects in elementary school and were suspended at least once in elementary school have fewer suspensions in fifth grade, compared to students who did not receive City Connects in elementary school and were suspended at least once in elementary school?*

Hypothesis 3b: Students who attended a City Connects school in elementary school and who were suspended at least once in elementary school are suspended less frequently in fifth grade, compared to their peers who were suspended in elementary school and never received City Connects. City Connects is expected to impact fifth grade suspension rates because the root of the misbehaviors that cause the suspensions are better examined and understood by school staff due to the City Connects practices (i.e., Whole Class Review, Individual Student Review). School staff and tailored supports can help address the root causes of the behavior when a student attends a City Connects school, compared to when a student is suspended and does not attend a City Connects school (City Connects, 2022). Further, mechanisms that drive future misbehavior after a suspension include a change in students' feelings of attachment towards their school and a feeling of perceived unfairness (Amemiya et al., 2020). When students feel high levels of trust towards their school and their teacher, they are more likely to have better behavior following discipline (Amemiya et al., 2020). The strength of the relationships that staff in City Connects schools build with students could lessen the association between being suspended and engaging in misbehavior in the future (Sibley et al., 2017; Heberle et al., 2020; City Connects, 2022).

Null Hypothesis 3b: Receiving City Connects in elementary school does not impact fifth grade suspension rates for students who were suspended in elementary school.

Chapter 3: Research Design and Methods

This chapter will provide a description of the study's sample, measures, inclusion criteria, and procedures. Procedures are presented by research aim, in three sub-sections. The dissertation examines three possible ways that the City Connects intervention might impact the likelihood that vulnerable students will be suspended and/or experience negative outcomes following a suspension. The overarching research aims include: a) whether City Connects schools have lower rates of exclusionary discipline compared to similar non-City Connects schools; b) if City Connects schools refer suspended students to more intensive supports or higher tiers of risk compared to non-suspended students; and c) if receiving City Connects in elementary school leads to better outcomes (in terms of academic performance, suspensions, and attendance) in fifth grade for students who were suspended at least once in elementary school.

Sample

School-level data and student-level data come from an urban public school district in the northeastern United States. The district was chosen in part due to the fact that it serves a high proportion of low income, minoritized students who are disproportionately likely to be impacted by the school-to-prison pipeline. This district was also selected due to its long-term implementation of City Connects – over 10 years at the time of analysis. This long-term implementation allows for an investigation of discipline rate trends over time and tracking student outcomes over time. It also provides more assurance of fidelity, due to its regular participation in evaluation assessments (City Connects, 2018; City Connects, 2020).

The study's data are collected annually by the schools in this district. The student-level information for each year includes each child's: school, grade level, demographic information,

achievement on statewide standardized tests, attendance rates, and suspension rates. Schools provided City Connects with this information and a subset was used for this dissertation.

This dissertation also uses a subset of data collected by City Connects staff in schools implementing City Connects. These data are stored in a web-based proprietary database called MyConnects (previously called SSIS prior to 2019). City Connects Coordinators utilize this secure system to record student and school-level data (e.g., services students receive, students' tiers of risk, Individual Student Review information, and Whole Class Review information) and share it with City Connects administration and researchers. The dataset was constructed for and provided to the author by City Connects staff. All student-level data from the district and from City Connects was de-identified using unique student ID numbers.

Measures

Publicly Available School-Level Data (Research Aim 1)

Publicly available data at the school-level was utilized to investigate the first research aim. School-level data for K-8 students from the years 2007-08 through 2015-16 was compiled and cleaned for use in this study. These data include demographic information (e.g., student race/ethnicity, free/reduced lunch eligibility, English language learner status), performance on standardized tests, and discipline data. For the purpose of the analyses for all three research aims, in-school and out-of-school suspension data was combined to create one 'suspension count' variable, due to strong evidence that both in-school and out-of-school suspensions lead to similar negative outcomes for students due to students being excluded from the classroom in each of these practices (Cholewa et al., 2018). The analysis involving school-level data included the following variables:

School-Level Suspension Count. This school-level variable refers to the total number of in-school and out-of-school suspensions students receive in a given school year. The number of suspensions a particular student receives and/or the number of days the suspension lasts is not included in this. For the purposes of this dissertation, in-school and out-of-school suspensions are included in this variable. This is an outcome variable in research aim 1.

School-Level Suspension Rate. This school-level variable refers to the overall proportion of students who were suspended in a school in one school year. It is calculated by dividing the suspension count (see above variable) for a school in a given year by that school's total enrollment that year. This is an outcome variable in research aim 1.

School-Provided Data (Research Aim 2 and 3)

Demographic data was gathered from information made available and collected by the school district. Student-level data for K-8 students from the years 2011-12 through 2018-19 is utilized for this study. School districts gather this data from caregivers when students are enrolled in the public-school district. Demographic data includes: gender, race/ethnicity, free/reduced lunch eligibility, English language learner status, and special education status. The education data gathered by the school district that is utilized in this study includes: scores on statewide English language arts and math exams, attendance rates, and suspension rates. Suspension data includes the number of suspensions a student received in a school year.

Student-Level Suspensions (Binary). This student-level variable refers to whether or not a student was suspended over the course of one school year. The length of each individual suspension or number of times a student was suspended is not included in this variable. For the purpose of this dissertation, in-school and out-of-school suspensions are included in this variable.

This variable is included in the chi-square analysis in Study 2 and as a part of the inclusion criteria for research aim 3.

Student-Level Number of Suspensions (Continuous). This student-level variable refers to the number of suspensions a student receives over the course of one school year. The length of each individual suspension is not included in this variable. For the purpose of this dissertation, in-school and out-of-school suspensions are included in this variable. This is an outcome variable in research aim 3.

Student-Level Attendance. This student-level variable measures the proportion of days a student was present divided by the number of days they were enrolled in school over the course of one school year. This number includes both excused and unexcused absences. This is an outcome variable in research aim 3.

Student-Level Statewide Test Scores. This student-level variable measures students' performance on math and English/language arts exams. These exams are administered each spring to all students in the state of interest. Scores on these assessments were standardized by being converted to z-scores so that they could be easily compared. This is an outcome variable in research aim 3.

Student-Level Free or Reduced-price Lunch Status. This student-level binary variable indicates whether or not a student is eligible for free or reduced-price lunch. While imperfect, eligibility for free or reduced-price lunch is widely accepted as a proxy for economic disadvantage, with students below or slightly above the poverty line qualifying for these meals (Domina et al., 2018). This is a control variable in research aim 3.

Student-Level English Language Learner Status. This student-level binary variable indicates whether or not a student receives secondary instruction in English language. This is a control variable in research aim 3.

Student-Level Turnaround School Status. This student-level binary variable indicates whether or not a student attended a designated turnaround (consistently underperforming) school for at least one year in elementary school. This is a control variable in research aim 3.

Student-Level Race/Ethnicity. This student-level ordinal variable indicates the racial/ethnic identity that parents/guardians selected for their child. Parents had the following options: Asian, Black/African American, Latino/Hispanic, Mixed Race/Other, or White. This is a control variable in research aim 3.

Student-Level Gender. This student-level binary variable reflects the gender that parents or caregivers indicated for their child. Parents were given the options male and female. This is a control variable in research aim 3.

Student-Level Special Education Status. This student-level binary variable reflects whether a student qualified for and received a special education designation. This is a control variable in research aim 3.

MyConnects Data (Research Aim 2)

Individual Student Review. For this study, receiving an Individual Student Review (ISR) consists of a student who was referred for an Individual Student Review at some point during the school year by the City Connects coordinator and/or another staff member. This is a binary variable. Led by the City Connects coordinator and conducted by the school's "student support" or "child study" team, the ISR gathers a wide team of professionals to discuss and develop specific, measurable goals for one student (Walsh et al., 2014). More details about the

Individual Student Review can be found in chapter 2. The student IDs for individuals who receive an ISR are recorded in the City Connects proprietary database, MyConnects, along with a developmental domain that reflects the area of greatest risk for that student (e.g., academic, social-emotional/behavioral, family). This variable is included in the chi-square analysis in research aim 2.

Tier of Risk. Students are assigned to a tier of risk as a part of the Whole Class Review process. This is an ordinal variable that is recorded as Tier 1 (strengths and minimal risks), Tier 2a (strengths and mild risks), Tier 2b (strengths and moderate risks), or Tier 3 (strengths and severe risks). See chapter 2 for additional details on the Whole Class Review and tiering processes. Students' tiers are recorded in the City Connects proprietary database. This variable is included in the chi-square analysis in research aim 2.

Procedures

The study analyzed archived data that was collected for evaluation of the City Connects intervention. The Boston College Institutional Review Board (IRB) as well as the school district approved the data collection plan. Student-level data obtained by the school did not include any identifying student information. Students were de-identified using unique student ID numbers.

Preliminary Analyses

Preliminary analyses were utilized to examine characteristics of the study samples and to check for missing data. Analyses were conducted using Stata 17.

Research Question 1. In order to prepare for the primary analysis, two control groups and one City Connects group (treatment group) were identified and data for these groups was cleaned. The City Connects (treatment) group included schools implementing City Connects. Each school in this group was located in one district of interest and all schools were designated

turnaround. The first control group included non-City Connects schools that were in the same district as the City Connects group but had not been designated turnaround. The second control group included non-City Connects schools that were designated turnaround the same year as the schools in the City Connects group. They were located in the same state as the City Connects group but not the same district. Two control groups were selected because there were no non-City Connects turnaround schools located in the district of interest. See Table 1 for inclusion criteria for research question 1.

Table 1

Inclusion Criteria for Treatment and Comparison Samples for Research Question 1

	Treatment Group	Comparison Group (matched district)	Comparison Group (turnaround)
Located in district of interest	X	X	
CCNX implemented at school for at least five academic years	X		
First year of CCNX implementation in 2011-12	X		
Serves students in grades K-5	X	X	X

CCNX never implemented prior to the 2016-17 school year		X	X
All schools designated turnaround	X		X

Research Question 2. In order to prepare for the primary analyses that were developed to investigate the research questions, data cleaning procedures were utilized. The data was examined to ensure that only students who met the selection criteria were included (e.g., K-8 students attending City Connects schools). See Table 3 for research question 2 selection criteria. SSIS datasets were merged with school-provided datasets. Students who had missing data were identified for further preliminary analyses.

Table 2

Sample Inclusion Criteria for Research Question 2

	Sample
Student attended CCNX between 2013-14 and 2015-16	X
Student was in grade K-8	X
Must have non-missing suspension, tier, and ISR data	X

Research Question 3. In order to prepare for the primary analysis, data cleaning procedures were utilized. The data were examined to ensure that only students who met the selection criteria were included (e.g., students who received City Connects at least two years in elementary school, students who had available suspension data). See Table 4 for research question 3 full selection criteria.

The data for this study were provided by the district. Data from 2011-12 through 2018-19 school years were merged. All preschool, middle school, and high school data was removed from the dataset so that only data from the grades of interest (K-5) remained. Some variables of interest were not available from the school district for the 2018-19 school year at the time of this study, such as attendance data. This is discussed in chapter 4. Outliers were identified by examining studentized residuals. No outliers appeared to be due to a data entry error, so none were removed from the dataset.

Middle school outcomes were not included in the analysis as dependent variables due to the significant overlap between two independent variables. The vast majority of City Connects schools serving sixth and seventh grade students were also designated turnaround schools. 89% of sixth grade students in the sample attending City Connects schools were also in a designated turnaround school. 83% of seventh grade students in the sample attending City Connects schools were also in a designated turnaround school. This significant overlap makes it nearly impossible to parse out what could be a City Connects effect on 6^{th} and 7^{th} grade outcomes and what could be a turnaround effect on 6^{th} and 7^{th} grade outcomes. This is important because attending a turnaround school could greatly impact students' outcomes, particularly on the variables of interest in Study 3. Students attending turnaround schools are more likely to have poorer academic achievement on statewide tests, higher levels of misbehavior, and poorer attendance

(Herman et al., 2008; Redding & Nguyen, 2020; Steinberg et al., 2019). At the elementary school level, 68% of students who attended City Connects schools for at least two years also attended a turnaround school for at least one year, making it possible to extract a City Connects effect from a turnaround school effect through the use of control variables.

Table 3

Sample Inclusion Criteria for Research Question 3

	Control Group	City Connects Group
Attended a City Connects school at least two years in K-5 between 2011-12 through 2018-19		X
Never attended a City Connects school in K-5 between 2011-12 through 2018-19	X	
Attended school in district of interest in fifth grade	X	X

Primary Analyses

Research Question 1. *Are suspension rate trends lower in City Connects K-5 and K-8 schools, compared to similar non-City Connects schools?*

This research question was investigated using difference-in-differences quantitative analyses. The analyses were conducted using Stata statistical software. The first analysis

compared all schools who began receiving City Connects in 2011-12 in one district to all comparison schools within the same district. As noted in the preliminary analysis section, only schools that closely matched City Connects schools in terms of student demographics and grades served, were included as comparison schools in the sample.

The second sample included five City Connects elementary and K-8 schools in the district of interest that began receiving the intervention 2011-12 – the year after these schools were designated "turnaround schools" due to their performance compared to other schools in the state. The control group in this sample included all other designated "turnaround schools" within the same state as the City Connects schools serving K-5 and K-8 students (N=7).

For each of these samples, the proportion of suspensions per number of students in the school (including in-school and out-of-school suspensions) in City Connects schools was calculated for each year of interest. Statistically significant differences in terms of the overall school-level suspension rate each year, as well as the changes in suspension rates over time for City Connects schools, compared to non-City Connects schools, were assessed.

Research Question 2. *Are students attending a City Connects elementary school or middle school who were suspended at least once, more likely to be referred for an Individual Student Review and/or more likely to be placed into a higher tier of risk in that same school year, compared to their peers in City Connects elementary and middle schools who were not suspended?*

This research question was answered through a series of correlational and chi-square analyses. Chi-square analyses examined statistically significant differences in the percentage of students who received an Individual Student Review and who were suspended in elementary school or middle school, compared to the percentage of elementary and middle school students

who received an Individual Student Review but were not suspended that school year. Chi-square analyses were conducted examining students at the elementary school level (K-5), middle school level (6-8), and whole sample level (K-8). Students who attended a City Connects school and who were included in at least one Whole Class Review were included in the analyses.

Research Question 2a. *Are students attending a City Connects elementary or middle school who were suspended at least once more likely to be placed in a higher tier of risk compared to their peers in City Connects elementary or middle schools who were not suspended?*

Research question 2a expands on research question 2 by utilizing chi-square analyses to investigate potential differences in tiering patterns for suspended and non-suspended students.

Research Question 3. *Do students who received City Connects for at least two years in elementary school and who were suspended at least once in elementary school perform better on statewide standardized tests at the end of their elementary school career (5th grade), compared to students who did not receive City Connects in elementary school and were suspended at least once in elementary school?*

Research Question 3a. *Do students who received City Connects for at least two years in elementary school and were suspended at least once in elementary school have better attendance at the end of their elementary school career (5th grade), compared to students who did not receive City Connects in elementary school and were suspended at least once in elementary school?*

Research Question 3b. *Do students who received City Connects for at least two years in elementary school and were suspended at least once in elementary school have fewer suspensions at the end of their elementary school career (5th grade), compared to students who*

did not receive City Connects in elementary school and were suspended at least once between kindergarten and fourth grade?

To examine research questions 3a-3b, regression and moderation analyses were conducted. Each regression analysis also included 'City Connects', the independent variable of the study that is dichotomous and indicates whether a student received at least two years of the City Connects intervention in elementary school or never received the City Connects intervention in elementary school. Gender, race, special education status, English language learner status, and attending a turnaround school were included in each of the models as control variables. Each analysis included one of the following outcome variables: students' scores on annual statewide tests that assess mastery of concepts in English and mathematics in fifth grade, students' attendance rate in fifth grade, and number of days students were suspended in fifth grade (including both in-school and out-of-school suspensions).

The first set of regression analyses looked at fifth grade outcomes for the entire dataset, including students who had and had not been suspended in elementary school. This regression analysis investigated overall associations between attending a City Connects school in elementary school and fifth grade performance on each outcome variable. The second set of regression analyses only included students who received at least one in-school or out-of-school suspension as an elementary school student (see Table 4 for full inclusion criteria). For research question 3b, which investigated students' fifth grade suspension rates, students who were suspended at least once between kindergarten and fourth grade were included to account for multicolinearity concerns. Lastly, moderation analyses looked at the impact of the interaction between being suspended at least once in elementary school and receiving City Connects for at least two years in elementary school on the outcome variables of interest.

Chapter 4: Results

This chapter presents the results of this dissertation's three research questions. First, the preliminary data analysis process and results are presented by research question, including missing data, sample demographics, and descriptive statistics of measures. Primary analyses are presented next, again by research question. The results of each primary research question are followed by a brief summary of the results.

Preliminary Analyses

Research Question 1: *Suspension rate trends*

Descriptive analyses were run to check for missing data in key variables of interest. There was no missing school-level data in the dataset for the first analysis. Descriptive analyses were also run to ensure that the City Connects group and control groups matched in terms of grades served and approximate students characteristics (e.g., race/ethnicity, percentage of students receiving free/reduced-price lunch, gender, special education status, grades served). Schools were included in the sample as control schools when at least three key demographic variables approximately matched (within one standard deviation) the schools in the City Connects group. Control group schools that greatly differed from the schools in the City Connects group (e.g., schools with a low percentage of students receiving free/reduced-price lunch, schools not serving students in grades K-5) were removed from the analysis. The characteristics of each control group and the City Connects group can be found below in Table 4. The variable 'suspension count', which indicates the total number of suspensions in a given school year, was divided by the variable 'enrollment' to compute a new variable that indicated the proportion of suspensions per students enrolled in each school during a given school year.

Table 4

Study 1 Demographic Information, By Group of Schools

	City Connects (N=5)	Turnaround Control (N=7)	District Control (N=10)
Total Enrollment	3,009	5,863	3,299
Race/Ethnicity			
Latinx	67.6%	61.9%	61.1%
Black	18.8%	8.0%	18.7%
White	8.7%	16.1%	14.0%
Multiracial/Other	10.1%	14.0%	6.2%
Free/Reduced Lunch	81.6%	84.8%	82.4%
Special Education	15.8%	16.6%	17.0%
English Language Learner	21.0%	40.4%	16.0%
Math Test Percentile	23	23	34
ELA Test Percentile	22	20	33

Note. The percentages in the table above are averages across all years of interest for the study (2007-2016)

There is some variation between the City Connects group and the Turnaround and District Control groups in terms of the racial/ethnic identities of students, with the City Connects group having a higher number of Latinx/Hispanic students and a lower number of White students, while the Turnaround control group had a higher proportion of students who were English language learners. All groups had a similar proportion of students receiving free or reduced-price lunch. Students in the City Connects and Turnaround Control groups had lower standardized test scores on average. All schools in the City Connects and Turnaround Control groups were identified by their state government as being consistently underperforming due in part to students' low performance on statewide assessments. This explains the difference in percentile between these groups and the District Control group.

Prior to conducting the difference-in-difference analysis, the mean suspension rate (total school suspension counts/enrollment) at each time point for each group was assessed, as well as the mean suspension counts as each time point for each group. Table 5 and Table 6 present these results.

Table 5

Average Yearly Suspension Count by Treatment Group

Year	City Connects (N=5)	Control Turnaround (N=7)	Control District (N=10)
2007	78	58	26
2008	66	52	32
2009	62	45	38
2010	17	61	19
2011	21	70	21
2012	39	108	25
2013	33	92	28
2014	22	46	10
2015	16	41	23
2016	23	42	23

Note. Schools in City Connects and Control Turnaround groups were designated turnaround in 2010. They each began receiving state-mandated interventions, including City Connects in the treatment group, through School Redesign Grants in 2011-12.

Table 6

Suspension Rate (Average Yearly Suspensions/Enrollment) by Treatment Group

Year	City Connects (N=5)	Control Turnaround (N=7)	Control District (N=10)
2007	0.17	0.16	0.06
2008	0.16	0.14	0.08

2009	0.13	0.11	0.09
2010	0.04	0.15	0.05
2011	0.05	0.16	0.05
2012	0.10	0.25	0.06
2013	0.09	0.20	0.07
2014	0.05	0.09	0.02
2015	0.04	0.09	0.06
2016	0.06	0.09	0.08

Note. Schools in City Connects and Control Turnaround groups were designated turnaround in 2010. They each began receiving state-mandated interventions, including City Connects in the treatment group, through School Redesign Grants in 2011-12.

Research Question 2: Suspended Students and City Connects Practices

City Connects-provided SSIS data was merged with district-provided data for the three years of interest. Cases that were missing SSIS data related to the variables of interest (tier, ISR) and/or district-provided data (suspension, grade-level) were identified. A total of 452 cases (4%) were missing district-provided suspension data and 1,025 (9%) cases were missing City Connects-provided SSIS data. In total, this represented about 13% of the dataset. Patterns in the missing data were investigated. The missing data appeared to occur at random, with missing data approximately normally distributed on key variables of interest (e.g., grade-level, school, school year). All cases that were missing data on one or both variables of interests were removed from the sample using listwise deletion. This left a final sample of 11,085 students. These students attended one of 17 City Connects schools. Students who were missing tier data were removed from chi-square analyses examining the associations between suspensions and assigned tier of risk, leaving 10,097 students in these analyses. Tier data also appeared to be missing at random.

After the data were cleaned and merged, descriptive statistics were run on variables of interest. Table 7 contains the descriptive information on the variables of interest for the study for the entire K-8 sample, the subset of students in the sample in elementary school (grades K-5) and the subset of students in middle school (grades 6-8).

Table 7

Study 2 Demographic Information & Descriptive Statistics, By Grade Level

	K-8 Sample (N=11,085)	K-5 Sample (N=7,608)	6-8 Sample (N=3,477)
Gender			
Female	48.14%	48.03%	48.38%
Male	51.86%	51.97%	51.62%
Race/ethnicity			
Black	17.97%	16.81%	20.51%
White	8.75%	6.83%	12.94%
Asian	1.81%	1.39%	2.73%
Latinx/Hispanic	70.00%	73.57%	62.18%
Multi-racial/other	1.47%	1.39%	1.64%
Immigrant student	19.54%	21.00%	16.34%
Free/reduced lunch	76.02%	73.81%	80.85%
Special education	19.40%	17.58%	23.28%
Grade level			
K	10.18%	14.83%	-
1	12.42%	18.10%	-
2	13.04%	18.99%	-
3	12.57%	18.31%	-
4	11.44%	16.67%	-
5	8.99%	13.10%	-
6	21.76%	-	69.37%
7	8.23%	-	26.23%

8	1.38%	-	4.40%

Note. The numbers above represent averages across three years of data

As shown in Table 7, the majority of the students in this sample are Latinx/Hispanic and receive free or reduced-price lunch, which considered an indicator of lower family income levels (Domina et al., 2018). Students are relatively evenly distributed among the elementary-level grades. For the middle school sample, the majority of students in the dataset are in sixth grade and very few students are in eighth grade because the City Connects model is not implemented often in eighth grade.

Table 8

Study 2 Sample Characteristics on Variables of Interest

	K-8 Sample (N=11,085)	K-5 Sample (N=7,608)	6-8 Sample (N=3,477)
Has ISR Referral	7.55%	8.83%	4.75%
Reason for ISR			
Academic	56.29%	59.25%	44.24%
Family	18.32%	18.36%	18.18%
Health/Medical	0.84%	0.90%	0.61%
Social/Emotional/Behavioral	18.56%	16.57%	26.67%
No Reason Provided	5.99%	4.93%	10.30%%
Tier of Risk			
Tier 1	28.43%	27.02%	31.59%
Tier 2a	30.43%	29.14%	33.34%
Tier 2b	21.37%	22.31%	19.28%
Tier 3	13.79%	14.87%	11.38%
No Tier Assigned	5.97%	6.67%	4.41%
Suspension			
In-School	2.96%	1.01%	7.2%
Out-of-School	8.26%	3.34%	19.0%

Suspension Combined	9.74%	4.05%	22.2%

Note. The numbers represent averages across three years of data.

As shown in Table 8, slightly fewer students are referred to ISRs in middle school, compared to elementary school. The majority of ISRs are referred primarily due to academic reasons and very few ISRs are referred primarily due to health or medical reasons. The proportion of students falling into each tier of risk varied slightly between the K-5 and 6-8 levels, with more students in Tier 1 or Tier 2a in the 6-8 sample (32%, 33%) and fewer students in Tier 2b and Tier 3 (19%, 11%), compared to the K-5 sample (27%, 29%, 22%, 15%). As expected, middle school students were suspended at a higher rate for both in-school and out-of-school suspensions, compared to elementary school students.

Research Question 3: Suspended Students' Outcomes

Missing student level data was identified when each year (2011-12 through 2018-19) of the district-provided data was merged. Patterns in missing data on variables of interest (suspension rates, test scores, demographic variables, attendance rates) were identified. 12% of students in the dataset did not have standardized test score data for math and/or English language arts. This missing data was approximately evenly distributed by grade level, school, and school year. These cases were not included in the analyses that involved standardized test scores as an outcome. Standardized test score data from the 2014-15 school year was not included in this analysis because students in the sample took different types of standardized tests that had different scoring scales that school year, impacting their ability to be accurately standardized. This is discussed further in the limitations section. Less than 1% of students were missing suspension data. Attendance data was missing for the 2018-19 school year. This year was not included in the analysis for the attendance outcome. For 2011-12 through 2017-18, 1.56% of attendance data was missing. This data was missing at random. Because data was missing at

random and did not decrease the sample size enough to prevent running the planned analyses, listwise deletion was used. Studentized residuals above 3.5 and below -3.5 were identified and examined for potential data entry errors. No potential data entry errors were identified on variables of interest. No datapoints were deleted due to higher studentized residuals.

In Table 9, the full 'control' sample column shows demographic information of all students who did not receive City Connects and attended elementary school in the district of interest at some point between 2011-12 and 2018-19. The full 'treatment' sample column shows demographic information of all students who received City Connects for at least two years and attended elementary school in the district of interest at some point between 2011-12 and 2018-19. As shown in Table 9, the majority of students in the full treatment and full control groups are Black/African American (18%) or Hispanic/Latinx (72% and 59%, respectively). In addition to having more Latinx/Hispanic students, the full treatment sample has fewer White students (7%) than the full control sample (14%). Most students in the full control and treatment samples are eligible for free or reduced-price lunch, with a higher proportion of students in the full treatment group being eligible (91%) compared to the full control group (84%). A slightly higher proportion of students in the full treatment sample receive English language services (26%), compared to the full control sample (21%). The groups are relatively similar in terms of gender composition (52-53% male, 47-48% female) and special education status (21-22% receiving services).

The two columns on the right in Table 9 display the demographic characteristics of the subset of students from the full samples who were suspended at least once in elementary school. The 'control' sample reflects students who never received City Connects in elementary school. The 'treatment' sample reflects students who received City Connects for at least two years in

elementary school. The control and treatment suspended samples have significantly higher proportions of male students (75% and 80%, respectively), compared to the full samples. The suspended control sample has a higher proportion of students receiving free or reduced-price lunch (96%), compared to the full control sample. Both the control and treatment suspended samples have higher proportions of special education students (37% and 36%, respectively) compared to the full samples. Otherwise, both the suspended treatment and control samples generally mirror the full samples, with the suspended treatment and control samples including slightly more Hispanic/Latinx and Black students and slightly fewer White and Asian students, compared to full samples.

Table 9

Study 3 Variables of Interest, by Sample Type

	Full K-5 Control Sample (N=18,825)	Full K-5 Treatment Sample (N=6,911)	K-5 Suspended Control Sample (N=1,074)	K-5 Suspended Treatment Sample (N=727)
Gender				
Male	51.53%	52.55%	75.33%	80.19%
Female	48.57%	47.45%	24.67%	19.81%
Race				
Asian	2.93%	1.56%	0.37%	0.41%
Black	18.49%	18.23%	24.58%	21.32%
Latinx/Hispanic	58.75%	71.71%	59.68%	72.63%
White	14.23%	6.74%	12.10%	3.71%
Multiracial/Other	3.09%	1.75%	3.26%	1.93%
ELL Status				
ELL	18.64%	25.64%	14.53%	20.36%
Not ELL	81.36%	74.36%	85.47%	79.64%

SES				
Free or reduced	83.57%	91.29%	95.00%	96.71%
Paid lunch	16.43%	8.71%	5.00%	3.29%
Special Education				
SPED	20.18%	20.82%	35.23%	35.77%
Not SPED	79.82%	79.18%	64.77%	64.23%

Preliminary analyses of the mean, standard deviation, minimum, maximum, and range of the three outcome variables are presented in Table 10. As previously discussed, ELA and math standardized test scores were converted to z-scores.

Table 10

Study 3 Descriptive Statistics of Outcome Variables, Fifth Grade

	Suspended Students					All Students				
	N	Mean	SD	Min	Max	N	Mean	SD	Min	Max
ELA	1,120	-0.22	0.90	-2.18	3.03	10,363	0	1	-2.91	3.48
Math	1,119	-0.15	0.90	-2.19	2.64	10,403	0	1	-2.82	3.66
Attendance	1,170	0.93	0.06	0.55	1.00	11,513	0.95	0.06	0	1
Suspension	1,356	0.82	1.14	0	9	13,204	0.08	0.44	0	9

Note. ELA and Math Test Scores are Z-scores standardized across the entire sample, including non-suspended students.

Note. 'Suspended students' refers to the subset of students suspended at least once between K-5

The next section details the primary analyses that were conducted after the preliminary analyses. Again, results are discussed by research aim, beginning with research aim 1.

Primary Analyses

Research Aim 1: Suspension rate trends

Difference-in-difference estimation analyses were run to estimate the effect of the City Connects intervention on discipline rates (total count and proportion of students suspended) at the school-level. Two analyses were run for each outcome variable to: 1) compare the City

Connects group to the non-turnaround district control group and to 2) compare the City Connects group to the turnaround control group. All analyses were run in Stata version 17.

There was a statistically significant change in rates of suspension counts for the City Connects and turnaround control group analysis. This statistically significant change occurred the year prior to City Connects being implemented in the treatment schools ($p < 0.01$), with the suspension count in City Connects schools dropping at a much higher rate, compared to the turnaround control schools (see Figure 1). For the following years, there were not statistically significant differences in suspension counts, compared to the year prior to City Connects implementation (See Table 11).

Table 11

Difference-in-Difference Analysis of Suspension Counts: Turnaround Schools Control Group

Year	Intervention Year	Coefficient	Standard Error	P-Value
2007	-4	64.89	30.84	0.06
2008	-3	58.03	21.34	0.02*
2009	-2	60.77	15.50	<0.01**
2011	0	-4.51	10.52	0.68
2012	1	-25.23	16.63	0.16
2013	2	-15.03	18.85	0.44
2014	3	20.34	11.45	0.10
2015	4	19.46	20.21	0.36
2016	5	32.10	21.75	0.17

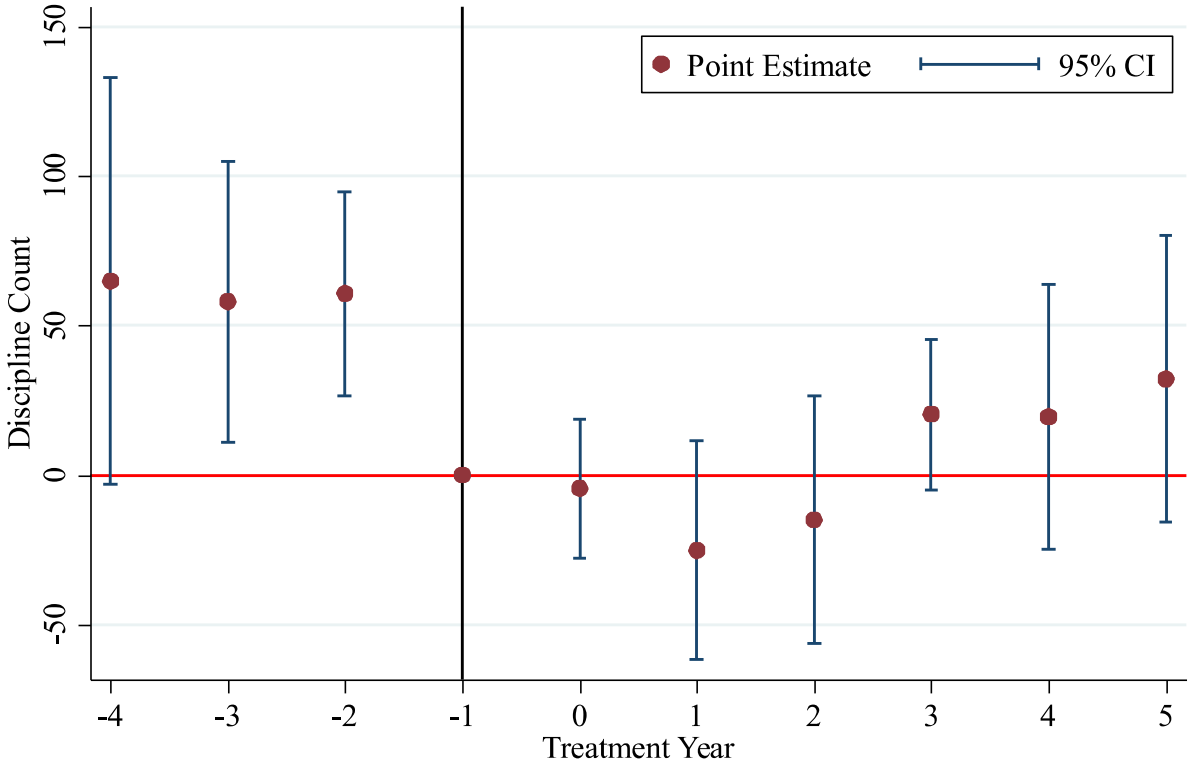
Note. Treatment year -1 (1 year prior to implementation of treatment) is not included because it is the comparison group.

Note: turnaround designation occurred in 2010 for each group

Note: * $p < 0.05$, ** $p < 0.01$

Figure 1

Difference-in-Difference Graph of Suspension Counts: Turnaround Schools Control Group



The next difference-in-difference analysis used discipline rates (discipline count/enrollment count) as the outcome variable. Patterns were similar in this analysis compared to the previous analysis looking at suspension counts in the same groups of schools (City Connects schools and control turnaround schools). There was a statistically significant drop in suspension proportion rate in the treatment group that occurred one year prior to implementation of the intervention of interest ($p < 0.01$). There was also a statistically significant change in suspension proportion rate in treatment year 3 ($p = 0.04$), due to a decrease in the suspension proportion rate in the control turnaround schools group, but not in the City Connects group. Table 12 and Figure 2 show the test statistics of interest as well as a visual of these trends.

Table 12

Difference-in-Difference Analysis of Suspension Proportion Rates: Turnaround Schools Control Group

Year	Intervention Year	Coefficient	Standard Error	P-Value
2007	-4	0.13	0.09	0.20
2008	-3	0.13	0.07	0.08
2009	-2	0.13	0.03	<0.01**
2011	0	<0.01	0.03	0.93
2012	1	-0.04	0.04	0.40
2013	2	>-0.01	0.03	0.95
2014	3	0.07	0.05	0.04*
2015	4	0.06	0.05	0.21
2016	5	0.10	0.06	0.11

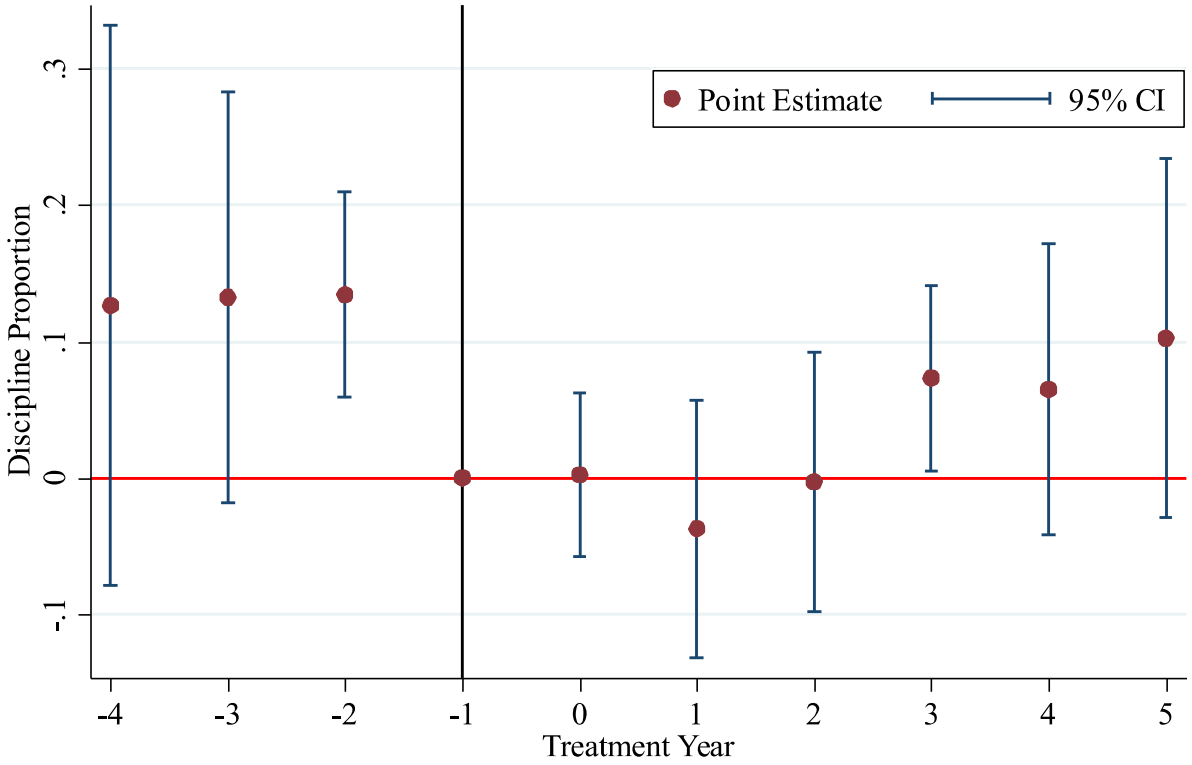
Note. Treatment year -1 (1 year prior to implementation of treatment) is not included because it is the comparison group.

Note. turnaround designation occurred in 2010 for each group

Note. * $p < 0.05$, ** $p < 0.01$

Figure 2

Difference-in-Difference Graph of Suspension Proportion Rates: Turnaround Schools Control Group



Next, the same analyses were run comparing the treatment schools to similar non-turnaround schools located in the same district (Tables 13-14 and Tables 3-4). There were similarities in the patterns for difference-in-difference analyses between these two groups and the previous analyses comparing treatment schools to other turnaround schools. There was a statistically significant drop in discipline counts for the treatment group one year prior to the implementation of City Connects, compared to the previous three years ($p < 0.05$) that did not occur in the non-turnaround district control group schools. After the shift in suspension counts in 'Treatment Year -1', the difference in suspension count rates between the two groups remained relatively stable, with no statistically significant changes in rates. This indicates that both groups maintained similar suspension counts during these years. See Table 13 and Figure 3 for test statistics and a visual of the difference-in-difference analysis.

Table 13

Difference-in-Difference Analysis of Suspension Counts: Non-Turnaround District Control Group

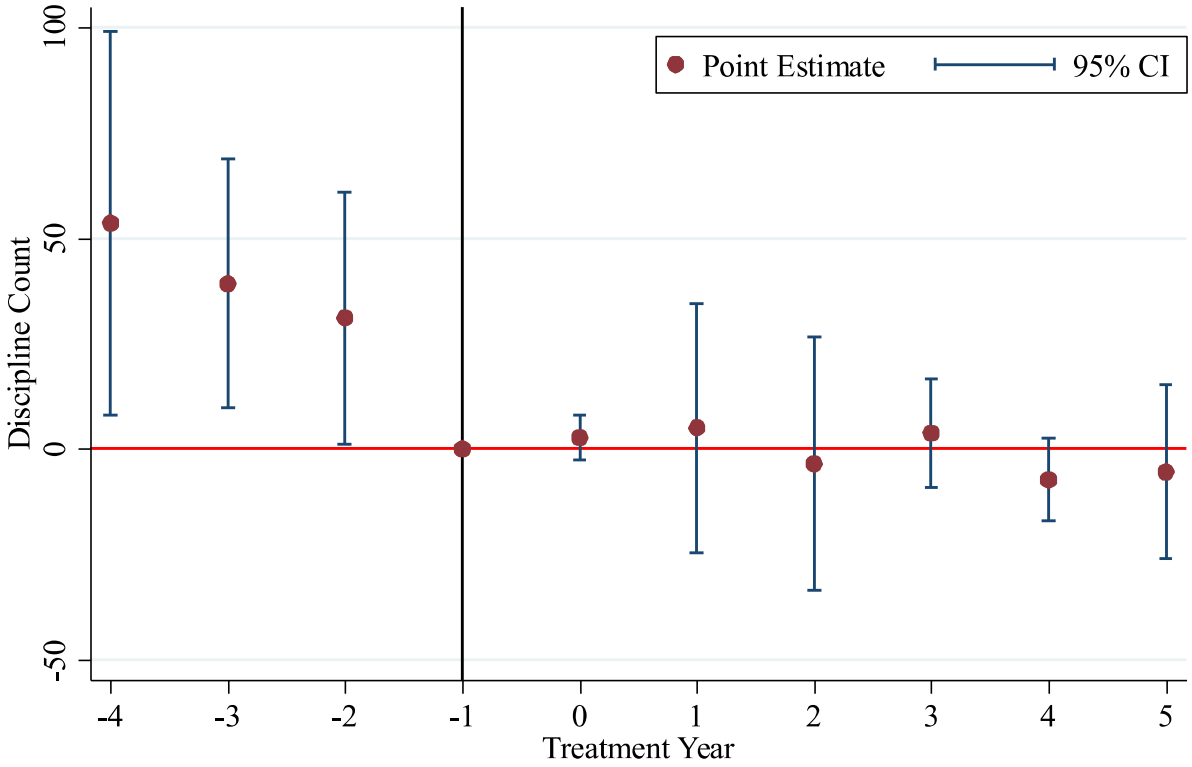
Treatment Year	Coefficient	Standard Error	P-Value
-4	53.54	21.91	0.02*
-3	39.16	14.25	0.01*
-2	31.03	14.45	0.04*
0	2.70	2.63	0.32
1	4.98	14.22	0.73
2	-3.49	14.52	0.81
3	3.76	6.20	0.55
4	-7.29	4.73	0.14
5	-5.39	9.92	0.59

Note: Treatment year -1 (1 year prior to implementation of treatment) is not included because it is the comparison group.

Note: * $p < 0.05$, ** $p < 0.01$

Figure 3

Difference-in-Difference Graph of Suspension Counts: Non-Turnaround District Control Group



Next, an analysis was run to compare trends in discipline proportion rates between the treatment group and non-turnaround district control group. This analysis revealed similar patterns to the previous analysis. Again, there was a statistically significant drop in the rate of discipline proportions that occurred only for the treatment schools one year before implementation of City Connects. There were statistically significant findings for 'Treatment Year -1' compared to 'Year -3' and 'Year -4'. These findings indicate that suspension proportion rate decreased at a greater rate than the comparison schools at treatment year -1 and the suspension proportion in control schools continued to decrease at a slightly greater rate in treatment years 4 and 5. Full test statistics and the visual for this difference-in-difference analysis can be found in Table 14 and Figure 4.

Table 14

Difference-in-Difference Analysis of Suspension Proportion Rates: Non-Turnaround District Control Group

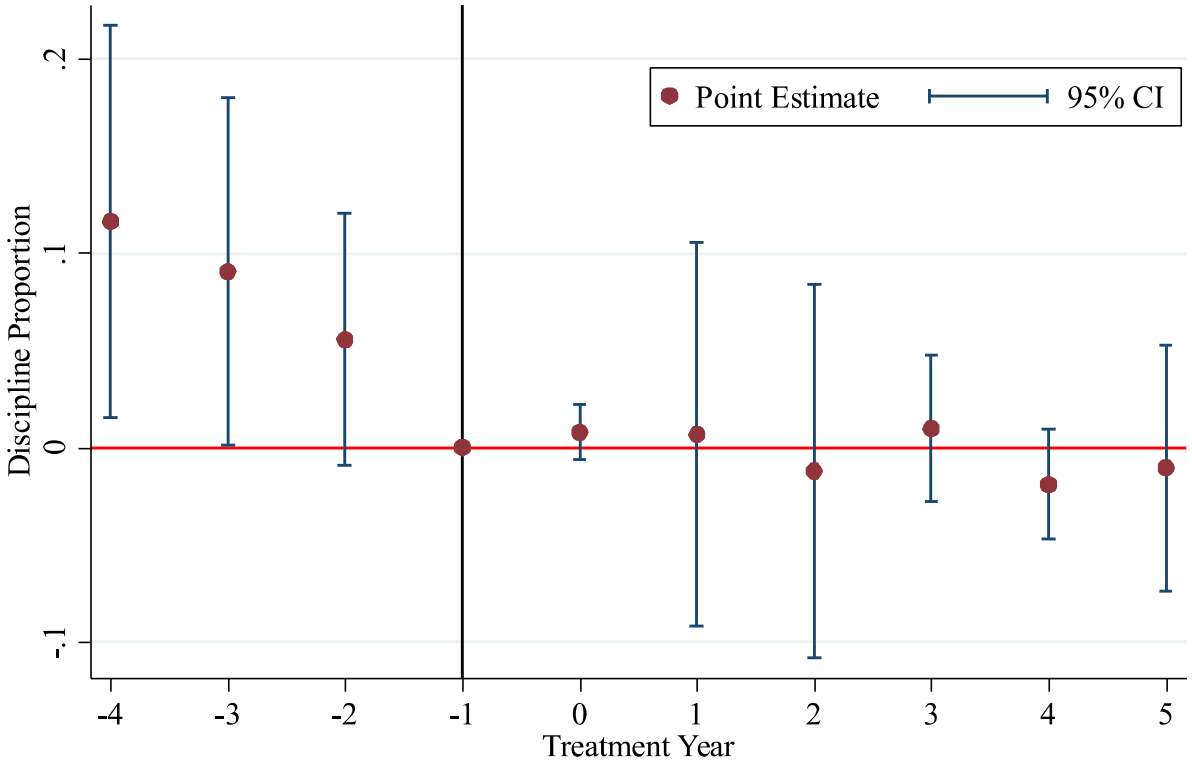
Treatment Year	Coefficient	Standard Error	P-Value
-4	0.12	0.05	0.03*
-3	0.09	0.04	0.05*
-2	0.06	0.03	0.09
0	0.01	0.01	0.27
1	0.01	0.05	0.89
2	-0.01	0.05	0.80
3	0.01	0.02	0.60
4	-0.01	0.01	0.18
5	-0.01	0.03	0.74

Note: Treatment year -1 (1 year prior to implementation of treatment) is not included because it is the comparison group.

Note: * $p < 0.05$, ** $p < 0.01$

Figure 3

Difference-in-Difference Graph of Suspension Proportion Rates: Non-Turnaround District Control Group



Research Aim 1 Summary. The purpose of the first research question was to examine trends in suspension proportions (suspensions/students enrolled) and suspension counts for City Connects and non-City Connects schools, pre- and post-City Connects implementation (see 'Measures' section in Chapter 3 for detailed variable information). It was hypothesized that schools implementing City Connects would see greater reductions in suspension counts and rates post-implementation than comparison turnaround schools within the same state and non-turnaround comparison schools within the same district. This hypothesis was partially confirmed by the difference-in-differences analyses, but due to the timing of the reduction in discipline rates in City Connects schools, findings cannot be fully attributed to the implementation of the City Connects model. City Connects schools saw significantly greater decreases in suspension proportion and count than both groups of comparison schools a year prior to City Connects

implementation. Schools in the 'City Connects' group continued to have these lower suspension rates and counts for the following six years. Other non-City Connects turnaround schools in the state saw decreases in suspension rates and counts 4 years after the City Connects schools. In years 4-6, non-City Connects turnaround schools had slightly higher but overall similar suspension rates to City Connects turnaround schools.

Research Question 2: Suspended students and City Connects practices

For research question 2, several descriptive analyses were conducted to investigate the associations between assigned tier of risk, referrals for Individual Student Reviews, and suspensions for students in City Connects schools. Due to the exploratory nature of these analyses, findings are reported in three samples: the full K-8 sample, a K-5 subset of the full sample (elementary-age sample), and a 6-8 subset of the full sample (middle school-age sample) to examine similarities and differences in trends for various age groups. See Tables 7 and 8 for full descriptive statistics for each of the samples.

K-8 Sample. Correlation analyses were run to examine associations between a) ISR referrals and number of suspensions, b) ISR referrals and being suspended at least once, c) tier of risk and number of suspensions, and d) tier of risk and being suspended at least once for the full sample of K-8 students. The analyses revealed positive correlations between being referred for an ISR and number of suspensions ($r = 0.12$) and being referred for an ISR and being suspended at least once ($r = 0.09$). Tier of risk and number of suspensions and tier of risk and being suspended at least once also had positive associations that were slightly larger in magnitude than ISR referral and suspension ($r = 0.20$ and 0.21, respectively). While these correlation coefficients are relatively small, these values alone do not fully convey practical significance (Rosenthal & Rubin, 1982). The comparison of actual and expected values from the chi-square analyses

(displayed in Table 16-17) help illuminate the magnitude of differences in ISR rates and tiering for suspended and non-suspended students (Rosnow & Rosenthal, 2003).

Table 15

Spearman Correlation Coefficients for Tier of Risk, ISR, and Suspensions, K-8

	Number of Suspensions	Suspended Ever
Received ISR	0.12	0.09
Tier of Risk	0.20	0.21

Note. N= 11,085

To meet the aims of research question 2, a chi-square test of independence was run to examine a) the frequency of suspension rates for students referred to an ISR and students not referred to an ISR and b) the frequency of suspension rates for students within each tier of risk (1, 2a, 2b, 3). It was hypothesized that a higher frequency of students who were suspended at least once received an ISR, compared to students who were not suspended. It was also hypothesized that a higher frequency of students who were suspended at least once would be assigned to a higher tier of risk (2b, 3).

A 2x2 chi-square was calculated to examine the relationship between ISR and suspension. A statistically significant association between being referred for an ISR and being suspended at least once was discovered (X^2 (1, N = 11,085) = 90.45, p > .001). This association had a relatively small magnitude (Cramer's V = 0.09). However, the chi-square analysis revealed that nearly twice as many suspended students received an ISR than expected (160 actual, 81.5 expected). The majority of suspended students (85.19%) did not receive an ISR, which is not unexpected given that 8% of overall students within the sample received an ISR. Very few non-

suspended students got an ISR (6.77%); this number was lower than expected (677 actual, 755.5 expected).

Table 16

Chi-Square of Suspended and Non-Suspended K-8 Students in Each ISR Referral Category

	Not Suspended N=10,005	Suspended N=1,080
No ISR N=10,248	9,328 (actual) 9,250 (expected)	920 (actual) 999 (expected)
Has ISR N=837	677 (actual) 756 (expected)	160 (actual) 82 (expected)

A 4x2 chi-square was calculated to examine the relationship between tier of risk and suspension. 641 students did not have an assigned tier of risk. These cases appeared at random and these students were removed from this analysis. A statistically significant association between tier of risk and being suspended at least once was discovered (X^2 (3, N = 10,097) = 536.54, p > .001). There was a moderate association between tier of risk and being suspended (Cramer's V = 0.23). A higher number of suspended students than expected were in Tier 3 (361 actual, 147.9 expected) and, to a lesser extent in Tier 2b (287 actual, 229.1 expected). The vast majority of students in Tier 1 were not suspended (97.05%) and the number of non-suspended students in Tier 1 was higher than expected (2,963 actual, 2,748.2 expected) and far fewer suspended students were in Tier 1 than expected (90 actual, 304.8 expected).

Table 17

Chi-Square of Suspended and Non-Suspended K-8 students in Each Tier of Risk

	Not Suspended N=9,089	Suspended N=1,008
Tier 1	2,963 (actual)	90 (actual)

N=3,053	2,748 (expected)	305 (expected)
Tier 2a	2,998 (actual)	270 (actual)
N=3,268	2,942 (expected)	326 (expected)
Tier 2b	2,008 (actual)	287 (actual)
N=2,295	2,066 (expected)	229 (expected)
Tier 3	1,120 (actual	361 (actual)
N=1,481	1,333 (expected)	149 (expected)

K-5 Sample. Correlation analyses were run to examine associations between a) ISR referrals and number of suspensions, b) ISR referrals and being suspended at least once, c) tier of risk and number of suspensions, and d) tier of risk and being suspended at least once for students in elementary school (grades K-5). The analyses revealed a similar pattern to the full K-8 sample. There were small positive correlations between being referred for an ISR and number of suspensions (0.09) and being referred for an ISR and being suspended at least once (0.08). Tier of risk and number of suspensions and tier of risk and being suspended at least once also had small positive associations that were slightly larger in magnitude than the previous analyses using ISR referrals (0.17 and 0.19, respectively). In interpreting these analyses, it is important to note that suspension rates were quite low (4% of students) at the elementary level for this sample. Because of this, the numbers in the chi-square analyses (Table 19-20) provide a clearer view of the practical importance of these associations. See Table 4 for all descriptive statistics for this sample.

Table 18

Pearson Correlation Coefficients for Tier of Risk, ISR, and Suspensions, K-5

	Number of Suspensions	Suspended Ever
Received ISR	0.09	0.08

Tier of Risk	0.17	0.19

Note. N= 7,608

A 2x2 chi-square was calculated to examine the relationship between ISR and suspension for students in elementary school grades (K-5). A statistically significant association between being referred for an ISR and being suspended at least once was discovered (X^2 (1, N = 7,608) = 50.87, p > .001). This association had a relatively small magnitude (Cramer's V = 0.08). As shown in Table 19, this association was practically significant, as more than twice the number of suspended students getting an ISR was more than twice what was expected (62 actual, 27.2 expected). Overall, most students did not get an ISR. Among suspended students, 20% got an ISR, compared to 8% of non-suspended students. Overall, as the elementary school level, suspended students were more than twice as likely as non-suspended students to get an ISR. As shown in Table 4, the majority of ISRs at the elementary school level were referred primarily due to academic concerns, with very few students being referred to an ISR due to social/emotional/behavioral concerns.

Table 19

Chi-Square of Suspended and Non-Suspended K-5 Students in each ISR Referral Category

	Not Suspended N=7,300	Suspended N=308
No ISR N=6,936	6,690 (actual) 6,655 (expected)	246 (actual) 281 (expected)
Has ISR N=672	610 (actual) 645 (expected)	62 (actual) 27 (expected)

A 4x2 chi-square was calculated to examine the relationship between tier of risk and suspension for students at the elementary school level. 495 students did not have an assigned tier

of risk. These cases appeared at random and these students were removed from this analysis. A statistically significant association between tier of risk and being suspended at least once was discovered (X^2 (3, N = 6,929) = 459.37, p > .001). There was a strong association between tier of risk and being suspended (Cramer's V = 0.26). A higher number of suspended students than expected were in Tier 3 (172 actual, 45.7 expected) and a much lower number of suspended students were in tier 1 than expected (9 actual, 83.1 expected). Nearly all students in Tier 1 were not suspended (99.6%). 82% of suspended K-5 students were in Tier 2b or Tier 3. Taken together, these findings indicate that suspended elementary-aged students were generally assigned to higher tiers of risk and non-suspended elementary-aged students were generally assigned to lower tiers of risk.

Table 20

Chi-Square of Suspended and Non-Suspended K-5 students in Each Tier of Risk

	Not suspended N= 6,642	Suspended N= 287
Tier 1 N= 2,006	1,997 (actual) 1,923 (expected)	9 (actual) 83 (expected)
Tier 2a N= 2,163	2,121 (actual) 2,073 (expected)	42 (actual) 90 (expected)
Tier 2b N= 1,656	1,592 (actual) 1,587 (expected)	64 (actual) 69 (expected)
Tier 3 N= 1,104	932 (actual) 1,058 (expected)	172 (actual) 46 (expected)

6-8 Sample. Correlation analyses were also run to examine associations for students in middle school (grades 6-8). The analyses revealed stronger correlations between the variables of interest, compared to the K-8 and K-5 samples. There were positive associations between being

referred for an ISR and number of suspensions (0.26) and being referred for an ISR and being suspended at least once (0.20). Tier of risk and number of suspensions and tier of risk and being suspended at least once had slightly stronger positive associations (0.32 for each correlation) compared to the correlations at the elementary school level. This may be due at least in part to suspension rates being higher at the middle school level (22%), compared to the elementary school level (4%). See Table 4 for full descriptive statistics for each age group.

Table 21

Pearson Correlation Coefficients for Tier of Risk, ISR, and Suspensions, 6-8

	Number of Suspensions	Suspended Ever
Received ISR	0.26	0.20
Tier of Risk	0.32	0.32

Note. N= 3,477

A 2x2 chi-square was calculated to examine the relationship between ISR and suspension for students in middle school grades (6-8). A statistically significant association between being referred for an ISR and being suspended at least once was discovered (X^2 (1, N = 3,477) = 138.71, p > .001). This association had a small-moderate magnitude (Cramer's V = 0.20). A much higher number of students who were suspended had an ISR than expected (98 actual, 36.6 expected). Very few non-suspended students got an ISR (3% of all non-suspended students); this number was lower than expected (67 actual, 128.4 expected). Overall, there was a modest association between being suspended and receiving an ISR at the middle school level that was larger than the association at the elementary school level. As shown in Table 4, while the majority of ISRs at the middle school level were referred due to academic concerns, a larger proportion of ISRs were referred due to social/emotional/behavioral concerns, compared to the elementary school level.

Table 22

Chi-Square of Suspended and Non-Suspended 6-8 Students in each ISR Referral Category

	Not Suspended N=2,705	Suspended N=772
No ISR N=3,312	2,683 (actual) 2,577 (expected)	674 (actual) 735 (expected)
Has ISR N=165	67 (actual) 128 (expected)	98 (actual) 37 (expected)

A 4x2 chi-square was calculated to examine the relationship between tier of risk and suspension for students at the middle school level. 146 students did not have an assigned tier of risk. These cases appeared at random and these students were removed from this analysis. A statistically significant association between tier of risk and being suspended at least once was discovered (X^2 (3, N = 3,168) = 351.51, p > .001). There was a strong association between tier of risk and being suspended (Cramer's V = 0.33). A higher number of suspended students than expected were in Tier 3 (189 actual, 85.8 expected) and Tier 2b (223 actual, 145.4 expected) and a much lower number of suspended students were in Tier 1 than expected (81 actual, 238.3 expected). The vast majority of students in Tier 1 were not suspended (92.26%). The majority of suspended students were in Tier 2b or 3 (57.14%). Interestingly, a large portion of suspended students were in Tier 2a (31.62%), which diverged from findings from the K-5 group (see Table 19). Taken together, these findings indicate that suspended middle school students were assigned to higher tiers of risk than expected and relatively few non-suspended students were assigned to the highest tier of risk.

Table 23

Chi-Square of Suspended and Non-Suspended 6-8 Students in Each Tier of Risk

	Not suspended N= 2,447	Suspended N= 721
Tier 1 N= 1,047	966 (actual) 809 (expected)	81 (actual) 238.3 (expected)
Tier 2a N= 1,105	877 (actual) 854 (expected)	228 (actual) 252 (expected)
Tier 2b N= 639	416 (actual) 494 (expected)	223 (actual) 146 (expected)
Tier 3 N= 377	188 (actual) 291 (expected)	189 (actual) 86 (expected)

Research Aim 2 Summary. The purpose of research aim 2 was to explore any differences in ISR and tiering trends for suspended and non-suspended students in City Connects schools. It was hypothesized that students who were suspended in a given school year would be more likely to be placed into a higher tier of risk (Tier 2b, Tier 3) or receive an ISR, compared to students who were not suspended during that school year. This analysis did not control for the timing of the suspension in comparison to the ISR referral or tier of risk placement- students may have been suspended before or after these events.

The hypothesis was confirmed by this dissertation's descriptive analysis at both the elementary and middle school level. Although correlation coefficients and Cramer's Vs at the elementary school level were relatively small, the raw numbers in the chi-square results indicated practically significant findings across all analyses (Rosnow & Rosenthal, 2003). Overall, students were significantly more likely to be placed into Tier 2b or Tier 3 and were significantly more likely to receive an ISR in a given school year if they were also suspended during that school year. These trends were slightly stronger at the middle school level, compared to the elementary school level. However, this is likely due in part to the larger proportion of suspended students at the middle school level. At both the elementary and middle school levels, there was a

slightly stronger association between tier of risk and suspension, compared to ISR and suspension.

Research Aim 3: Fifth Grade Outcomes for Suspended Students

To answer research aim three, a series of regression and moderation analyses were run. The purpose of these analyses was to investigate the association between receiving the City Connects and fifth grade outcomes for students, focusing on students who had been suspended at least once in elementary school. Students in the treatment group attended a City Connects school for at least two years in elementary school. Students in the control group did not attend a City Connects school at all in elementary school. For full inclusion criteria, see Table 3. Each analysis controlled for students' gender, race/ethnicity (White students as comparison group), special education status, free or reduced-price lunch eligibility, and English language learner status. A school-level variable, enrollment at a designated turnaround (consistently underperforming) school for at least one year, was also included in each model to account for the negative associations between turnaround schools and student outcomes. Results for both models on each of the three outcome variables of interest are presented in the following sub-sections. Results are presented by research sub-question. Each sub-section includes a regression analysis that includes all K-5 students in the sample, a regression analysis that only includes students who were suspended at least once in elementary school, and a moderation analysis that examines the interaction between being suspended at least once in elementary school and attending a City Connects school for at least two years in elementary school.

Research Question 3: Statewide Standardized Test Scores

First, regression analyses were run to compare fifth grade ELA and math standardized test scores for all students in the treatment and control groups. The first two analyses regressed

math and ELA standardized test scores on to the City Connects treatment variable and included all student-level control variables and the turnaround school control variable. The data are presented in Table 24 and 25.

The overall model that included math standardized test scores as the outcome variable was significant $F(10, 10{,}078) = 184.50$, $p < 0.01$, $R^2 = 0.15$, indicating that the independent variables reliably predict the dependent variable and account for approximately 15% of the overall variance in math scores. The analysis found that students who received City Connects for at least two years in elementary school scored significantly higher on math standardized assessments, compared to students who did not receive City Connects in elementary school ($b = 0.14$, $p < 0.01$). Results indicate that, other than gender, all control variables were significantly associated with the outcome variable. Receiving special education services, receiving English language supports, receiving free/reduced-price lunch, identifying as Black, Latinx, or multiracial, and attending a turnaround school for at least one year were all associated with lower math scores. Identifying as Asian was associated with higher math scores.

Table 24

Linear Regression- City Connects Status and Math Scores with All Students

	b	SE	p
CCNX	0.14	0.03	<0.01**
SPED	-0.71	0.02	<0.01**
ELL	-0.21	0.02	<0.01**
Lunch Status	-0.33	0.03	<0.01**
Gender	0.02	0.02	0.26
Race			
Black	-0.33	0.03	<0.01**
Asian	0.65	0.06	<0.01**
Latinx/Hispanic	-0.31	0.03	<0.01**

Multiracial/Other	-0.18	0.06	<0.01**
Turnaround	-0.25	0.03	<0.01**

Note. * $p < 0.05$ ** $p < 0.01$

The overall model that included ELA standardized test scores as the outcome variable was significant $F(10, 10{,}047) = 261.34$, $p < 0.01$, $R^2 = 0.21$, indicating that the independent variables reliably predict the dependent variable and account for approximately 21% of the overall variance in ELA scores. The analysis found that students who received City Connects for at least two years in elementary school scored significantly higher on ELA standardized assessments, compared to students who did not receive City Connects in elementary school ($b = 0.10$, $p < 0.01$). Results indicate that all control variables were significantly associated with the outcome variable. Receiving special education services, receiving English language supports, receiving free/reduced-price lunch, identifying as male, Black, Latinx, or multiracial, and attending a turnaround school for at least one year were all associated with lower ELA scores. Identifying as Asian was associated with higher ELA scores.

Table 25

Linear Regression- City Connects Status and ELA Scores with All Students

	b	SE	p
CCNX	0.10	0.03	<0.01**
SPED	-0.85	0.02	<0.01**
ELL	-0.33	0.02	<0.01**
Lunch Status	-0.34	0.03	<0.01**
Gender	-0.20	0.02	<0.01**
Race			
Black	-0.18	0.03	<0.01**
Asian	0.40	0.06	<0.01**
Latinx/Hispanic	-0.22	0.02	<0.01**

Multiracial/Other	-0.10	0.06	<0.01**
Turnaround	-0.17	0.03	<0.01**

Note. * p < 0.05 ** p < 0.01

The second regression analyses only included students who had been suspended at least once in elementary school. Like the first regression analyses, they also regressed math and ELA standardized test scores on to the City Connects treatment variable and included all of the same control variables. The data are presented in Table 26 and 27.

The overall model that only included suspended students and examined math standardized test scores was significant, $F(10, 1{,}090) = 12.45$, $p < 0.01$, $R^2 = 0.10$, indicating that the independent variables reliably predicted the dependent variable and accounted for approximately 10% of the overall variance in math scores. The analysis found that suspended students who received City Connects for at least two years in elementary school scored higher on math standardized assessments, compared to suspended students who never received City Connects in elementary school ($b = 0.17$, $p = 0.02$). Results indicate that students who attended a turnaround school for at least one year, English language learners, and special education students who had been suspended had lower math scores than their peers who had been suspended and did not hold these identities. Asian students who had been suspended scored significantly higher on the math standardized assessment than White students who had been suspended.

Table 26

Linear Regression- City Connects Status and Math Scores of Suspended Students

	b	SE	p
CCNX	0.17	0.07	0.02*
SPED	-0.52	0.06	<0.01**
ELL	-0.23	0.08	<0.01**
Lunch Status	-0.21	0.17	0.23

Gender	0.01	0.06	0.83
Race			
Black	-0.13	0.11	0.21
Asian	0.91	0.38	0.02*
Latinx/Hispanic	-0.13	0.10	0.20
Multiracial/Other	-0.22	0.18	0.22
Turnaround	-0.27	0.07	<0.01**

Note. * $p < 0.05$ ** $p < 0.01$

The overall model that only included students who had been suspended at least once in elementary school and examined ELA standardized test scores as the outcome variable was significant $F(10, 1{,}091) = 19.61$, $p < 0.01$, $R^2 = 0.15$, indicating that the independent variables reliably predict the dependent variable and account for approximately 15% of the overall variance in ELA scores. The analysis found that among students who were suspended at least once in elementary school, students who received City Connects for at least two years in elementary school scored slightly higher on ELA standardized assessments, compared to students who did not receive City Connects in elementary school ($b = 0.07$, $p = 0.29$). Results indicate that attending a turnaround school, receiving special education services, receiving English language supports, receiving free/reduced-price lunch, and identifying as male were associated with lower ELA scores. Identifying as Asian was associated with higher ELA scores.

Table 27

Linear Regression- City Connects Status and ELA Scores of Suspended Students

	b	SE	p
CCNX	0.07	0.07	0.29
SPED	-0.62	0.06	<0.01**
ELL	-0.33	0.07	<0.01**
Lunch Status	-0.34	0.17	0.04*

Gender	0.17	0.06	0.01**
Race			
Black	0.07	0.46	0.21
Asian	0.86	0.36	0.02*
Latinx/Hispanic	<0.01	0.09	0.98
Multiracial/Other	-0.17	0.18	0.33
Turnaround	-0.14	0.07	0.04*

Note. * $p < 0.05$ ** $p < 0.01$

The third analyses examining fifth grade math and ELA scores on standardized tests included an interaction term. This analysis included all students in the dataset and examined the main effects of attending a City Connects school for at least two years, the main effects of being suspended at least once, and interaction between these two variables. All control variables from the previous regression analyses were included.

For the model that examined math standardized test scores, the overall model was significant $F(12, 10{,}065) = 164.82$, $p < 0.01$, $R^2 = 0.16$, indicating that the independent variables reliably predict the dependent variable and account for approximately 16% of the overall variance in math scores. The main effects in the moderation analysis indicate that City Connects has a statistically significant positive association with math standardized test scores for students who were not suspended ($b = 0.13$, $p < 0.01$) and that being suspended at least once has a statistically significant negative association with math standardized test scores for students who did not get City Connects ($b = -0.33$, $p < 0.01$). The interaction effect was not statistically significant ($b = 0.05$, $p = 0.38$). The positive coefficient for the interaction effect indicates that City Connects has a slightly greater positive effect on math standardized test scores for students who were suspended at least once, compared to students who were not suspended.

Table 28

Moderation Analysis- City Connects Status x Suspended Status and Math Scores

	b	SE	p
CCNX	0.13	0.03	<0.01**
Suspended	-0.33	0.04	<0.01**
CCNX x Suspended	0.05	0.06	0.38
SPED	-0.69	0.02	<0.01**
ELL	-0.22	0.02	<0.01**
Lunch Status	-0.31	0.03	<0.01**
Gender	0.05	0.02	<0.01**
Race			
Black	-0.32	0.03	<0.01**
Asian	0.63	0.06	<0.01**
Latinx/Hispanic	-0.30	0.03	<0.01**
Multiracial/Other	-0.17	0.06	<0.01**
Turnaround	-0.23	0.03	<0.01

Note. * $p < 0.05$ ** $p < 0.01$

For the moderation analysis that examined ELA standardized test scores, the overall model was significant $F(12, 10{,}045) = 228.16$, $p < 0.01$, $R^2 = 0.21$, indicating that the independent variables reliably predict the dependent variable and account for approximately 21% of the overall variance in ELA scores. The main effects in the moderation analysis indicate that City Connects has a statistically significant positive association with ELA standardized test scores for students who were not suspended ($b = 0.09$, $p < 0.01$). Results also indicate that being suspended at least once has a statistically significant negative association with ELA standardized test scores for students who did not get City Connects ($b = -0.30$, $p < 0.01$). The interaction effect was not statistically significant ($b = 0.02$, $p = 0.73$). The non-significant positive coefficient for the interaction effect indicates that City Connects has a slightly greater positive

effect on ELA standardized test scores for students who were suspended at least once, compared to students who were not suspended.

Table 29

Moderation Analysis- City Connects Status x Suspended Status and ELA Scores

	b	SE	p
CCNX	0.09	0.03	<0.01**
Suspended	-0.30	0.04	<0.01**
CCNX x Suspended	0.02	0.06	0.73
SPED	-0.83	0.02	<0.01**
ELL	-0.34	0.02	<0.01**
Lunch Status	-0.32	0.03	<0.01**
Gender	-0.18	0.02	<0.01**
Race			
Black	-0.17	0.03	<0.01**
Asian	0.39	0.06	<0.01**
Latinx/Hispanic	-0.22	0.03	<0.01**
Multiracial/Other	-0.09	0.06	0.11
Turnaround	-0.15	0.03	<0.01

Note. * $p < 0.05$ ** $p < 0.01$

Research Question 3a: Attendance

Next, a series of analyses were run to examine the impact of City Connects on attendance rates. The analyses included a linear regression that included all students in the sample, a linear regression that included only students who had been suspended in elementary school, and a moderation analysis examining the interaction between attending a City Connects school and being suspended at least once in elementary school. Each analysis included fifth grade attendance rates (number of days present divided by the number of days enrolled) as the outcome

variable. Each model includes special education status, English language learner status, free/reduced-price lunch status, gender, race, and turnaround school as control variables.

The first analysis regressed fifth grade attendance rates on to the City Connects treatment variable and included all suspended and non-suspended students in the sample. The data are presented in Table 30. The overall model was significant, $F(10, 11{,}282) = 31.73$, $p < 0.001$, $R^2 = 0.03$, indicating that the independent variables reliably predict the dependent variable. However, the overall model only accounts for a small percentage (3%) of the overall variance in the attendance. This indicates that results should be interpreted with some caution due to a number of factors outside of the model greatly impacting students' attendance rates. The analysis found that students who received City Connects for at least two years in elementary school had slightly better attendance rates, compared to suspended students who never received City Connects in elementary school. This difference was practically significant, but did not reach statistical significance ($b = 0.003$, $p = 0.17$). Results indicate that special education students, students receiving free/reduced-price lunch, Latinx students, and students who attended a turnaround school for at least one year had poorer attendance than their peers who did not hold these identities. Students who identified as Black or Asian had better attendance than their White peers.

Table 30

Linear Regression- City Connects Status and Attendance with Student-Level Controls

	b	SE	p
CCNX	0.003	0.002	0.174
SPED	-0.013	0.001	<0.001**
ELL	-0.001	0.001	0.595
Lunch Status	-0.006	0.002	0.001**
Gender	-0.002	0.001	0.074

Race			
Black	0.010	0.002	<0.001**
Asian	0.026	0.004	<0.001**
Latinx/Hispanic	-0.005	0.002	0.008**
Multiracial/Other	0.001	0.003	0.868
Turnaround	-0.005	0.002	0.010*

Note. * $p < 0.05$ ** $p < 0.01$

The second analysis associated with research question 3a was identical to the previous model but included only students who had been suspended at least once in elementary school. The overall model was statistically significant, $F(10, 1{,}150) = 4.33$, $p < 0.001$, $R^2 = 0.04$. These data are presented in Table 31. This analysis found that suspended students who received City Connects for at least two years in elementary school had slightly higher attendance rates, compared to suspended students who never received City Connects in elementary school. The difference was practically significant, but did not reach statistical significance ($b = 0.008$, $p = 0.14$). Attendance rates were significantly lower for special education students and students who attended a turnaround school. Attendance rates were significantly higher for Black students, compared to White students.

Table 31

Linear Regression- City Connects Status and Attendance with Student-Level Controls, Suspended Students Only

	b	SE	p
CCNX	0.008	0.005	0.144
SPED	-0.008	0.004	0.031*
ELL	-0.009	0.005	0.070
Lunch Status	0.011	0.011	0.294
Gender	-0.001	0.004	0.901
Race			

Black	0.016	0.007	0.019*
Asian	0.039	0.026	0.129
Latinx/Hispanic	-0.001	0.007	0.910
Multiracial/Other	0.020	0.012	0.077
Turnaround	-0.014	0.005	0.007**

Note. * $p < 0.05$ ** $p < 0.01$

The third analysis examining fifth grade attendance rates involved included an interaction term. This analysis included all students in the dataset and examined the main effects of attending a City Connects school for at least two years, the main effects of being suspended at least once, and interaction between these two variables. All control variables from the previous regression analyses were included. The overall model was significant $F(12, 11{,}280) = 33.69$, $p < 0.01$, $R^2 = 0.04$, indicating that the independent variables reliably predict the dependent variable and account for approximately 4% of the overall variance in attendance. The main effects in the moderation analysis indicate that City Connects has a non-significant positive association with attendance rates for students who were not suspended ($b = 0.003$, $p = 0.11$) and that being suspended at least once has a statistically significant negative association with attendance for students who did not get City Connects ($b = -0.017$, $p < 0.01$). The interaction effect was not statistically significant ($b = -0.003$, $p = 0.50$). The negative coefficient for the interaction effect indicates that City Connects has a slightly weaker positive effect on attendance rates for students who were suspended at least once, compared to students who were not suspended.

Table 32

Moderation Analysis- City Connects Status x Suspended Status and Attendance Rates

	b	SE	p
CCNX	0.003	0.002	0.110
Suspended	-0.017	0.002	<0.001**

CCNX x Suspended	-0.003	0.004	0.500
SPED	-0.012	0.001	<0.001**
ELL	<0.001	0.001	0.877
Lunch Status	-0.005	0.002	0.007**
Gender	<0.001	0.001	0.671
Race			
Black	-0.010	0.002	<0.001**
Asian	0.025	0.004	<0.001**
Latinx/Hispanic	-0.004	0.002	0.015*
Multiracial/Other	0.001	0.004	0.766
Turnaround	-0.005	0.002	0.030*

Note. * $p < 0.05$ ** $p < 0.01$

Research Question 3b: Suspensions

Next, a series of three analyses looking at fifth grade suspensions as the outcome variable were run to answer research question 3b. The analyses included a linear regression that included all students in the sample, a linear regression that included only students who had been suspended in grade K-4, and a moderation analysis examining the interaction between attending a City Connects school and being suspended at least once in grades K-4. Being suspended at least once in grades K-4 was utilized as an independent variable for this analysis instead of being suspended at least once in grades K-5 to address multicollinearity concerns with the dependent variable (suspensions in fifth grade). Each analysis included fifth grade suspensions (total number of suspensions a student received in fifth grade) as the outcome variable. Each model includes special education status, English language learner status, free/reduced-price lunch status, gender, race, and turnaround school as control variables.

The first analysis regressed fifth grade suspensions on to the City Connects treatment variable and included all suspended and non-suspended students in the sample. The data are

presented in Table 33. The overall model was significant, $F(10, 12{,}758) = 19.55$, $p < 0.001$, $R^2 = 0.02$, indicating that the independent variables reliably predict the dependent variable. However, the overall model only accounts for a small percentage (2%) of the overall variance in the suspensions. This indicates that a number of factors not included in the model are impacting students' fifth grade suspension rates. The analysis found that students who received City Connects for at least two years in elementary school had a slightly lower number of suspensions, compared to suspended students who never received City Connects in elementary school. This difference was small and did not reach statistical significance ($b = -0.01$, $p = 0.58$). Results indicate that special education students, students receiving free/reduced-price lunch, male students, and students who attended a turnaround school for at least one year had higher numbers of fifth grade suspensions, compared to their peers without these identities. Students who received English language supports had lower fifth grade suspensions, compared to their peers who did not get these supports.

Table 33

Linear Regression- City Connects Status and Suspensions with Student-Level Controls, All Students

	b	SE	p
CCNX	-0.01	0.01	0.58
SPED	0.07	0.01	<0.01**
ELL	-0.04	0.01	<0.01**
Lunch Status	0.06	0.01	<0.01**
Gender	0.06	0.01	<0.01**
Race			
Black	0.02	0.01	0.23
Asian	-0.04	0.03	0.17
Latinx/Hispanic	0.02	0.01	0.17

Multiracial/Other	0.03	0.03	0.24
Turnaround	0.04	0.01	<0.01**

Note. * $p < 0.05$ ** $p < 0.01$

The second analysis associated with research question 3b was identical to the previous model but included only students who had been suspended at least once between Kindergarten and 4th grade. The overall model was statistically significant, $F(10, 822) = 3.34$, $p < 0.01$, $R^2 = 0.04$. These data are presented in Table 34. This analysis found that students suspended in K-4 who received City Connects for at least two years in elementary school had slightly higher numbers of fifth grade suspensions, compared to suspended students who never received City Connects in K-4. The difference did not reach statistical significance ($b = 0.14$, $p = 0.09$). Attending a turnaround school appears to be associated with slightly lower suspension totals in fifth grade, compared to students who did not attend a turnaround school. While this does not align with the literature on student outcomes and behaviors in turnaround schools (Steinberg et al., 2019), it does align with the findings from research question 1 of this dissertation. That study found that in the district of interest, school-level suspension rates significantly decreased in the year that a school was designated turnaround and maintained those lower levels in following years.

Table 34

Linear Regression- City Connects Status and Suspensions with Student-Level Controls, Suspended Students

	b	SE	p
CCNX	0.14	0.08	0.09
SPED	0.23	0.07	0.01*
ELL	-0.30	0.09	0.01*
Lunch Status	0.08	0.21	0.69

Gender	-0.01	0.01	0.94
Race			
Black	-0.07	0.14	0.63
Asian	0.19	0.44	0.66
Latinx/Hispanic	0.13	0.13	0.31
Multiracial/Other	0.35	0.24	0.14
Turnaround	-0.04	0.08	0.65

Note. * $p < 0.05$ ** $p < 0.01$

The third analysis examining fifth grade suspensions included an interaction term. This analysis included all students in the dataset and examined the main effects of attending a City Connects school for at least two years, the main effects of being suspended at least once in K-4, and interaction between these two variables. All control variables from the previous regression analyses were included. The overall model was significant $F(12, 12{,}756) = 47.63$, $p < 0.01$, $R^2 = 0.04$, indicating that the independent variables reliably predict the dependent variable and account for approximately 4% of the overall variance in suspension. The main effects in the moderation analysis indicate that City Connects has a significant negative association with fifth grade suspension rates for students who were not suspended in K-4 ($b = -0.02$, $p = 0.04$) and that being suspended at least once in K-4 has a statistically significant negative association with fifth grade suspensions for students who did not get City Connects ($b = 0.24$, $p < 0.01$). The interaction effect was statistically significant ($b = 0.13$, $p < 0.01$). The positive coefficient for the interaction effect indicates that City Connects is associated with higher fifth grade suspension rates for students who were suspended at least once in K-4, compared to students who were not suspended in K-4. This finding did not align with the hypothesis for research question 3b, and is discussed in more detail in chapter 5.

Table 35

Moderation Analysis- City Connects Status x Suspended Status and Suspension Rates

	Coefficient	Std. Error	p
CCNX	-0.02	0.01	0.04*
Suspended	0.24	0.02	<0.01**
CCNX x Suspended	0.13	0.03	<0.01**
SPED	0.05	0.01	<0.01**
ELL	-0.03	0.01	<0.01**
Lunch Status	-0.05	0.01	<0.01**
Gender	0.04	0.01	<0.01**
Race			
Black	0.01	0.01	0.67
Asian	-0.04	0.03	0.17
Latinx/Hispanic	0.01	0.01	0.37
Multiracial/Other	0.02	0.02	0.32
Turnaround	0.02	0.01	0.09

Note. * $p < 0.05$ ** $p < 0.01$

Following the main analyses for research aim 3b, a robustness check was conducted. This check involved re-running the models using a zero-inflated Poisson regression to account for the fact that the majority of students in the dataset were not suspended in fifth grade. Overall, these findings generally aligned with findings from analyses using OLS regression. There were some differences and nuances. For the analyses that included students who had been suspended in grades K-4, the zero-inflated Poisson regression indicated slightly more positive fifth grade suspension outcomes for students who received City Connects, compared to previous analyses. The output comparing zeroes (no suspensions) to all other values (one or more suspensions) showed that students who attended a City Connects school for at least two years were slightly (non-significantly) more likely to receive zero suspensions in fifth grade, compared to students who were suspended at least once in K-4 and never received City Connects during that time.

Research Aim 3 Summary. The purpose of research aim 3 was to examine the fifth grade outcomes of students who had been suspended in elementary school. The hypotheses for research question 3-3a, that attending a City Connects school would be associated with better performance on standardized tests and better attendance in fifth grade, among students who were suspended in elementary school, were partially confirmed. Overall, among students who were suspended in elementary school, receiving City Connect for at least two years was associated with higher fifth grade math scores. City Connects was also associated with slightly better (non-significant) fifth grade attendance and ELA scores. The moderation analyses also indicated a slight (non-significant) protective effect of City Connects among suspended students in terms of their academic performance. The hypothesis for research question 3b, that attending a City Connects school would be associated with lower fifth grade suspensions, among students who had been suspended in K-4, was not confirmed. While the study found that among students who had not been suspended in K-4, City Connects was associated with a lower number of suspensions in fifth grade, among students who had been suspended in K-4, City Connects was associated with higher suspension rates. These findings and their implications are discussed further in Chapter 5.

Chapter 5: Discussion

This chapter includes a review and discussion of findings related to the three research questions. It begins with higher-level highlights from all analyses. Findings are summarized and contextualized in the literature. Practice implications, limitations of the current study, and recommendations for future research are discussed.

Highlights

The findings from this study align with the well-documented association between suspensions and poorer student outcomes. However, this study also provides evidence that receiving City Connects is associated with better fifth grade academic performance overall and among students who were suspended during elementary school. Previous studies on the effectiveness of City Connects show a positive association between City Connects and academic outcomes among marginalized students. In this case, the association between receiving City Connects and having better academic outcomes among suspended students may be partially driven by the more intensive services and supports suspended students are referred to in City Connects schools, via higher tier of risk assignment and ISR referrals. As discussed in the findings for research aim 2, suspended students in elementary school and middle school are more likely to be referred for ISRs and more likely to be placed into higher tiers of risk, compared to non-suspended students. Designation in a higher tier of risk and a referral for an ISR show that staff in City Connects schools are identifying many students who have been suspended or who will be suspended as requiring additional supports. This may help keep these students engaged in school and performing well academically, despite their suspension. The study also found that receiving City Connects was non-significantly associated with higher attendance rates among all students and suspended students. City Connects' evidence of efficacy is most robust in terms of

its impact on students' academic outcomes, which may explain the weaker positive association with attendance.

Findings were mixed in terms of City Connects' impact on school-level and student-level suspension rates and warrant more in-depth exploration. While City Connects schools appeared to have lower suspension rates than similar schools across the state, decreases in suspension rates occurred when these City Connects schools were designated turnaround or 'consistently underperforming', the year before City Connects was implemented. The current study suggests that statewide policy changes may play a large role in driving school-level suspension rates. At the student-level, City Connects is associated with lower fifth grade suspension rates among students who were never previously suspended in elementary school. However, among students who were suspended in elementary school prior to fifth grade, City Connects had a non-significant association with higher fifth grade suspension rates. This finding indicates that City Connects may be protective for students with less severe behavioral challenges in terms of reducing their likelihood of being suspended, but less so for students with the most severe behavioral challenges. There are two likely factors driving this finding: 1) City Connects is implemented primarily in underperforming schools serving students with complex needs who are disproportionately likely to be suspended from school, which likely impacts suspension rates and 2) City Connects was not developed to directly decrease the use of suspensions in schools. Because of this, it may be beneficial for City Connects to be implemented in conjunction with interventions that specifically target suspension rates and/or broader policy changes that focus on decreasing suspensions.

Interpretation of Findings

The demographic characteristics of the students included in this study cannot be separated from the interpretation of the results. The literature on suspensions indicates that the majority of students in this study are at a higher risk of being suspended and simultaneously experiencing more negative outcomes as a result of being suspended due to their marginalized and minoritized identities (Anyon et al., 2014; Welsh & Little, 2018; Noltemeyer et al., 2015; Wolf & Kupchik, 2017). This sample is predominantly Latinx/Hispanic or Black/African American. Students in the sample live in under-resourced areas, attend high-poverty schools, and the majority receive free or reduced-price lunch at their schools. Many of them attend schools that were designated turnaround or consistently underperforming. The sample also contains a relatively large number of immigrant students and students who are English language learners. Many schools in the sample serve higher numbers of students who are struggling academically and scoring below grade level on standardized assessments, compared to other schools in the same state. Overall, these trends were most pronounced in the City Connects schools, compared to similar schools located in the same district. City Connects is generally implemented in designated turnaround schools and schools that serve high proportions of students who are disadvantaged and marginalized.

The literature on the negative impacts of suspensions and the school-to-prison pipeline consistently demonstrates that disadvantaged students, Latinx/Hispanic students, and Black/African American students are suspended at higher rates than their peers (Anyon et al., 2014; Erb-Downward & Blakeslee, 2021; Little & Welsh, 2019). The literature also clearly links suspensions to negative student outcomes in terms of higher rates of future misbehavior, justice system involvement, and school dropout as well as lower academic achievement, lower school connectedness (Anderson et al., 2019; Mittleman, 2018; Barnes & Motz, 2018). Taken together,

this literature indicates that the majority of the students included in the sample for this dissertation are at a higher risk of being suspended, as well as a higher risk of experiencing negative outcomes associated with suspensions.

Due to the relative homogeneity of the sample (predominantly Latinx students from economically disadvantaged families), the findings might not be generalizable to other populations of students. Results from the same analyses might look different in school districts serving higher proportions of students with other racial/ethnic identities or more privilege and advantages.

In addition to the demographic characteristics of the sample, the challenges associated with studying exclusionary discipline need to be considered. There are discrepancies in how schools report suspensions and other exclusionary discipline practices (Mathewson, 2023; Wood et al., 2021). Some of these differences in reporting norms are driven by a desire to report low rates of exclusionary discipline, due to pressure from district and state officials (Mathewson, 2023). For example, some schools may report an instance where parents are told not to bring their child to school the next day due to a behavioral incident as an absence, while others may report it as an out-of-school suspension (Wood et al., 2021). Because of this, it can be challenging to accurately compare suspension rates across different schools.

Research Aim 1

The analyses investigating research aim 1 do not provide conclusive evidence that City Connects alone appears to significantly impact rates at which students are suspended. Instead, these analyses provide evidence that being designated as a turnaround school may significantly impact suspension rates, particularly in the district of interest. Specifically, schools that were designated turnaround and received City Connects appeared to have greater decreases in

suspension counts and suspension rates, compared to similar schools that did not have City Connects implemented. However, the timing of the decreases occurred the year the treatment schools were designated turnaround, one year prior to City Connects and other state mandated interventions, such as PBIS, being fully implemented. This finding indicates that factors other than City Connects drove the significant drops in suspension rates and counts. However, having City Connects in one's school appeared to help hold these reductions in suspension rates over time. The results indicate that City Connects might help facilitate drops in suspension rates, particularly when accompanied by state oversight, policy changes, or interventions more specifically aimed at reducing suspension rates. The findings indicate that this line of research should be investigated further using a larger sample that includes non-turnaround City Connects schools.

The turnaround designation occurs following a school's consistent underperformance on statewide standardized tests. These low-performing schools are required to receive state funding and a variety of supports aimed at rapidly improving students' academic achievement. For the schools involved in this study, the turnaround designation began after the passage of a state law in 2010 that created a new school accountability system. Under this system, beginning in April 2010, all schools were classified as level 1 (highest performing), level 2, level 3, level 4 (eligible for state assistance through "school redesign grants"), or level 5 (lowest performing). Immediately after this new policy was put into place, the five treatment schools in this study were under a great deal of scrutiny and pressure to improve their performance. These schools were placed into level 4 in the 2010-11 school year and consequently were required to implement interventions, reform efforts, and policy changes, such as replacing staff, expanding opportunities for students, and introducing new strategies to improve instructional practices. The

finding that the suspension rate dropped significantly the year prior to City Connects intervention is indicative of the efforts that district staff and principals took to improve the learning environment for students in the lowest performing schools as quickly as possible. One of their approaches to do this was by implementing City Connects in 2011-12.

Previous analyses show that the implementation of City Connects in designated turnaround schools quickly improved students' academic performance, compared to other turnaround schools in the same state (City Connects, 2022; City Connects, 2016). The findings from research aim 1 of this dissertation are converge with the conclusions of these studies, showing that turnaround schools receiving City Connects decreased their suspension rates more quickly than other turnaround schools. However, because of the timing, the discipline rate decreases cannot be attributed solely to City Connects. Three to five years after suspension rates improved in City Connects schools, other turnaround schools saw similar improvements and reached slightly higher suspension rates than City Connects schools.

Compared to similar non-turnaround schools in the same district, the schools in the City Connects group saw a significantly greater decrease in suspension rates and suspension counts one year prior to City Connects implementation. After City Connects was implemented in the 2011-12 school year, the City Connects schools maintained these lower suspension rates, while the non-turnaround comparison schools did not see significant decreases in suspension rates. This provides further evidence that the pressure the City Connects schools faced due to being labeled consistently underperforming and in need of assistance from the state contributed to the decrease in suspension rates that occurred the year prior to City Connects implementation. However, due to suspension rates remaining relatively low, it appears that City Connects and

state-mandated interventions, such as PBIS, helped to keep these lower suspension rates steady and comparable to suspension rates in non-turnaround schools in the district.

Research Aim 2

Results from the analyses associated with research aim 2 indicate that students in City Connects elementary and middle schools who are suspended in a given school year are generally assigned to a higher tier of risk (Tier 3) and are more likely to receive an ISR than students who were not suspended. Test statistics indicated a weaker association at the K-5 level, but the data reported in the chi-square tables showed practical significance. For example, 60% of suspended students were placed into Tier 3, while only 14% of non-suspended students were placed into Tier 3. Similarly, 20% of K-5 students received an ISR while only 8% of non-suspended students received one. This indicates that at the elementary school level, students who are suspended in a given year are more than twice as likely to receive an ISR that year and are four times as likely to be placed into Tier 3. Similar patterns of findings emerged for 6-8 students.

Overall, these results confirmed the hypotheses within research aim 2, that suspended students were more likely to be assigned to Tier 2b or 3 or to be referred to an ISR. The slightly weaker associations at the K-5 level may be due in part to the vast majority of these ISRs being referred for primarily academic reasons. ISRs can be referred to students for any reason (i.e., academic, physical health, social-emotional behavioral, or family system challenges). At the middle school level ISR referral reasons were distributed more evenly across developmental domains (e.g., family, social-emotional/behavioral, academic, health), but the majority of ISRs were also referred for academic reasons. These findings provide evidence that tier may be a more holistic indicator of risk and more inclusive of students' behaviors, whereas ISR referrals may primarily reflect academic challenges. Additionally, a much higher proportion of students in the

sample were suspended in a given school year at the middle school level, compared to elementary school. This finding is consistent with the literature on suspension rates in elementary and middle school (Arcia, 2007). Higher suspension rates in middle school may have contributed to the stronger associations between suspensions and tier of risk/ISRs at the 6-8 level, compared to the K-5 level.

These findings indicate that in City Connects schools, students who are suspended in a given school year are generally identified as having more complex needs and requiring more services and supports than their peers who are not suspended over the course of that school year. Tiering generally occurs at the start of the school year and ISRs occur throughout the year, before many students in the sample were suspended. These findings indicate that staff at City Connects schools were acutely aware of students' needs and assigned higher tiers to students who would later be suspended during that school year. Students with complex needs and trauma histories are more likely to be suspended from school (Erb-Downward & Blakeslee, 2021; Bell et al., 2021). The results from research aim 2 indicate that these students are less likely to fall through the cracks in City Connects schools. While they may have behavioral challenges, their needs are more likely to be understood and addressed by school staff.

Because of the many negative outcomes associated with suspensions, this type of identification – whether it occurs before or after a suspension – is critical to help get students on a healthier developmental trajectory. However, several suspended students were assigned to Tier 1 or Tier 2a or were not referred to an ISR. Future studies should investigate how City Connects practitioners take a student's suspension history and/or risk of being suspended into consideration when they assign tiers of risk or refer students to an ISR.

Research Aim 3

Overall, the hypotheses for research questions 3-3b were partially confirmed. Receiving City Connects for at least two years was associated with higher fifth grade math and ELA scores, when suspended and non-suspended elementary school students were included in the sample. Receiving City Connects for at least two years was non-significantly associated with slightly higher fifth grade attendance and slightly lower fifth grade suspensions, when suspended and non-suspended students were included in the sample. Among students who were suspended at least once in K-5, students who received City Connects for at least two years had significantly higher math scores in fifth grade and slightly (non-significantly) higher fifth grade ELA scores and attendance rates, compared to suspended students who never got City Connects. The moderation analysis associated with research question 3 revealed that City Connects had a small, non-significant protective effect on suspended students' fifth grade math and ELA scores. Students who were suspended at least once in K-5 saw slightly greater benefits in terms of their fifth grade math and ELA scores, compared to non-suspended students.

The moderation analysis associated with research question 3a revealed that City Connects has a weak, non-significant negative effect on suspended students' attendance. While City Connects was associated with slightly better fifth grade attendance rates for suspended and non-suspended students, non-suspended students benefitted slightly more from City Connects in terms of attendance, compared to suspended students. It is important to note that the models associated with research question 3a accounted for a relatively small amount of variance in students' attendance. This indicates that factors not included in the model have a large impact on students' attendance rates.

Among students who were suspended at least once between Kindergarten and fourth grade, students who received City Connects for at least two years had slightly (non-significantly)

higher suspension rates in fifth grade. However, students who had not been suspended in K-4 and received City Connects for at least two years had lower suspension rates in fifth grade, compared to students who didn't get City Connects. The moderation analysis associated with research question 3b found that there was a significant positive interaction between being suspended at least once in K-4 and receiving City Connects for at least two years in elementary school. This interaction indicated that, in terms of fifth grade suspension rates, City Connects was significantly more protective for students who had not been suspended in K-4, compared to students who had previously been suspended. This provides evidence that City Connects may be associated with lower suspensions for students with less severe behavioral difficulties, but not for students with the most severe behavioral difficulties, whom City Connects schools are most likely to be serving. These findings indicate that City Connects might be reducing suspensions primarily for students "at the margins"; students who have less severe behavioral difficulties and in some school contexts, might never be suspended and in other contexts, might be suspended. For other students with the most severe behavioral challenges, who would likely be suspended at some point in most contexts, City Connects does not appear to have the same protective effect.

Compared to other schools in the district of interest, City Connects serves a high proportion of vulnerable students who are greatly impacted by structural disadvantages and inequality, which can lead to a higher likelihood of being suspended (Little & Welsh, 2019; Gregory & Skiba, 2019). As shown in Table 9, students in the district of interest who attended City Connects schools were more likely to be Latinx/Hispanic, receive English language instruction, qualify for free/reduced-price lunch, and/or attend a turnaround school. Consequently, students in the City Connects group are more likely to experience implicit/explicit biases and/or out-of-school factors that make it more difficult to regulate their behaviors (e.g.,

hunger, homelessness, lack of knowledge of 'middle class hidden rules') (Erb-Downward & Blakeslee, 2021; Sullivan et al., 2013; Dobbins & Draper-Rodriguez, 2013; Little & Welsh, 2019).

The analyses from research question 3 yield results that are correlational, not causal, and should be interpreted with caution. Students were not randomly assigned to City Connects schools or non-City Connects schools, and a number of factors, including other school- and classroom-based interventions, contribute greatly to students' performance on the outcomes of interest. However, the results do indicate that the City Connects intervention may be particularly helpful in supporting the learning and achievement of an often overlooked and marginalized group: suspended students attending high poverty schools.

Implications for Practice

The findings from this study provide evidence that ISS models can promote more positive outcomes for suspended students, particularly in terms of academics. Given the literature on the myriad of negative long-term outcomes associated with suspensions and the mediating role that academic achievement plays in those associations, this is an important and interesting finding that warrants further investigation and action (Gregory et al., 2010; Skiba et al., 2014). This study takes a novel approach to solving the issues associated with exclusionary discipline by considering potential protective and promotive factors for suspended students. Processes like holistic tiering, matching students to tailored supports and services, and intensive, collaborative student reviews might be able to disrupt some of the negative outcomes associated with suspensions. School staff and policymakers who serve students who are disproportionately likely to be suspended and experience negative outcomes associated with suspensions should consider

implementing evidence-backed Integrated Student Support models to ensure that these students are not becoming disengaged or falling behind academically.

The findings also suggest that Integrated Student Support models have the potential to decrease the likelihood of suspensions for students with less severe behavioral challenges in high poverty schools. Because City Connects was not directly developed to decrease the use of suspensions or other exclusionary discipline in schools, it is worth further investigating the impact that Integrated Student Support models can have on suspension rates when they are paired with interventions focused on reducing suspension rates. PBIS is one such example that has emerging evidence of efficacy in terms of decreasing suspension rates (Gage et al., 2018)

This study also provides evidence of how important state and district-level policy changes and reform efforts are on suspension rates, even when they are focused primarily on shifting academic outcomes. Oversight from state and district officials is an important factor that can drive lower disciplinary rates. However, these approaches should be implemented with caution and should include interventions that provide educators with effective alternative approaches to handling student misbehavior so that changes to practices occur and exclusionary discipline practices are not simply reported differently (Mathewson, 2023; Wood et al., 2021).

Findings indicate that suspended students are not always considered to be at a high-risk level, especially in elementary school. Because of the overwhelming evidence that suspensions lead to negative outcomes, it is important for practitioners to consider this factor when thinking about students' risk levels and referring them to services.

Limitations

This study included several central limitations that impact the interpretation of the findings and its generalizability. All of the schools that City Connects entered in the district

being investigated were commissioner designated “chronically underperforming” schools during at least the first year of City Connects implementation. City Connects, along with several other interventions (e.g., Positive Behavioral Interventions and Supports), were implemented as focused, targeted supports to help address the identified issues in these schools. This means that any school-level differences in suspension rates between City Connects and non-City Connects schools cannot be fully explained by the implementation of the City Connects model, as the impact of the other interventions being implemented cannot be ruled out. For research aim 3, at the student-level, approximately two thirds of students who received City Connects for at least two years also attended a turnaround school for at least one year. Attending a turnaround school for at least one year was included in the regression and moderation analyses as a control variable, but this may not have entirely captured the negative impact of attending a turnaround school. For example, teachers in the turnaround schools in this district may be experiencing more significant or severe student misbehaviors and/or have less support to handle student misbehaviors, compared to teachers in schools that were not considered chronically underperforming. Additionally, the majority of students in the sample in this study identified as Latinx and were eligible for free/reduced-price lunch. While this is an important population to include in research on exclusionary discipline, this sample was not fully representative of the general U.S. population.

This dissertation examined school-level and student-level suspensions in the analyses. It is challenging to study these variables quantitatively, particularly as outcome variables, due to discrepancies in how schools and districts record and report discipline data. Schools are under a great deal of scrutiny and pressure from federal and state government to keep suspension rates low. This can lead some schools to record an instance where a student is removed from the

classroom and parents are told not to bring their child to school the next day as an absence, rather than an out-of-school suspension (Wood et al., 2021). These differences in recording practices can lead some schools to outwardly appear to use exclusionary discipline very infrequently, when that is not the full picture in practice.

Another important limitation of the study is that the data collected by the SSIS system, as well as the suspension data collected by schools, is not time-stamped. In other words, these data are recorded and reported for each school year, but it is not known at exactly what point(s) in the school year students were assigned to a particular tier of risk, referred for an ISR, or suspended. Generally, students are assigned to a tier of risk during the first months of the school year, but this is not always exact due to factors out of the control of the coordinator such as staff turnover and students transferring to the school mid-year. Students are typically also referred for an ISR during the first part of the school year, but they can be referred at any point throughout the year based on any shifts in their needs or situation. This limits the interpretation of the findings from research aim 2. It is not known if the City Connects model is responding to suspended students with additional supports, such as the ISR or placement into a high tier of risk, or if the model is identifying students who are likely to be suspended when they place students into a higher tier of risk or assign them to an ISR. However, findings from research aim 2 do illuminate general patterns in ISR referrals and tiering among suspended and non-suspended students.

It is also important to note that SSIS was developed as a tool for practitioners – City Connects coordinators – not as a data collection tool for researchers. The primary purpose of SSIS is to support practitioners' ability to effectively serve their students by documenting their strengths and needs, developing tailored plans, and matching them with appropriate services. Its use as a tool in research studies is secondary, meaning there are some limitations in its use in this

role. Coordinators use this tool to track and document their plans for each student and there may be some person-to-person variation in how they do this. Coordinators all receive the same professional development modules and information to ensure that the model is implemented with fidelity, but there may be some variation in how they use the SSIS system. This impacts how coordinators input tiering data and data about the primary reason a student is referred for an ISR.

Like many longitudinal studies using student-level data collected from schools, there was missing data for analyses associated with the third research question. Some of this data was missing due to students who left the district of interest after just one or two years and could not be included in the study sample. For example, students who attended school in the district of interest from kindergarten through fourth grade but transferred to another district before fifth grade could not be included in the study because their fifth-grade outcomes were not available in the dataset. While there was very little data missing on several of the variables of interest (e.g., less than 2% for suspensions and attendance), standardized test data was missing at higher levels (13%). Due to the larger sample size and the fact that the data was missing approximately at random, listwise deletion was used. However, this amount of missing data does still pose a limitation to the current study. Further, one year of standardized test data (2014-15 academic year) could not be included in this study. During this year, schools had the option of administering one of two different standardized tests to students that had different scales, scoring systems, and administration modalities (paper/pen vs. on a computer). The standardized test scores from this year could not be fully standardized with scores from other years and, as a result, were removed from this study. Removing these data allowed standardized test scores to be accurately standardized across years and grade levels. The relatively large sample of student data

taken from eight years of archival data helped allow for the study to capture "big picture" trends and associations in the data that warrant further investigation.

This analysis used to answer the third research question focused on student-level control variables (e.g., race, gender, special education status) but did not fully control for school-level variables. Including these variables in a hierarchical linear model would be an important next step to rule out school-level differences (e.g., student-teacher ratio, class sizes). One school-level variable—turnaround school status – was included in the analyses to account for some of the most significant school-level differences.

Recommendations for Future Research

Three key future directions that emerge from the study include: 1) validating the current findings through expanding the sample/including other populations, 2) including a qualitative component to the study to develop deeper understanding of the findings, and 3) extending the findings through more sophisticated models that control for school-level variables and intervention/suspension timing.

As noted in previous chapters, each analysis focused on one district of interest in which several schools were implementing City Connects. This study should be replicated using a larger, more diverse sample to validate the findings. For the school-level difference-in-differences analysis in particular, a treatment sample with more geographic diversity that includes turnaround and non-turnaround schools should be used to parse out the effect of being designated turnaround and the effect of the City Connects intervention on suspension rates.

A qualitative component could add a great deal to each research aim in this study. Interviews with teachers, district leaders, administrators, counselors, and City Connects coordinators could help elucidate how school staff make decisions about student behavioral issues. At the school-

level, interviews with district leaders and administrators could inform the impact of policy on suspension rates and provide insight about how suspensions are recorded. Within City Connects schools, interviews with teachers and coordinators could inform how the whole child information collected in Whole Class Reviews impacts their conceptualization of students' behavioral challenges. These interviews could also provide deeper information about how suspensions play a role in assigning tiers of risk and referring students for ISRs. Finally, interviews with teachers and school counselors in City Connects and non-City Connects schools could generate more nuance about any differences in how students with behavioral challenges and suspended students are supported.

Future studies examining the potential protective nature of City Connects for suspended students should utilize more complex statistical methods that control for school-level effects and cohort effects, such as multi-level modeling. These analyses could help parse out the impact of particular schools on student outcomes compared to the impact of City Connects on student outcomes. Future studies would also benefit from using more exact information the timing of students' suspensions over the course of the school year and the timing of when they received City Connects. This could help identify whether City Connects has stronger effects on outcomes when a child receives it early in elementary school, around the time of their suspension, or later in elementary school. Regardless of how it is studied, an understanding of how processes within ISS models and City Connects can be protective and promotive for students who have been suspended or who are at risk of being suspended is a critical step to help address a complex social problem.

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