The Impact of the Juvenile Incarceration System and Protective Factors that Mitigate Offending

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Abstract

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Extant literature suggests that involvement with the juvenile incarceration system can predict negative outcomes for young people; however, there has been limited research exploring the association between involvement with the carceral system and offending behavior over time. Utilizing Disability Critical Race Theory and employing QuantCrit as a methodological strategy, the present study aims to expand the definition of adverse childhood experiences to include juvenile incarceration system involvement and to provide information on how exposure to the system manifests differently among young people with multiple marginalized identities. Considering that the school setting has been found to promote success amongst youth with incarceration histories, school engagement was investigated as a potential protective factor for youth against ongoing delinquent behavior. Using data drawn from the Pathways to Desistance Study, a series of generalized linear mixed-effects models analyzed the variables of racial/ethnic identity, gender identity, disability status, detention facility placement, and school engagement and their relationship to two types of youth-reported offending behavior (overall offending and aggressive offending) over time. The results revealed a significant effect for both offending behavior types over time. Main effects were present for gender identity and disability status for both offending types, and racial/ethnic identity was found to have a significant effect when observing aggressive offenses. Similar rates of aggressive offenses were reported by youth

across system placements. Youth who endorsed higher engagement with school reported lower offense frequencies, though opportunity for ongoing school engagement was limited for participating youth.

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CHAPTER ONE: INTRODUCTION

Overview

The United States has one of the largest incarceration populations in the world (Walmsley, 2015). Extant literature demonstrates that the trend of mass incarceration does not begin in adulthood; rather, the trajectory toward criminalization begins with removing multiply-marginalized young people from school (Kim et al., 2010; Bahena et al., 2012). Despite the juvenile incarceration system originally being designed as a place to rehabilitate children and adolescents who have committed crimes, a significant body of research suggests involvement in the system impacts youth long term. Studies have confirmed that out-of-home placement within the carceral system fails to meet the developmental needs of youth, is limited in its ability to provide appropriate rehabilitation, and can predict negative outcomes for youth related to their mental and physical well-being, education, deeper system involvement, future employment, and recidivism (Barnert et al., 2017; Bettman & Jasperson, 2009; Burrell, 2013; Dmitrieva et al., 2012; Lambie & Randell, 2013; Leiber et al., 2009; McGuire, 2002; Mendel, 2014; Rodriguez, 2010; Schwalbe et al., 2009; Steiner, 2009). Trauma-informed approaches that capitalize on protective factors, such as strong bonds with teachers and school engagement, may build resiliency amongst youth (Yule et al., 2019), and may be a promising direction for prevention and intervention service provision that mitigates system placement and improves future outcomes for young people.

Background

Although juvenile incarceration rates have steadily declined over the past two decades, the U.S. juvenile incarceration system still interfaces with more than 1.2 million youth annually, of whom nearly 730,000 are arrested and approximately 744,500 cases are processed through

juvenile courts (Hockenberry & Puzzanchera, 2020). Despite the overall reduction, there remain substantial disparities in who is represented within the incarceration system. Race/ethnicity and disability are deeply linked to the criminalization of young people, and this trajectory toward criminalization begins with removing multiply marginalized young people from school (Bahena et al., 2012; Kim et al., 2010). As Ferri and Bacon (2011) contend, public institutions judge the bodies and minds of children based on socially constructed ideas of normalcy or typical development, a reference point which positions some children as disabled and requiring remediation or intervention. For children of color, a tension exists between the misuse of special education identification, placement, and discipline as a means of school exclusion, and another equally troubling phenomenon, the failure to adequately address the support needs of students of color through meaningful placement, pedagogies, and curricula (Annamma & Morrison, 2018). Both the misuse of special education to exclude students of color and the failure to provide them with high-quality education, related services, and procedural protections likely contributes to the more general trend in which children of color with disabilities are disproportionately punished, excluded, and, ultimately, incarcerated. The result is an incarcerated population characterized by an overrepresentation of youth of color and youth with disabilities (National Council on Disability, 2015; Sickmund et al., 2017).

While facilities within the juvenile carceral system vary considerably in their structure and programming, researchers, court rulings, and policies have concluded that residential facilities and their programming are generally responsible for youths' safety, education, and health (Austin et al., 2000; Estrada & Marksamer, 2006; Twomey, 2008). Yet many residential facilities focus on punishment and containment of youth, and rely on confinement and isolation, security features, mechanical restraints, and other discipline practices to maintain safety (Green-

Hennessey & Hennessey, 2015; Hockenberry & Sladky, 2018; Puzzanchera et al., 2018). Several other studies have confirmed that out-of-home placement within the carceral system fails to meet the developmental needs of youth, is limited in its ability to provide appropriate rehabilitation, and can predict negative outcomes for youth related to their mental and physical well-being, education, deeper system involvement, future employment, and recidivism (Barnert et al., 2017; Bettman & Jasperson, 2009; Burrell, 2013; Dmitrieva et al., 2012; Lambie & Randell, 2013; Leiber et al., 2009; McGuire, 2002; Mendel, 2014; Rodriguez, 2010; Schwalbe et al., 2009; Steiner, 2009). The punitive model utilized by the system prioritizes control and behavior management over education and support for detained children, and it relies on rhetoric and practices that seek to assimilate disabled youth of color into dominant white, nondisabled norms (Annamma, 2018; Broderick & Leonardo, 2016; Dudley-Marling & Burns, 2014). For multiply marginalized disabled youth of color, punishment becomes the primary socializing agent experienced within these institutions that not only influences their behavior, but also erodes positive expectations as dignity and opportunities are stripped away.

The term ‘juvenile justice system’ is used as shorthand for the nexus of public law enforcement agencies governing the lives of young people. These agencies include municipal and county police, sheriffs, and state troopers; federal officials of the Immigration and Customs Enforcement (ICE), Drug Enforcement Administration (DEA), Customs and Border Patrol (CBP), and Federal Bureau of Investigation (FBI); and prosecutors, judges, and prison officials. Also included are private security officers who possess limited policing authority. Throughout this work, this author will be following the guidance of Mogul, Ritchie, and Whitlock (2011) in consciously choosing to avoid using this common phrase ‘juvenile justice system.’ As Mogul et al. (2011) note, this choice:

> …reflects an acknowledgement of the reality that this system has not produced anything remotely approximating justice for the vast majority of people in the U.S. – particularly for people of color, poor people, immigrants, and the queer community – since its inception, but rather bears major responsibility for the continued institutionalization of severe, persistent, and seemingly intractable forms of violence and inequality. (p. xx)

The present study aims to illuminate interlocking systems of oppression that manifest in the juvenile incarceration system's standards and processes. Therefore, the term "juvenile incarceration system," and other terms that link to incarceration such as jails and prisons, carceral or penal system, etc., as opposed to juvenile justice, will be used intentionally throughout this work.

Problem Statement

Despite the juvenile incarceration system originally being established as a place to rehabilitate children and adolescents who have committed crimes, a significant body of research suggests involvement in the system has harmful effects and actually *increases* the risk for later mental and behavioral health problems (Dishion et al., 2001; Loughran et al., 2009; Petitclerc et al., 2013). The extensive and severe outcomes associated with system involvement emphasize the importance of investigating factors that might influence the development and maintenance of problem behaviors and delinquency. Multiple risk factors have been identified in the literature, yet one etiological factor that is consistently associated with behavioral health problems is adverse childhood experiences (ACEs; Felitti et al., 1998; Hunt et al., 2017). ACEs are defined as stressful and potentially traumatic experiences that occur during development and include experiences such as abuse, neglect, exposure to violence, having a primary caregiver who is incarcerated and/or has mental health problems and/or substance use problems. ACEs also

include community-level adverse experiences, such as discrimination, bullying, and/or foster care placement (Forke-Young, 2016). In general, any experience that might undermine a child's sense of safety, stability, or attachment can be considered an adverse childhood experience (Center for Disease Control and Prevention, 2019).

While experiencing ACEs has been documented as a common pathway into system involvement, no studies to date have identified involvement with the juvenile incarceration system as an adverse childhood experience. ACEs "have been identified as a key risk factor associated with a wide range of negative life outcomes" (Wolff et al., 2018, p. 2279). Young people with a history of childhood traumas are more likely to develop internalizing and externalizing behaviors, to include problem behavior and juvenile delinquency (Fox et al., 2015). Similarly, young people who have spent their formative years imprisoned face a myriad of negative outcomes.

System-involved youth are at greater risk for underdeveloped psychological, emotional, social, and general life skills and relationships than that of their non-incarcerated peers (Aizer & Doyle, 2013). The current model of punishment and containment of youth utilized by many residential facilities across the U.S. exacerbates youths' existing mental health problems (Wasserman et al., 2010) and contributes to recidivism rates for many reasons (Office of Juvenile Justice and Delinquency Prevention, 2017a). Longer incarceration stays are related to a deterioration of social support after community reentry for young people (Pettus-Davis et al., 2017). Many researchers who have studied the effect of the incarceration system on educational outcomes have concluded that the system's response to delinquent behavior is likely contributing to negative educational outcomes as well (Aizer & Doyle, 2015; Eren & Mocan, 2017; Kirk & Sampson, 2013; Robinson et al., 2017), including failure to meet grade level standards for

academic success and increased school dropout. These and other negative consequences have been found to be associated with other ACEs as well, and are thought to be the result of the negative impact that chronic stress has on the development of young people (Luby et al., 2019; National Child Traumatic Stress Network, nd). The current juvenile incarceration system model is to the detriment of the population of system-involved youth.

> …it is shortsighted at best, and negligent at worst, to ignore the impact of short-term removal on youthful offenders and believe that short-term facilities are simply a 'time-out' from the youth's normal development. (Burell & Moeser, 2014, p. 652)

Incarcerated youth experience significant disruptions as they are removed from homes, schools, and communities to enter the carceral system. Therefore, investigating the impact that placements within the system have on young people seems important.

Research often neglects to define ACEs when examining physical, psychological, or behavioral outcomes. While a nexus has been identified between traumatic childhood experiences and behavioral health problems, the outcomes discussed tend to group ACE constructs without defining how each trauma may have impacted an individual (Fox, 2017; Reid, 2018), including juvenile offending. Investigating out-of-home placement within the juvenile incarceration system was chosen to fill the gaps in research to expand the definition of trauma to include system involvement, and to measure its impact on juvenile behavior. This research is needed to help community service providers, schools, juvenile courts, and law enforcement to make informed decisions that address the specific needs of young people and that mitigate incarceration facility placement.

Research on resilience has identified a long list of protective factors that are associated with better outcomes for young people (Center for Disease Control and Prevention, 2018).

Identifying factors that have strong empirical support for promoting resilience would be valuable for informing prevention efforts and public health policy for guiding placement decisions for adjudicated youth. The aim of the present study is to assess the empirical evidence on school engagement as a protective factor against ongoing offending for youth with a history of system involvement. Support for school engagement may offer one potential avenue for resource allocation in leu of out-of-home placement within the juvenile incarceration system.

Purpose of the Study

The overarching purpose of the present study is to shed light on policies, processes, and practices that target the most marginalized children and youth for exclusion and punishment instead of opportunity. Building an understanding of how multiply-marginalized young people of color are funneled out of schools and into prisons, and are cycled through the carceral system, is a first step to naming and disrupting these mechanisms. Eliminating these mechanisms that uphold and perpetuate the juvenile carceral system is a debt that is owed to children of color who are situated within and most vulnerable to interlocking forms of oppression.

More specifically, the present study aims to define involvement with the juvenile incarceration system as an adverse childhood experience, and to provide information on how exposure to the system influences behavior. This relevant information may inform evidence-based practices in juvenile courts that help direct service provision and mitigate removal episodes for carceral facility placement. While studies examine the relationship between ACEs and serious and violent juvenile offenders (Fox et al., 2015), no literature has examined the link between the specific trauma of system involvement and out-of-home placement and juvenile behavior, or even how exposure to the system manifests differently among young people with multiply marginalized identities (i.e., youth of color with disabilities).

The present study is quantitative, using existing, open-sourced data from the Pathways to Desistance study (Mulvey et al., 2014). The longitudinal study follows 1,354 serious juvenile offenders across two locales: Philadelphia, PA, and Phoenix, AZ. The anonymized data protects participant confidentiality (Schubert et al., 2004). Despite an abundance of research on ACEs, little is known of the effect of out-of-home placements within the juvenile incarceration system or protective factors (independent variable) on behavior (dependent variable), and whether school engagement may guard against further offending. Therefore, the research design required the use of existing longitudinal data from the Pathways to Desistance study on adjudicated youth. The Pathways to Desistance study includes racial/ethnic identity, disability status, and gender identity variables, measures of out-of-home placements commonly used within the juvenile incarceration system and protective factors, as well as self-reported involvement in illegal activities over time.

Dependent Variable

The Self-Reported Offending (SRO) measure (Huizinga et al., 1991) was adapted for the Pathways to Desistance study to measure participants' account of involvement in illegal activities. The SRO consists of 24 items which elicit information about participant involvement in different types of crime. Crimes range from income offenses, such as shoplifting, stealing a car/vehicle, and selling illicit substances, to aggressive offenses, including physical assault, sexual assault, use of weapons against someone, and destruction of property. The frequency of these committed offenses were collected at intake, 6, 12, 18, 24, 30, 36, 48, 60, 72, and 84 months past baseline interviews. The frequency of overall offenses as well as aggressive offenses collected at intake, 36 months, and 72 months constitute the dependent variables for the current study. The total offenses list can be referenced in Appendix A.

Independent Variables

During baseline and follow-up interviews, participants were asked questions across six dimensions that, in part, solicited information on stays in out-of-home placements as well as conditions that may build resilience against deviance (Mulvey et al., 2004; Schubert et al., 2004). Specifically, researchers inquired about the specific out-of-home placement stay of detention facilities most commonly used within the juvenile incarceration system. At the baseline interview, involvement in detention facilities was examined using modified versions of the Child and Adolescent Services Assessment (Burns et al., 1992). Additionally, protective factors covered included the following domains: (a) community factors, (b) family characteristics and relationships, and (c) societal context (Child Welfare Information Gateway, 2004). This study examines the specific community protective factor of education: school engagement. Additional variables examined in this study include disability status, race/ethnicity, and gender.

Significance of Study

Those who are multiply marginalized in terms of race and disability are particularly vulnerable to segregation, imprisonment, and poorer outcomes (Annamma, 2018; Bahena et al., 2012; Kim et al., 2010; Migliarini & Annamma, 2020). Multiply marginalized children's acts of resistance to oppressive systems have often been construed as challenging behavior and deficits that warrant intervention and exclusion (Collins, 2011; Migliarini & Annamma, 2020). Accordingly, research focused on incarcerated populations has often examined and recommended processes and practices that are intended to extinguish "challenging behavior" and assimilate children of color and those with disabilities into dominant ability and functioning norms (Broderick & Leonardo, 2016; Dudley-Marling & Burns, 2014). Such a pattern in the literature may be further compounded by the minimal consideration of race in behavior

intervention research (Steed & Kranski, 2020). However, this project is committed to providing an opportunity for readers to view incarcerated children not as inherently bad or violent, but as young people who have been perpetually marked as deviant and problematic, and who are navigating dangerous situations. Rarely has the construction of criminalization been examined through the trajectories of young people through the carceral system (Annamma, 2018).

Schools and the legal system tend to perceive these children as deviant, disobedient, delinquent, and disabled while simultaneously ignoring the impact that the system designed to rehabilitate them has. This pathologization then is perpetuated through the labeling and punishment of young people, positioning their problems as internal while simultaneously ignoring structural inequities. Individuals with multiple childhood traumatic events are more likely to have mental health issues commonly seen within the incarceration system, including depression, PTSD, conduct disorders, and substance use problems (Childs & Sullivan, 2013; D'Andrea et al., 2012; Kilpatrick et al., 2003; Thornberry et al., 2010). Presently, however, carceral facilities are not suited to provide the necessary services for basic needs and trauma-informed care required for young people in custody (Rapp, 2016). In fact, involvement with the juvenile court system may exacerbate youths' existing mental health problems and contribute to recidivism rates for many reasons (Office of Juvenile Justice and Delinquency Prevention, 2017a). Therefore, a primary goal of the present study is to identify out-of-home placement within the juvenile incarceration system as an adverse childhood experience.

The larger goals of this study are to inform evidence-based practices in juvenile courts and improve decision-making by directing youth towards appropriate prevention and intervention services, to mitigate removal episodes and introduction to the incarceration system, and to clarify policy debates about alternatives for serious adolescent offenders. By confirming

that incarceration solely focused on confinement does not solve the problem, alternative approaches to the punitive model of crime control will require attention.

Research Questions

RQ1: Are the demographic variables of disability status, racial/ethnic identity, and gender related to offending?

RQ2: Do out-of-home placements within the juvenile incarceration system such as detention facilities increase juvenile offending over time?

RQ3: Is the protective factor of school engagement effective in neutralizing the impact of system involvement on offending behavior?

CHAPTER TWO: LITERATURE REVIEW

Overview

Youth of color and youth with disabilities experience disproportionate juvenile incarceration system contact and recidivism (Harrison et al., 2020; National Council on Disability, 2015; Sickmund et al., 2017). Dynamics at various levels of the education and carceral systems create and maintain the school-to-prison pipeline and perpetuate psychological trauma among system-involved youth. Given the salience of racial and disability disparities across systems, Disability Critical Race Theory (DisCrit) (Annamma et al., 2013) is reviewed in this chapter as an analytic tool to expose interlocking oppressions of racism and ableism that work in tandem, and to counter deficit assumptions to create justice-driven practice and policy. Subsequently, QuantCrit was be leveraged as a strategy to hold this author accountable to a critical approach with quantitative methods that ultimately point to the overarching structure of racism and racial inequity (Garcia et al., 2018; Gillborn et al., 2018). Following this theoretical review, research related to childhood trauma, including adverse childhood experiences (ACEs), will be discussed within the context of youth exposed to such experiences during their critical formative years. The chapter continues by proposing an expansion to the definition of ACEs to include incarceration system involvement by examining its impact on youth outcomes. Protective factors in education that build resiliency amongst system-involved youth will also be reviewed.

Theoretical framework

Disability Critical Race Theory

Criminalization through race and disability status has been explored in the literature using a conceptual framework grounded in Disability Critical Race Theory (Annamma et al., 2013). Disability Critical Race Theory, or DisCrit, is an intersectional theoretical framework that helps

investigate how race and ability are co-constructed, or given meaning, and the ways racism and ableism interdependently uphold notions of normalcy through institutional processes and discourses (Annamma et al., 2013). DisCrit expands on critical race theory by highlighting how practices of separation and labeling affect multiply marginalized young people through seven core tenets. These tenets necessitate the acknowledgement of (a) how racism and ableism circulate interdependently to uphold notions of normality; (b) that identity is multidimensional; (c) how the social constructions of race and ability, with a recognition of the material and psychological, affect those who are labeled; (d) the need to center voices of marginalized populations commonly unacknowledged in research; (e) the legal and historical aspects of how disability and race have been constructed and how both have been used to deny rights to people; (f) the ways in which whiteness and ability as property have maintained benefits for white individuals at the expense of people of color; and (g) that an analysis of racism and ableism must encourage activism and resistance (Annamma et al., 2013).

Annamma, Connor, and Ferri (2013) contend that the intersection of the socially subordinate identities of race and disability can interact to have a compounding, adverse effect on a young person and/or their family. In other words, the positioning of children of color with disabilities situates them to be considered “less than” white peers with or without disability labels because of the ways ableism and racism intersect to secure power and privilege for those deemed closest to “normal.” The compounding relationship of racism and ableism, and the importance of investigating intersectionality, may be clarified by Kimberlé Crenshaw, who is often referred to as the academic mother of intersectionality. Crenshaw states, “Because the intersectional experience is greater than the sum of racism and sexism, any analysis that does not take intersectionality into account cannot sufficiently address the particular manner in which

subordination occurs" (Crenshaw, 1989, p. 140). Note that race and gender are Crenshaw's foci of intersectionality, but "the concept can and should be expanded" (Crenshaw, 1991, p. 1245). This suggests that the study of intersectionality can be used to examine the interlocking patterns of oppression, racism, and ableism. Due to systemic oppressions, each socially subordinate identity makes it more likely that students will be targeted for removal from public spaces for incarceration involvement. It is when these identities occur in tandem with other marginalized identities that students become most vulnerable. Students who exist at the intersections of multiple marginalized identities (e.g., race, gender, disability status) are extremely vulnerable to the school-to-prison pipeline.

DisCrit is particularly useful for deconstructing systemic processes that have built and maintained biased educational practice and the school-to-prison pipeline because it simultaneously examines both macro- (e.g., social, institutional) and micro- (e.g., individual) level exclusion from public spaces (Annamma et al., 2018). As such, DisCrit exposes educational programs and reforms that have effectively labeled, sorted, and excluded multiply marginalized children based on white, able-bodied norms, thereby undermining inclusive education and reinforcing inequities. Finally, by illuminating interlocking systems of oppression that manifest in everyday standards and processes, DisCrit helps reimagine practice and possibilities for partnership, and ultimately, advances justice-driven practice in education and the carceral system (Kozleski et al., 2020).

QuantCrit

It is this author's intention to shed light onto disparities that exist within the juvenile incarceration system, an established area in research with few solutions, using a critical approach to quantitative methods. When applied to quantitative studies, critical lenses highlight the assets

and strengths of young people of color, rather than deficits, and acknowledge the "overarching structure of racism and racial inequity . . . in framing, interpretation, and approach" of quantitative analyses (Sablan, 2019, p. 184). Yet few studies have used a critical approach with quantitative methods, and even fewer have used DisCrit as an underlying theory (Cruz et al., 2021).

Scholars have used Critical Race Theory to underscore the pervasive nature of racism that is unacknowledged in quantitative studies claiming to be bias-free (Sablan, 2019). Sablan (2019) argues that the use of critical frameworks in quantitative analyses may reveal the ways in which policies and practices affect groups differently. The design of qualitative inquiry is such that counterstories and alternative epistemologies that illuminate the centrality of racism in young people's experiences is central (DeCuir-Gunby & Walker-DeVose, 2013). Similarly, quantitative work, when employed critically, can also detail the ways in which racism and ableism position and marginalize young people in public spaces, and thus spotlight counternarratives to claimed race neutrality.

The present study aims to build on QuantCrit as a methodological strategy. Five core tenets of QuantCrit are leveraged through this work (Gilborn et al., 2018). These tenets acknowledge (a) the centrality of racism, (b) that numbers are not neutral, (c) that categories of race are neither natural nor static, (d) that data cannot speak for itself, and (e) the importance of using numbers for social justice endeavors. Subsequently, a discussion will include how racism and ableism are enacted across systems to demonstrate the relevance of this lens, and how these tenets of QuantCrit (Gillborn et al., 2018) are to be leveraged through the DisCrit lens.

QuantCrit as a Methodology

The Centrality of Racism

Racism and ableism are enacted across agencies and systems. Therefore, acknowledging their centrality presumes that utilizing quantitative analysis without an antiracist perspective reinforces racism. For this study, in adhering to this first tenet of DisCrit and QuantCrit, a series of individual identity markers provided by the young participants (i.e., race/ethnicity, gender, and disability label) was used to examine outcomes following incarceration system contact. To be clear, the variables used in this study are social constructs, not biological categories, and the quantitative relationships explored in this study are associative, not causal. The differences in behavioral outcomes associated with gender, racial/ethnic identities, and disability status were interpreted to be indicators of structural inequities, not 'pre-existing fixed qualit[ies]' of multiply marginalized youth (Gillborn et al. 2018, p. 15).

Numbers Are Not Neutral

Racism is a complicated, multifaceted, and multilevel social phenomenon that is difficult to quantify (Danso, 2015; Irons, 2019). Adhering to this tenet of numbers are not neutral means understanding how quantitative analyses have reinforced the power of whiteness and the perceptions of "normal" development (Zuberi, 2001). An important consideration is to move past using static categories as identity markers, which have been imposed and normalized through labeling practices (Cruz & Firestone, 2021; Fish, 2019; Link & Phelan, 2001; Shifrer, 2013). Seeking variation simply within "box descriptions" of people groups seemingly oversimplifies the intricacies of culture and its influence. Using lists of characteristics assumes that general traits of individuals are attributable categorically to ethnic group membership (Gutierrez & Rogoff, 2003, p. 19). The result is an increased likelihood that groups will be treated as

homogenous, with fixed characteristics carried by the collection of individuals that comprise the group. This logic of stable traits attributable to a pre-specified social group persists the problem of overgeneralization.

Studies on disproportionality have used different methods to compare outcomes of a given marginalized group either with white students (e.g., Cruz & Rodl, 2018) or with all students collectively (e.g., Gregory et al., 2016). Given that this author aims to decenter whiteness, outcomes for each available racial group (i.e., African American, Latinx, and white) were explored individually, compared with all other youth. Comparing each group with the whole spotlights the narrative within each group rather than compare racial groups against one another in one analytic model.

Categories Are Not Natural or Static

The School-to-Prison pipeline is animated through multiple marginalizing processes that target children with specific identities. Examining the social constructs of race, disability, and gender allows for a more comprehensive understanding of the pipeline. QuantCrit acknowledges that categories of race are socially constructed and subject to dynamic political, historical, and economic influences. In integrating QuantCrit and DisCrit theory in this research, this author agrees with Cruz et al. (2021) that disability categories are also not objective or static (Artiles et al., 2016). This means that in a quantitative study of disproportionality, it must be acknowledged that disability labels are socially constructed and given meaning, and can advantage some by creating access to opportunity for white students, while pathologizing young people of color and serving a criminalizing purpose (Annamma, 2018).

Labeling students is a major contributor in the construction of criminal identity (Annamma, 2018, p. 14). Labeling accomplishes more than stigmatization; the labels produce

targets for schools to exclude. Some have suggested that labeling students with disabilities serves to remove students with perceived behavior problems from classrooms and, as such, operates as a form of social control (see Annamma, 2018; Anyon, 2009; Connor, 2008). In public schools, labeling is both formal and informal. Formally, participants experience labeling based on disability and racial labeling by teachers, psychologists, administrators, and other school personnel. However, informal labeling as deviant, emotionally damaged, and deficient impact ways system agents support or discourage young people from obtaining an education. Once young people are labeled with an identity unwanted by the state, they are more likely to be labeled with other unwanted identities, which further stigmatize and target them for removal (Rios, 2011). Labeling, defined as the formal/informal naming of student's identity (e.g., race and disability status) and the addition of other unwanted identities, has an impact upon an eventual construction as criminal.

A limitation of a majority of quantitative studies, including the present project, is the use of data collection methods that categorize participants into single race and gender indicators that often represent highly heterogeneous groups. Research using single-dimension analyses has contributed greatly to the unique experiences of multiply marginalized children being obscured, which can allow deficit narratives to go unchallenged. Research can advance intersectional justice efforts by examining multiple dimensions of identity and converging oppressions. Intersectional analysis can facilitate a more complex, nuanced understanding of the experiences of multiply marginalized young people, and how incarceration settings can value multitudes of diverse identities and backgrounds (Annamma et al., 2018). This author acknowledges the importance of disaggregated data. Considering that disaggregated data was not available through

this dataset, this author intends to caution the overgeneralization of results across racial categories rather than within groups (Kulkarni, 2017).

Data Cannot Speak for Itself

It is critical that any justice-driven research grounded in Disability Critical Race Theory incorporates perspectives of multiply marginalized individuals, families, and communities throughout their research processes. To the greatest extent possible, this author intends to interpret data in accordance with the experiences of the young people who exist within the data. In an effort to situate multiply marginalized incarcerated youth as partners in knowledge generation, qualitative works that speak directly to the study results are highlighted in the discussion section in order to provide context from important stakeholders (e.g., families, adjudicated youth), as described through qualitative/ethnographic research (e.g., Annamma, 2018; Banks, 2017). A benefit to centering these narratives is that it directly counters cultural deprivation models while simultaneously illuminating the knowledge, strengths, and cultural resources within a community whose voices are often left out of quantitative research.

The Use of Numbers for Social Justice

The frameworks of DisCrit and QuantCrit provide important implications for moving forward with research, policy, and action that disrupt inequities in both the juvenile incarceration system and public education (see Broderick & Leonardo, 2016). Therefore, this author intends to offer next steps for researchers, policy-makers, and clinicians that are justice-driven and culturally responsive. This work also seeks to highlight the ways in which quantitative analyses can be used to reject deficit discourses so that researchers investigating the carceral system may understand that numbers are not neutral and can be used for understanding and remedying differential treatment of groups our system leaves behind (Gregory et al., 2017).

Racism and Ableism Enacted Across Systems

Implementing the QuantCrit methodological approach within the DisCrit theory posits that racism and ableism are interdependent, and that both play an integral role in research inquiry investigating the experiences of multiply marginalized youth in education and the carceral system. A young person who does not conform to White-centered, neurotypical expectations for learning and behavior is understood to have an academic or behavioral deficit and is vulnerable to disability labeling and/or exclusionary discipline practices. When educators operate out of a deficit perspective of marginalized children and identify them to be "at risk" (e.g., children experiencing poverty, multilingual children) or disabled, they employ instructional practices or interventions narrowly focused on addressing perceived deficits rather than providing richer learning opportunities afforded to wealthier, enabled, white children (Adair et al., 2017; Martínez-Álvarez, 2019). Such deficit perspectives and sorting results in educational experiences and exclusion that may effectively be disabling.

Years of research highlight inequities in education for students of color and students with disabilities (National Center for Learning Disabilities (NCLD), 2020). These inequities are particularly evident in rates of special education enrollment and disciplinary action. Bias within the education system, including within assessments and academic policies, can result in students of color being misidentified as needing special education, and then placed in more restrictive settings and experiencing more frequent and harsher discipline (NCLD, 2020). This trajectory of being misidentified as needing special education, placed in a restrictive setting, and/or disciplined more frequently and harshly can negatively affect student outcomes. This trajectory will be discussed in detail in the following subsections to demonstrate how racism and ableism

are enacted across agencies and systems, and to further emphasize the importance of acknowledging their centrality when engaging in research inquiry.

Racial Disproportionality in Special Education Identification. If young people do not conform to fixed learning and/or behavioral expectations in the general education classroom, then they are often referred for special education assessment and evaluated for eligibility by an interdisciplinary team. It is important to understand the implications of disability status or special education labels for students of color. There are known benefits to having an identified disability and enrolling in special education, such as individualized support and smaller class sizes at school. Students in special education have also been traditionally imagined as a protected group in schools. However, special education is not an adequate solution nor equitable for students who do not actually have a disability, and inappropriately placing children into special education programs causes short-term and long-term harm (NCLD, 2020). The literature demonstrates that racial and ethnic minority students, especially Black and Native American students, outpace referrals for evaluation and identification of white, Latinx, and Asian students, with students identified as Native American at 13%, Black at 11%, Latinx at 9%, white at 8%, and Asian at 4% (Snyder & Dillow, 2015).

Examining data within disability categories reveals that identification disparities are greatest for disabilities experts consider to be more subjective (NCLD, 2020). Some disabilities' identification is dependent upon the professional judgment – and often the biases – of the assessors because non-subjective or culturally responsive tests are not available. For example, Specific Learning Disability, Intellectual Disability, and Emotional Disability are considered to be more subjective disabilities (Fish, 2017). American Indian/Alaska Native students are almost twice as likely to receive services for specific learning disabilities, compared to white students

(U.S. Department of Education, 2015). Black students are diagnosed with emotional disorders at twice the rate of their white peers (U.S. Department of Education, 2010), and they are diagnosed with intellectual disabilities at almost three times the rate of white or Latinx students (Fish, 2017). Conversely, white students are three times more likely to be identified as gifted/talented than their Black, Latinx, or Native American peers (National Education Association, 2007). While more research is needed, researchers have suggested that teacher or assessment biases could have greater impacts on the determination of these disabilities, contributing to observed disparities (Sullivan & Bal, 2013).

Placement Disparities. Once identified as having a disability, students of color are placed in overly restrictive special education environments at higher frequencies (NCLD, 2020), where students are separated from the mainstream. The Individuals with Disabilities Education Act (IDEA) is premised on the principle that students must be educated in the least restrictive environment, meaning that students with disabilities should be educated in general education and among their non-disabled peers to the greatest extent possible. Research has clearly shown the benefits of inclusion. For example, research on students in Massachusetts found that students with disabilities taught in fully inclusive environments were five times more likely to graduate on time, compared to other students with disabilities (Grindal et al., 2019). After high school, students with disabilities who were fully included in the general education classrooms were 11 percentage points more likely to be employed (Grindal et al., 2019). Ultimately, placement decisions that segregate students only exacerbate achievement gaps, as researchers have found that students in general education classrooms have better academic and employment outcomes than students placed in separate spaces (Schifter et al., 2019).

The Every Student Succeeds Act, the nation's major federal education law, acknowledges that being educated in a self-contained classroom, or in a setting specifically designed for students with disabilities, is only appropriate for a small percentage of students (NCLD, 2020). However, data have shown that students of certain racial and ethnic backgrounds are more likely to be taught in these restrictive environments, resulting in a loss of access to a number of resources such as high-quality instructional strategies, curriculum, academically proficient peers, and high expectations (National Education Association, 2007; Reinke et al., 2013; Scott et al., 2017). While 55% of white students with disabilities spend more than 80% of their school day in a general education classroom, only a third of Black students with disabilities spend that much time in a general education classroom (National Education Association, 2007). Latinx and Native American students with disabilities are also more likely to be taught in separate learning environments, compared to white students (National Education Association, 2007).

Statistics demonstrate that disabled students of color are faring less well than their white counterparts as a result of segregated learning environments. Graduation rates for disabled students are at their highest level ever at 64.6%; when disaggregated by race, however, disabled white students graduate at a rate of about 72%, Latinx students at 58%, and Black students at 55%. When compared to a national rate of 83.2% for 'abled' students, it is clear that disabled students of color are underrepresented in academic success and positive outcomes (National Center for Education Statistics, 2020).

Racial and Disability Disproportionality in Discipline Practices. In exclusionary discipline, a student produces behavior that is challenging for school personnel and practitioners, who either address the behavior or send the student to an administrator who determines a consequence. Evidence consistently documents that children of color and children with

disabilities are more likely to be suspended or expelled from school. Compared to nondisabled peers, students with disabilities are more than twice as likely to receive an out-of-school suspension, and also experience increased likelihood for repeated suspensions (Lhamon & Samuels, 2014). Perhaps more concerning is that students with an identified emotional disorder are at greatest risk as they are more than twice as likely as students in the second ranked disability category (other health impairment) to be suspended or expelled from school (Losen et al., 2014). High rates of exclusionary discipline procedures are problematic for many reasons but, in particular, pose a potential threat for violating students' access to FAPE.

Another concerning tendency is the disproportionate discipline among students of color within the emotional disorder category. The U.S. Department of Education's Office of Civil Rights conducts an annual survey of all public schools and school districts in the United States for the purpose of evaluating student access to courses, programs, staff, and resources. A recent report on school climate and safety within U.S. public schools verified disproportionate representation of students with disabilities, when compared to all other students, in referrals to law enforcement and school-related arrests, events of restraint and seclusion, and out-of-school suspensions and expulsions (U.S. Department of Education, Office of Civil Rights, 2018). However, these results were not disaggregated by disability category or by race/ethnicity within disability category. Evidence of a trend for disproportionate discipline among students of color within the emotional disorder category was indicated in the *National Longitudinal Transition Study* data (Newman et al., 2011). When disaggregated by race/ethnicity within disability category, roughly 78% of all Black students, grades 7 to 12, identified as having an emotional disorder received an out-of-school suspension (Lipscomb et al., 2017), whereas Black students only made up about 16% of the total school-age population (McFarland et al., 2017). Likewise,

56% of all Latino/a students, grades 7 to 12, with identified emotional disorders received an out-of-school suspension (Lipscomb et al., 2017), whereas Latinos/as account for approximately 25% of students enrolled in public elementary and secondary schools (McFarland et al., 2017). For White students, the proportion of students in grades 7 to 12 with identified emotional disorders that received an out-of-school suspension, which was nearly 62%, was much closer to their overall representation in the public school population, which was approximately 50% in 2014 (Lipscomb et al., 2017; McFarland et al., 2017). These large-scale studies are only a small representation of many more studies that attest to the pervasive nature of discipline disparity by race/ethnicity and disability in education.

School-to-Prison Pipeline. Research has found that school failure and disciplinary removal are two factors that increase the likelihood of incarceration (Kim et al., 2010). Multiple studies have found that when a student is suspended or expelled, the likelihood that they repeat a grade, drop out of school, and/or become involved in the juvenile incarceration system is significantly greater (Fabelo et al., 2011; Mowen & Brent, 2016). Mowen and Brent (2016) determined that with each suspension received, students' risk of being arrested increased substantially. In other words, exclusionary discipline is a key component of what is known as the school-to-prison pipeline phenomenon. Extant literature clearly demonstrates that the trajectory toward criminalization begins with removing multiply-marginalized young people from school. The result is an incarcerated population characterized by an overrepresentation of youth of color with disabilities. Ultimately, compared to white students with disabilities, Black students with disabilities are four times more likely to be educated in a correctional facility (Kim et al., 2010).

Researcher Positionality

Transparency and concerns about researcher bias are as relevant to quantitative research as they are to qualitative studies (Fielding & Schreier, 2001; Kirkland, 2019). It is not possible to conduct research that is completely neutral given that researchers are the "medium by which information is generated, analyzed, [and] interpreted" (Danso, 2015, p. 576). This author agrees that "all knowledge is mediated through lived experience" and to suggest otherwise "replicates false assumptions inherent to objectivity as real and attainable" in ways that can serve to maintain power for the dominant, white culture (Kirkland, 2019, p. 2-3). Therefore, a description of the author's positionality is included below to make clear how her experience influenced the questions asked, the literature and frameworks leveraged, and how the results were interpreted.

I have come to realize that "problems with authority" and "needs to follow directions" are frequent among the school records of incarcerated youth. Working across education, hospital, and carceral settings, I have quickly uncovered the relationship between disability, special education, and imprisonment. Even more concerning is the persistent recognition that these spaces are racialized. That is, students of color are disproportionately represented in both the special education and prison settings, yet underrepresented in the outpatient clinic setting that provides specialized diagnostic and support services for children with disabilities and their caregivers. It is clear that the children I encounter in the special education and prison spaces are not the hardened criminals society has ingrained all to expect. Instead, they appear to me to be impulsive, funny, excitable; each their own individual selves carrying complex stories and traumatic experiences of their own. I have walked through locked doors in my work to ensure that I continue to learn and understand the lives of the children we incarcerate, and to, in turn,

educate others in the common misconceptions assigned to children and adolescents who struggle with mental health challenges and problem behaviors.

As a scholar committed to advancing racial and disability justice, I believe that juvenile incarceration facilities are important contexts for disrupting deficit-based narratives and affirming the most marginalized voices. However, doing this well in practice is extremely complicated, especially considering that a majority white, nondisabled male staff (61.9% of staff are white, and 71.3% identify as male; Federal Bureau of Prisons, 2021) is surveilling an incarcerated population that is disproportionately youth of color and youth with neurodevelopmental differences. Despite the facility staff's expressed positive intentions, white, nondisabled male staff may reify dominant conceptions of normativity in terms of whiteness and ability in their practice. Through my research, I aim to re-envision these settings not only to reduce the damaging impact that a punitive and holding objective can have on detained youth, but also to illuminate how such a system upholds damage-centered narratives fueling oppressive notions of racism and ableism. I am acutely aware of the unique position this research target puts me in, as both an insider striving to care for this population through my professional work within a juvenile carceral facility as well as an outsider being a white, nondisabled woman who strives to alter traditional punitive practice.

I have selected a conceptual framework grounded in Disability Critical Race Theory, or DisCrit, as the foundation of my research inquiry (Annamma, Connor, & Ferri, 2013). As a white, nondisabled scholar, my intention for choosing this conceptual framework is not only for the purpose of analyzing youth's experiences within the incarceration system, but to hold myself accountable to the ways my positionality impacts my research inquiry and data interpretation. It is of highest priority to use my position and area of influence to bring change to practices so

more complete and meaningful guidance may be provided to those our current system leaves behind.

The Youth Incarceration Context

Racial and Ethnic Disparities in Incarceration

Youth of color have persistently shown to be overrepresented in the juvenile incarceration system. Together, those of African American and Hispanic/Latino origin comprise about one-third of the general population (U.S. Census Bureau, 2015) but approximately two-thirds of those incarcerated in juvenile facilities (Sickmund et al., 2017; Sickmund et al., 2014). African Americans are incarcerated at a particularly high rate as young African American males are detained at a rate that is approximately six times that of non-Hispanic white men (Hockenberry, 2018) and three times that of Hispanic/Latino men (Carson, 2015). Research also reflects the disproportionate representation of American Indian and Alaska Native youth across the juvenile incarceration system contact points. It has been estimated that roughly 60% of the federal juvenile incarcerated population involve tribal youth (Hartney, 2008). The racial breakdown in residential facilities has changed only slightly over the past two decades, with small increases in the number of Latino youth and small decreases in the number of white and Asian youth represented (Sickmund et al., 2017).

Discriminatory practices contribute not only to initial incarceration involvement but also to who continues to be involved in the system over time. Racial/ethnic biases affect who is arrested (as opposed to being released with a warning), who is detained before trial, who is prosecuted, who is committed, the length of sentence received, and time of release from prison (Campbell et al., 2018; Franklin, 2018; Garrison, 2011; Wu, 2016). African Americans are more likely than other racial/ethnic group to receive harsher sentences for similar crimes. For example,

for those arrested for property crimes and public order offenses, African Americans are twice as likely to be imprisoned when compared with non-Hispanic whites (Oliver, 2001). One study estimated that Hispanic/Latino origin alone increased the likelihood of receiving a prison sentence by 23% (Warren et al., 2012). A review of research conducted between 2002 and 2010 on racial disparities in the court system revealed 11 research articles that investigated the impact of being American Indian/Alaska Native in juvenile court processing (Cohen et al., 2013). Across the 11 studies, the negative effect of race was found in over half of the case outcomes. Tribal youths are 50% more likely than white youths to receive the most punitive sanctions (Hartney, 2008). When considering the type of intervention program the system facilities use, youth of color were "more likely to be referred to programming with a physical regimen than their white counterparts" (Campbell et al., 2018, p. 79). White youth, on the other hand, received referrals to therapeutic programs. These findings support previous studies suggesting youth of color receive harsher penalties (Sherman & Jacobs, 2011).

Such statistics show that not only are youth of color disproportionately represented in the juvenile incarceration system, but they are also mostly housed in detention and long-term state and federal facilities that, particularly for tribal youth, are far from their home communities and tribal lands. Placing juveniles in residential facilities with programming that is not individualized to meet their developmental needs can negatively impact their ability to successfully integrate back into society (Lindquist et al., 2014), and may increase the likelihood of recidivism (Loughran et al., 2009).

Gender Disparities Among Incarcerated Populations

Large gender disparities exist among incarcerated youth populations. The scholarship investigating the relationship between education and incarceration has focused primarily on boys

of color (Darensbourg et al., 2010). Men and boys are overrepresented in the American incarceration system (Carson, 2015), and bias in sentencing is especially pronounced among young men of color (Doerner & Demuth, 2010; Franklin, 2018). However, for more than two decades, the proportion of girls in the juvenile incarceration system has been increasing (Espinosa et al., 2013), from 19% in 1985 to 28% in 2015 (Ehrmann et al., 2019). Girls of color are the fastest-growing incarcerated population (Office of Juvenile Justice Delinquency Prevention, 2010; Sherman & Balck, 2015). It is worth noting that women and girls' introduction to and experience with the incarceration system oftentimes looks different than that of boys and men. Punishment for girls and women often occurs under such conditions as domestic violence, drug use, and sexual abuse (Belknap, 2007; Richie, 2012).

Neurodevelopmental Disability Disparities in Incarceration

Though not explored extensively, disability also is deeply linked to the criminalization of children and young people. Disabled children comprise 12 to 14 percent of the public school population (National Education Association, 2007) yet are overrepresented at 33 to 40 percent in juvenile incarceration facilities (Houchins & Shipen, 2012; Quinn et al., 2005), with some estimates suggesting that upwards of 80% of incarcerated youth have a disability (National Council on Disability, 2015; Read, 2014; Swain-Bradway et al., 2013). The prevalence of specific conditions in juvenile facilities is under-researched as estimates are difficult to confirm due to a lack of routine screening and to jurisdictions failing to consistently maintain a comprehensive record on the number of youths with disabilities (Office of Juvenile Justice and Delinquency Prevention, 2017b).

Studies of prison populations have reported high rates of Attention-Deficit Hyperactivity Disorder (AD/HD; American Psychiatric Association, 2013) among young offenders (14% met

diagnostic criteria for AD/HD; Schubert et al., 2011; Schubert & Mulvey, 2014). The data on the prevalence of Autism Spectrum Disorder (ASD; American Psychiatric Association, 2013) within the system is varied. Three studies conducted in different countries, using different methods of diagnosis, in different incarceration settings, and with participants of various ages, all have revealed a prevalence of ASD between 1.5% and 5.3% (Hare et al., 1999; Scragg & Shah, 1994; Siponmaa et al., 2001). A screening study in a maximum-security prison located in North America reported a rate of 4.4% (four times greater than the general population) (Fazio et al., 2012). This relatively stable estimate may indicate that those with ASD are overrepresented in incarceration settings at a rate of approximately 3-4%, on average.

In terms of Intellectual Disability (ID; American Psychiatric Association, 2013), Mottram (2007) estimated that individuals with ID (IQ < 70) made up 7% of a local prison population, with those with a borderline ID representing up to 25% of the inmates. However, studies across the world suggest that the reported presence of ID in prisoners is determined using differing study methodologies and diagnostic criteria, and may be up to 23% for detained youth under 18 years of age (Harrington & Bailey, 2005).

In addition to those who meet diagnostic criteria for ADHD, ASD, and ID, there are individuals with broader neurodevelopmental difficulties that may not have been identified, who also have significant vulnerabilities that are likely to be exacerbated in challenging environments such as carceral settings. Those with neurodevelopmental difficulties are likely to be more similar to those with neurodevelopmental disorders than those without these conditions (McCarthy et al., 2016). As such, it is critical to increase efforts to identify and support the needs of those with neurodevelopmental disorders *and* difficulties.

Mental Health Status Prevalence in Incarceration Facilities

Several studies confirm that a large proportion of youths in the juvenile incarceration system have a diagnosable mental health disorder. Research suggests that about two-thirds of youth in correctional settings have at least one diagnosable mental health problem, compared with an approximated 9 to 22 percent of the general youth population (Schubert & Mulvey, 2014; Schubert et al., 2011). A meta-analysis by Vincent et al. (2008) estimated that as many as 70% of youths have a diagnosable mental health problem at some juvenile incarceration system contact points. Many detained youths are also diagnosed with multiple disorders. For example, the Pathways to Desistance study (a longitudinal study that followed more than 1,300 youths adjudicated for serious offenses) found that 39% of youths met criteria for more than one mental health disorder (Schubert et al., 2011). Similarly, the Northwestern Juvenile Project (a longitudinal study that followed more than 1,800 youths who had a history of being arrested and detained in Cook County, Illinois) determined that 46% of males and 57% of females had two or more psychiatric disorders (Teplin et al., 2013). In a study of system-involved youths in Texas, Louisiana, and Washington, Shufelt and Cocozza (2006) found that 79% of youths coping with one mental health disorder also met the threshold for two or more diagnoses. Considering that disorders may exacerbate each other and make treatment more difficult, comorbidity presents a particularly difficult problem for the correctional system.

These findings align with other studies that point to the overrepresentation of detained youths with mental/behavioral health disorders (Meservey & Showyra, 2015; Teplin et al. 2015). To note, the prevalence of these conditions has been found to be sensitive to the stage within the system at which youths are assessed. In a nationwide study, Wasserman et al. (2010) found that diagnosed disorders were more prevalent in youth formally processed and placed in juvenile

carceral facilities than those who were diverted from system placement and rather were served in their home communities. This result stresses the need for early identification and treatment efforts to prevent the progression of mental and behavioral health problems, particularly for those youth who become more entrenched within the system.

Diagnoses commonly include behavior disorders, substance use disorders, anxiety disorders, and mood disorders (Chassin, 2008; Gordon & More, 2005; Shuftel & Cocozza, 2006; Teplin et al., 2002). However, the prevalence of each of these diagnoses varies considerably among court-involved youth. For example, the Pathways to Desistance study found that the most common mental health problem was substance use disorder (76%), followed by high anxiety (33%), depression (12%), posttraumatic stress disorder (12%), and mania (7%) (Schubert et al., 2011; Schubert & Mulvey, 2014). A study by Wasserman et al. (2010) across multiple juvenile incarceration settings found that one-third of youths (34%) met criteria for substance use disorder, 30% met criteria for disruptive behavior disorders, 20% met criteria for anxiety disorders, and 8% met criteria for affective disorder. These studies demonstrate the complexities of working with detained youths, and represent a challenge to the juvenile carceral system to provide special services and sufficient treatments to support learning and the development of social, emotional, and behavioral functioning for these young people.

Description of Juvenile Incarceration System Facilities

There are no universal, standard definitions of residential treatment programs (Sickmund, 2010). The Juvenile Residential Facility Census (JRFC) and the Census of Juveniles in Residential Placement (CJRP) categorize facilities serving committed, detained, and diverted youth as follows: detention center, shelter, reception/diagnostic center/assessment center, group home, ranch/wilderness camp, boot camp, residential treatment center, and long-term secure

facility (Puzzanchera et al., 2018; Sickmund et al., 2017). In 2015, 35% of detained youth were placed in long-term secure facilities; 33% in residential treatment centers; 13% in detention centers; 12% in group homes; and the remaining in shelters, reception/diagnostic centers, boot camps, wilderness camps, or other placements (Sickmund et al., 2017).

While residential facilities vary considerably, researchers, court rulings, and policies have concluded that residential facilities and their programming are generally responsible for youths' safety, education, and health (Austin et al., 2000; Estrada & Marksamer, 2006; Twomey, 2008). There has even been an increased focused effort on meeting the needs of the many committed youths coping with the effects of trauma (Burrell, 2013; Ford, 2016; Kerig et al., 2014; Romaine et al., 2011; Rosenberg et al., 2014). Yet many residential facilities focus on punishment and containment of youth, and rely on confinement and isolation, security features, mechanical restraints, and other discipline practices to maintain safety. For example, most of the youth in residential placements in 2015 (89.2%) were in facilities that reported that youths were restricted within the facility or its grounds by locked doors, gates, or fences (Puzzanchera et al., 2018). Secure detention centers were the most likely of the facility types to use mechanical restraints and the most likely to report locking youth in their rooms for 4 or more hours to regain control of unruly behavior, as found in 2016 (Hockenberry & Sladky, 2018). Strict confinement features designed to restrict the movement and activity of detained youth are also commonly used in long-term secure facilities (95% reported one or more confinement features) and residential treatment centers (48% reported) (Hockenberry & Sladky, 2018). Mechanical restraints such as handcuffs or restraining chairs are also a commonly used strategy among long-term secure facilities (52% reported; Hockenberry & Sladky, 2018) while isolation or restraint is the

preferred method used among residential treatment centers (82% reported; Green-Hennessey & Hennessey, 2015).

While research on the subject of safety is limited, the results from a Performance-based Standards survey found that the ability of youth to adjust to confinement and other new residential settings, and to be receptive to treatment and learning opportunities, depends on them feeling safe (PbS Learning Institute, 2016). A sense of safety can also result in reductions in antisocial activity and future system involvement (PbS Learning Institute, 2016). Additionally, some studies investigating both court-involved adults and youths have determined that individuals who perceive facilities as less safe have higher levels of institutional misconduct (Lujan, 2017). In 2016, a PbS survey of juveniles in more than 150 residential facilities in 36 states found that 17% reported that they feared for their safety inside the facility (PbS Learning Institute, 2016). Several other studies have confirmed that out-of-home placement fails to meet the developmental needs of youth, is limited in its ability to provide appropriate rehabilitation, and can predict negative outcomes for youth related to their mental and physical well-being, education, deeper system involvement, future employment, and recidivism (Barnert et al., 2017; Bettman & Jasperson, 2009; Burrell, 2013; Dmitrieva et al., 2012; Lambie & Randell, 2013; Leiber et al., 2009; Mendel, 2014; Rodriguez, 2010; Schwalbe et al., 2009; Steiner, 2009; McGuire, 2002).

Recidivism is defined by the U.S. Department of Justice as "criminal acts that result in rearrest, reconviction, or return to incarceration with or without a new sentence during a three-year period following the prisoner's release." National recidivism rates for juveniles do not exist, but state studies have shown re-arrest rates for youth within 1 year of release from an institution average 55%, while re-confinement rates during the same timeframe average 24% (Snyder &

Sickmund, 2006). Within three years of release, more than two-thirds of former prisoners in the U.S. are re-arrested (Durose et al., 2014). Nearly all of the youths – 94% of males and 80% of females sampled from juvenile detention – were incarcerated more than once during their adolescence and young adulthood. In comparison, a mere 5% of young adults in the general population have any history of incarceration by the age of 24 (Apel & Sweeten, 2010). In other words, in the sample of detained youth, multiple incarcerations were the rule rather than the exception (Harrison et al., 2020). These statistics highlight the pervasive nature of recidivism as youth age and spotlight the critical need to reduce reoffending by providing systematic, evidence-based programming and services to meet the developmental and mental health needs of court-involved youth, and facilitate a youths' successful integration into their home communities.

Adverse Childhood Experiences

In their landmark study, Felitti and colleagues (1998) first labeled a collection of ten negative early life circumstances as Adverse Childhood Experiences (ACEs). It was found that the more ACEs one had experienced prior to their 18th birthday, the more likely they were to suffer from poor health and well-being (National Center for Injury Prevention and Control, 2016). These 10 events used to measure ACEs include physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect, household substance abuse, violent treatment toward mother, parental separation or divorce, household mental illness, and having a household member with incarceration history. Much knowledge of these ACEs relied on data predominantly collected from middle-/upper-middle-class participants and focused on experiences within the home.

Research on ACEs has developed and expanded greatly since Felitti et al.'s (1998) landmark work, including the Philadelphia Expanded ACE Study conducted to understand the impact of community-level adversities. Five additional community-level stressors were added, including witnessing violence, living in foster care, bullying, experiencing racism or discrimination, and feeling unsafe in your neighborhood (Forke-Young, 2016). The effects of ACEs on any given outcome are typically studied as a collective set of experiences (as opposed to each ACE being focused on separately) as they have been found to not only be strongly correlated with one another, but also have enduring, cumulative negative effects. Wolff et al. (2018) contended that ACEs "have been identified as a key risk factor associated with a wide range of negative life outcomes" (p. 2279). Childhood trauma can negatively impact the development of young people (Anda et al., 2006; Anda et al., 2010; Baglivio & Epps, 2016; Cicchetti, 2013; Teicher et al., 2003). Youth who have experienced ACEs are more likely to develop internalizing and externalizing behavior problems, and those who are coping with the effects of multiple ACEs have been found to have a higher likelihood of becoming serious, chronic, and violent juvenile offenders (Fox et al., 2015). Based on studies utilizing diverse samples, increased ACE exposure has also been linked to lower educational and employment attainment (Baglivio et al., 2015; Bellis et al., 2014; Drury et al., 2017; Fox et al., 2015; Vaughn et al., 2017; Wolff et al., 2017). Not only are juvenile offenders more likely to have experienced ACEs than their nonoffender counterparts, they also have experienced more of these negative events (Baglivio & Epps, 2016).

Trauma and the Juvenile Incarceration System

It is well documented in research that trauma is a common pathway for youth to become involved with the incarceration system (Chesney-Lind & Shelden, 2013; Finkelhor et al., 2009;

Huang et al., 2015; Ko et al., 2008; Marsiglio et al., 2014; Moreland & Ressler, 2021). Studies have highlighted the prevalence of trauma among detained youth. Dierkhising et al. (2013) utilized the National Child Traumatic Stress Network core data set to examine trauma histories, mental health concerns, and associated risk factors (e.g., alcohol use, academic issues, child welfare involvement) among adolescents with recent court involvement. The study determined the following: For an estimated three-fifths of the studied participants, the age of initial trauma exposure was prior to their fifth birthday; one-third of participants reported exposure to various types of trauma each year into adolescence; about two-thirds met criteria for a mental health disorder; one-third met criteria for PTSD; as many as 90% of the youth involved with the incarceration system reported a substantial trauma exposure. In another study of trauma and mental health disorders in 350 incarcerated youths in New Hampshire and Ohio, Rosenberg et al. (2014) found that 94% of youths reported having experienced at least one trauma, but the mean was 5.4 traumatic events. Exposure to victimization or trauma, particularly poly-trauma during the vulnerable developmental stages of childhood, can result in complex developmental trauma.

Complex trauma has been defined as exposure to traumatic stressors at an age or in a context that disrupts one's secure attachment with primary caregivers and the associated ability to self-regulate emotions (Ford et al., 2012). Complex trauma can progress into the mental health and behavioral problems commonly seen within the juvenile incarceration system, including posttraumatic stress disorder, depression, addictive behaviors, emotion dysregulation, reactive aggression, dissociation, and/or serious offending behaviors (Childs & Sullivan, 2013; D'Andrea et al., 2012; Kilpatrick et al., 2003; Thornberry et al., 2010). These findings highlight the critical need to improve placement decisions, approaches to care, and practice to be trauma-informed within the juvenile incarceration system.

Defining Juvenile Incarceration System Involvement as an ACE

While trauma has been documented as a common pathway into the juvenile incarceration system, few have investigated the harm that placement within the system can have. Overall, the purpose of the juvenile carceral system is to address delinquent youth as a vulnerable population, provide for the welfare of child offenders, and to advocate for least restrictive treatment environments (Dewey & Gottlieb, 2011). Yet studies have confirmed that the juvenile carceral system can predict negative outcomes for youth related to their mental and physical well-being, education, deeper system involvement, future employment, and recidivism (Barnert et al., 2017; Bettman & Jasperson, 2009; Burrell, 2013; Dmitrieva et al., 2012; Lambie & Randell, 2013; Leiber et al., 2009; Mendel, 2014; Rodriguez, 2010; Schwalbe et al., 2009; Steiner, 2009; McGuire, 2002).

The system serves as a punitive arm of the state and an extension to the web of institutions designed to support multiply marginalized incarcerated youth but that punish, stigmatize, monitor, and criminalize young people (Annamma, 2018). As an inequitable system, incarceration fosters racial and ableist discrimination as it reinforces discriminatory beliefs, values, and distribution of resources, which together affect the risk of adverse outcomes (Bailey et al., 2017). The concern and consequences of differential treatment is that youth who are involved in the system, and specifically those receiving harsher sentences, are much more likely to reoffend and be involved in the incarceration system as adults (Campbell et al., 2018; Sherman & Jacobs, 2011).

The current model of service utilized by system facilities is to the detriment of the youth they are serving. In targeting the underlying sources of trauma and meeting the needs of the population of detained youth, a trauma-informed understanding of youth going through the

juvenile incarceration system has critical treatment implications. Presently, however, facilities are not suited to provide the necessary services for basic needs and trauma-informed care required for young people in custody. This is because many of the policies and practices of correctional systems are counter to a trauma-informed model (Rapp, 2016). In fact, children entering the incarceration system are oftentimes subject to other types of direct harm, including sexual abuse and harassment, physical violence, placement in restraints or solitary confinement, and further psychological trauma (Burrell, 2013). In a nationwide study, Wasserman et al. (2010) found that the prevalence of diagnosed disorders increased as youth became more entrenched within the juvenile incarceration system, suggesting that system involvement may exacerbate youths' existing mental health problems (Office of Juvenile Justice and Delinquency Prevention, 2017a). Another important factor to consider with system involvement is the effect of removal of children from parents and communities. The removal episode itself and placement into a facility may amplify adverse effects on the child, including a deterioration of social support for young people (Pettus-Davis et al., 2017).

Placement within the incarceration system is not considered one of the 15 ACEs, as identified by the CDC-Kaiser study and the Philadelphia Expanded ACE study. Although the association between ACEs and juvenile maladaptive behaviors, including delinquency, has become increasingly evident, it is relatively unclear as to whether out-of-home placement within the juvenile incarceration system serves as a predictor of further juvenile offending. Yet it seems reasonable to predict these negative outcomes from youth incarceration as Felitti and colleagues (1998) specifically wrote about the deleterious effects of having a parent or primary caregiver who was incarcerated. Research should endeavor to identify the role incarceration system involvement has on escalating problem behaviors (Farrington, 2003). The proposition of the

current study is that involvement with the incarceration system may have demonstrative effects on youth outcomes, similar to the 15 ACEs noted in the CDC-Kaiser and Philadelphia Expanded ACE studies. Out-of-home placements within the carceral system should begin to garner some attention for the possible detrimental effects they have, particularly on multiply marginalized disabled youth of color.

Education and Incarcerated Youth

All youth, including those in custody, have the right to publicly funded education in the U.S., and education in juvenile incarceration facilities is subject to federal civil rights laws such as the Elementary and Secondary Education Act of 1965. However, young people who interface with the juvenile incarceration system face a myriad of challenges, including in educational attainment and outcomes. Not only do youth experience disruption in access to and continuity of education as they transition at various points during their case proceedings (NDTAC, 2016; U.S. Department of Education, 2016), but research also demonstrates several shortcomings in education delivery in secure juvenile facilities (Gagnon et al., 2012). Furthermore, opportunities for higher education among this population are patterned by larger structural exclusions based on race, disability status, class, and place (Livingston & Miller, 2014).

Many researchers who have studied the effect of the incarceration system on educational outcomes have concluded that the system's response to delinquent behavior is likely contributing to negative educational outcomes (Aizer & Doyle, 2015; Eren & Mocan, 2017; Kirk & Sampson, 2013; Robinson et al., 2017), including academic failure and increased school dropout. Some researchers have attempted to measure the impact of confinement and out-of-home placements on educational outcomes independent of other confounding variables such as involvement in crime, family-related factors, and underserved neighborhoods. For example, a study by Aizer and

Doyle (2015) examined data of judges randomly assigned to cases in Chicago over ten years and found that, after controlling for demographic characteristics and crime severity, juvenile incarceration reduced high school graduation rates by 13% and increased adult incarceration rates by 22%. The literature also predicts that the more entrenched youth become in the juvenile incarceration system, the further they stray from a normative developmental trajectory, including high school completion and postsecondary education (Chung et al., 2011).

The transition out of incarceration and into adulthood can be especially difficult for the population of incarcerated youth with identified disabilities (House et al., 2018; Janus, 2009). Disability on its own is associated with difficulties in securing employment, a lower likelihood of completing a high school degree or enrolling in higher education, and barriers to independent living (Ameri et al., 2018; Janus, 2009; McCauley, 2020; She & Livermore, 2009), and these challenges can be exacerbated by having a history of system involvement. This population of students is at a very high risk for recidivism, even compared to their peers without disabilities who have also been incarcerated (Katsiyannis et al., 2012).

Later outcomes for incarcerated youth with disabilities are significantly poorer than their incarcerated peers without disabilities. A recent study focused on youth with identified emotional disabilities transitioning to adulthood and found that these youth were less likely to complete high school and were enrolled in post-secondary education at lower rates than their peers (Cheatham et al., 2020). Youth with disabilities who are transitioning to independent living face unique challenges that are often not appropriately met through existing services (Hill, 2010). Yet, this population is largely understudied in the literature as research to date has focused primarily on studying the impacts of disability and incarceration independently in the transition to adulthood (House et al., 2018). Youth with disabilities who have been involved in the juvenile

incarceration system likely face compounded risks to educational attainment, successful reentry to their communities, and ultimately in their transition to adulthood (Bullis et al., 2004). Poorer outcomes for this population demonstrate the need for additional support not only through progression in school while committed, but also in the transition out of the juvenile facilities and that continue into adulthood.

School Engagement as a Protective Factor

Literature suggests that the school setting plays an important protective role for youth against delinquent behavior and incarceration, and that returning to the school setting, either in incarceration or the community, can help to moderate the associated long-term educational and social outcomes (Blomberg et al., 2011; Bullis et al., 2002). Specifically, early researchers have found that youth who feel a sense of belonging at school, experience relative academic success, and develop positive relationships with teachers and social groups in school are less likely to engage in delinquent behavior (Arum & Beattie, 1999; Foley, 2001). More recent research demonstrates that system-involved youth who have these experiences, either while incarcerated or in their post-release schooling, are less likely to engage in serious offenses or recidivate following the return to their communities (Blomberg et al., 2011; Sharkey et al., 2011). Consistent attendance in school has also been shown to reduce negative outcomes as youths engaged in significantly less serious crime if they returned to and attended school regularly (Blomberg et al., 2011). These results suggest that the school environment can help promote success amongst youth with juvenile incarceration histories. The present study aims to explore school engagement as a protective factor against ongoing offending for youth with histories of incarceration, with a particular focus on the population of multiply marginalized youth of color.

CHAPTER THREE: METHODS

Overview

The present study aims to underscore the impact of out-of-home placement in the juvenile carceral system for multiply marginalized youth of color by examining juvenile behavior over time. Additionally, the study investigates whether the protective factor of education neutralizes the impact of system involvement on behavior. In other words, does a young person's level of engagement with their school build resilience and mitigate ongoing system-involvement? The results identify what, if any, relationships exist between the socially subordinate identities of race, disability status, and gender with juvenile detention facility placement on propensity to offend. Existing, open-sourced survey data collected from adjudicated youth from 2000 to 2010 as part of the longitudinal Pathways to Desistance study was used for the present study. A series of generalized linear mixed models was used to examine relationships between the independent variables on the outcome behavior variable. This chapter outlines the study's design, restates the research questions, and details the participants, settings, and instrumentation used by researchers during the collection of the study data. The chapter concludes with a description of the statistical analysis.

Methods

Participants

The aims of the Pathways to Desistance study were to identify initial patterns of how serious adolescent offenders stop engaging in antisocial activity, to describe the role of social context in promoting these positive changes, and to compare the effects of system placement and interventions, like detention facility placement, in promoting these changes. The larger goals of

the project were to improve decision-making by court and social service personnel and to clarify policy debates about alternatives for incarcerated youth.

The present study draws from extant data collected as part of the Pathways to Desistance study. Similar to other studies with incarcerated youth, the majority of the Pathways to Desistance study sample is male (86.4%). African Americans represent the largest race in the sample at 41%, followed by Hispanic youth at 33.5% and white participants at 20.2%. Researchers sought equal samples from both locations, however, Phoenix included slightly fewer participants than Philadelphia (48.3% and 51.7%, respectively). The age of the participants at enrollment ranged between 14 and 18, with majority of participants being 16 years old or younger (61.2%).

Sampling Procedures

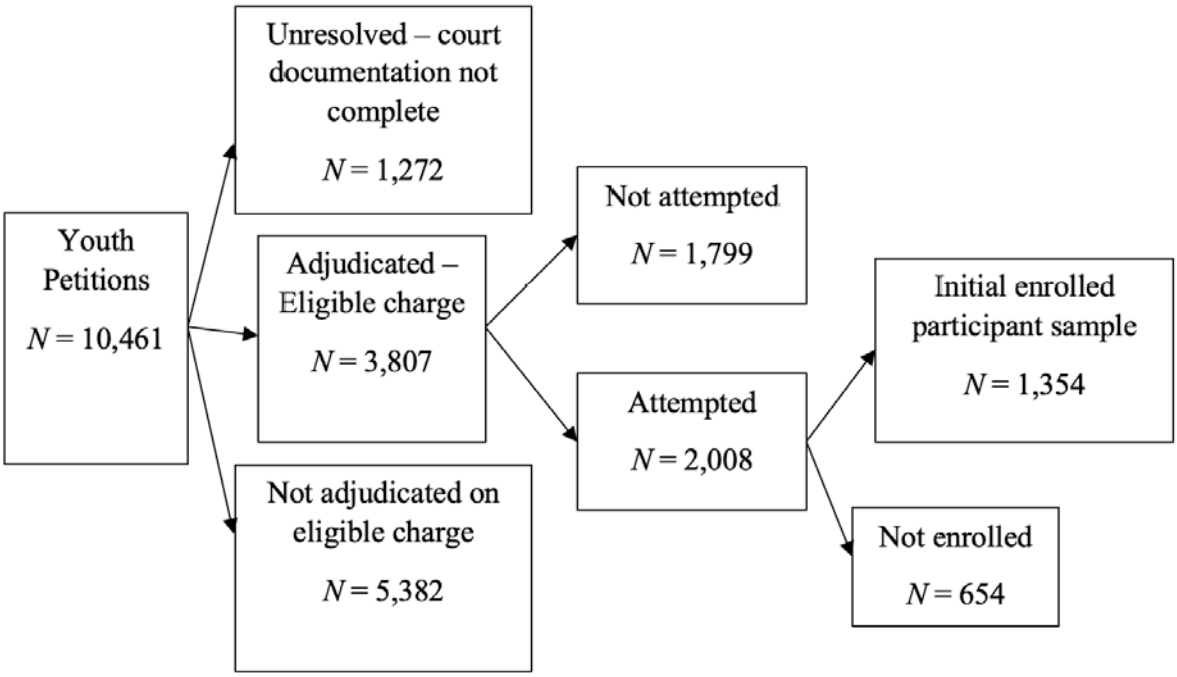
To be eligible for participation, individuals had to have been between the ages of 14 and 18 at the time of their committing offense and charged of a serious crime (Schubert et al., 2004). Adolescents enrolled in the study resided in two metropolitan cities, Philadelphia, PA, and Phoenix, AZ (Mulvey et al., 2004). Philadelphia and Phoenix were specifically chosen due to the availability of experienced research collaborators to oversee the data collection process. These cities also had comprehensive support for the project and cooperation from practitioners serving within the juvenile incarceration system, high enough rates of juveniles being charged with serious crimes, diversity in race and ethnicity of potential study participants, and a high enough number of female youth eligible for participation (Schubert et al., 2004).

Researchers of the Pathways study capped the percentage of male youth adjudicated for drug-related offenses at 15% to avoid overrepresentation of drug offenders within the pool of participants. All girls and young women who met the study's criteria for enrollment were invited

by coordinators to participate in the study. The researchers engaged youth following a review of court files with a guilty disposition of a severe offense. Eligible crimes included a vast majority of felonies, excluding less-serious felonies like property crimes and misdemeanor sexual assaults and weapons offenses (Schubert et al., 2004). During the enrollment period, Philadelphia and Phoenix court systems processed 10,461 individuals meeting the age and offense criteria. In 51% of the cases, youth were found not guilty for the felony as charged, or they had charges reduced below a qualifying felony offense. Researchers removed an additional 12% (1,272) of cases due to insufficient information in court files to determine an individual's eligibility status at the time of their adjudication. Additionally, researchers did not attempt to review 1,799 of the remaining 3,807 eligible cases due to the potential of overloading local screeners, and reviewed the cases of 2,008 youths to attempt to recruit for participation in the study. Of the youths invited to participate in the study by researchers, 1,354 consented (67%) to the terms for participation in the study (see Figure 1). The Pathway to Desistance study had high retention rates as 84% of the original sample at baseline completed the final interview.

Figure 1

Pathways to Desistance Study Participant Enrollment



Note. From "Operational Lessons from the Pathways to Desistance Project" by Schubert et al., 2004, *Youth Violence and Juvenile Justice, 2*(3), p. 248. Copyright 2004 Sage Publications.

Sample Size and Power

Of the youths approached by researchers, 1,354 consented to the terms for participation in the study. Given that not all participants were retained in the final wave of data collection (1,126 participants were retained throughout the entirety of the study), nor would all affirm experiencing placement within a detention facility or the protective factor examined in this study, confirming statistical power is noteworthy. A post-hoc power analysis conducted using the *G*Power* software suggests that there is a >99% chance of correctly rejecting the null hypothesis of no significant effect of the interaction for a total of 1,126 participants.

Measures

Offending Behavior

The Pathways to Desistance researchers measured youths' frequency of involvement in illegal activities using an adaptation of the Self-Reported Offending (SRO) measure (Huizinga et al., 1991). The SRO is a 24-item questionnaire tool in which participants disclose the estimated number of times they have been involved in different types of offenses. For the present study, total offending frequencies committed within the previous six months of the interviews were used as the continuous outcome variables. Total offending is defined as the total number of acts noted in the assessment during the recall period. These include estimated frequency of engagement across 10 income offenses, 11 aggression offenses, and carjacking someone, driving drunk or high, carrying a firearm, breaking into a vehicle to steal something, and joy-riding in a stolen vehicle (Mulvey et al., 2004). Subsequently, aggressive offending frequencies were examined independently to determine if notable differences exist between types of offending behavior. Offending behavior frequencies collected across three time points constitute the outcome variables.

Out-of-Home Placement Within the Juvenile Incarceration System

The Pathways to Desistance researchers solicited responses from participants in out-of-home placements commonly used within the juvenile incarceration system. The assessment method used a modified version of the Child and Adolescent Services Assessment (Mulvey et al., 2004). At the baseline interview, researchers and coordinators asked participants if they had received services in a range of settings. Settings included in the meetings were alcohol and drug treatment facilities, psychiatric treatment facilities, foster care, hospitalization, and detention facility commitments.

For the purpose of the present study, Detention Facility Placement was selected as the focal variable. This variable, out-of-home placement within a detention facility, is a dichotomous variable as it contains precisely two distinct values (Field, 2018). Eight hundred and eight (59.7%) respondents reported having spent at least one night in a detention facility. Responses were recorded as yes (1) or no (0) whether they had ever experienced at least one night in a detention facility. There were eight (0.6%) cases recorded as missing data for this item.

Disability Status

Labeling students with disabilities is a major contributor in the construction of a criminal identity (Annamma, 2018, p. 14). Disabilities for which identification is dependent upon the professional judgment – and often the biases – of the assessors because non-subjective and/or culturally responsive tests are not available were targeted in the present study. For the purpose of measuring the impact of disability labels that serve to criminalize youth and impact outcomes, the present study focuses on Intellectual Disability and Emotional Disabilities (Fish, 2017). This author created a *total disability composite.* This measure captures whether respondents met criteria for an intellectual disability (as identified by the Wechsler Abbreviated Scale of Intelligence) or an emotional disability (as identified a by the Composite International Diagnostic Interview and the Revised Children's Manifest Anxiety Scale). This composite was recorded as a binary variable (0 = no diagnosable disorder, 1 = at least one diagnosable disorder).

Wechsler Abbreviated Scale of Intelligence (WASI). The Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999) produces an estimate of general intellectual ability based on two subtests, Vocabulary (42 total items that require the subject to orally define 4 images and 37 words presented both orally and visually) and Matrix Reasoning (35 incomplete grid patterns that require the participant to select the correct response from five possible

choices). Administered in approximately 15 minutes, the WASI is a quick estimate of an individual's level of intellectual functioning, with higher scores indicating perceived greater intellectual ability. The WASI is linked to both the Wechsler Intelligence Scale for Children (WISC-III) and the Wechsler Adult Intelligence Scale (WAIS-III) and has been normed for individuals ages 6 to 89 years.

In the Pathways study, the WASI was administered on paper. Only the calculated scores were entered into the database. These scores are generated by the interviewer administering the test following the formula specified in the WASI Administrator's Manual. One hundred and ninety-eight (14.8%) participants' performance on this measure yielded a Full Scale Intellectual Quotient (FSIQ) standard score of 69 or below and were presumed to be labeled as having an intellectual disability. These participants were coded as a 1 (identified as having an ID label). Those whose performance yielded an FSIQ standard score of 70 or above were coded as 0 (identified as not having an ID label). There were twelve cases (0.9%) of missing data for this item due to assessment refusal or incomplete items.

Composite International Diagnostic Interview (CIDI). The Composite International Diagnostic Interview (CIDI; World Health Organization, 1990) is a comprehensive, structured interview commonly used to assess mental disorders. By means of computerized algorithms, the CIDI provides both lifetime ("Ever") and current ("Past year" & "Past 30 days") diagnosis as defined by the DSM-IV and ICD-10. The entire CIDI was not administered. The following eight modules were selected for the purpose of the Pathways study: Major Depressive Disorder, Dysthymia, Manic Episode, Posttraumatic Stress Disorder, Alcohol Abuse, Alcohol Dependence, Drug Abuse, and Drug Dependence. For the purposes of the present study, only the modules of lifetime diagnoses of Major Depressive Disorder and Posttraumatic Stress Disorder were used.

During the interview, all participants are asked questions about selective symptoms of psychiatric disorders. Based on predetermined skip patterns, positive responses to these screening items are followed by more detailed questions to determine if the endorsed symptom is a psychiatric symptom and is not due to medication, drugs, alcohol, or to a physical illness or injury. If symptoms were endorsed and occurred in a pattern which suggested a diagnosis might be present, additional questions were asked to establish the onset and recency of the symptoms. Ninety-eight (7.2%) participants endorsed items suggesting that their symptomology met criteria for Major Depressive Disorder and 87 (6.4%) participants met criteria for Posttraumatic Stress Disorder. Considering that this author is specifically concerned with the predictors of clinically significant depression and posttraumatic stress disorder, these variables were recorded as a binary score (0 = not clinically significant, 1 = clinical range) using a standardized score derived from the total number of items endorsed that was then compared to gender-specific cut-off score criteria.

Revised Children's Manifest Anxiety Scale (RCMAS). The Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985, 2000) is a 37-item, self-report instrument designed to assess the level and nature of anxiety. A response of "Yes" indicates that the item is descriptive of the subject's feelings or actions, whereas a response of "No" indicates that the item generally does not apply. A Total Anxiety Score is computed based on 28 items, which are divided into three anxiety subscales; physiological anxiety (10 items about somatic manifestations of anxiety such as sleep difficulties, nausea and fatigue), worry/oversensitivity (11 items measuring obsessive concerns about a variety of things, most of which are typically vague and ill-defined, as well as fears about being hurt or emotionally isolated), and social concerns/concentration (7 items measuring distracting thoughts and fears that have a social or

interpersonal nature). The remaining nine items on the RCMAS constitute the Lie subscale. The scale calculated from this instrument that were used for the present study is Total Anxiety Score. Because scores are derived from affirmative responses, a higher score on the total anxiety score indicates high levels of anxiety. This scale was re-coded as a binary score (0 = not clinically significant, 1 = clinical range) using a standardized score derived from the total of the 28 items that was then compared to gender-specific cut-off score criteria.

School Engagement

The school engagement items included in this study were taken from the work of Cernkovich and Giordano (1992). The items are used to evaluate the youths' educational experience within their community schools along two dimensions: Bonding to Teachers (e.g., "Most of my teachers treat me fairly.") and School Orientation (e.g., "Schoolwork is very important to me."). Respondents rated 13 statements, using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." Pathways to Desistance researchers recorded the mean score for youth responses, with higher scores indicating a greater degree of engagement. This variable was recoded for the present study so that each level of school attachment is a dichotomous variable that represents a separate subgroup in the final model for analysis.

Procedures

From the efforts of the MacArthur Foundation Research on Adolescent Development and Juvenile Justice Project, the Pathways to Desistance project endeavored to contribute to the discussion regarding treatment and interventions for incarcerated youth by way of a longitudinal study that took place over seven years (Mulvey et al., 2014). Data collection began with enrollment of adjudicated youth in the study between November 2000 and January 2003. Following the recruitment of study participants, informed consent was obtained from the youth

and their parents or guardians (Schubert et al., 2004). They further surmised that baseline interviews with youth and adult collaterals began within 75 days of the youth's adjudicatory hearing. Baseline interviews for youth involved in the adult system took place within 90 days.

At 6-month intervals and lasting for 3 years, participants completed time point interviews. Because the date of each of the 6-month interval interviews was calculated based on the date the baseline was completed, the identical measurement periods proved statistically easier. As Schubert et al., (2004) noted, the 6-month intervals "simplified the statistical analyses required to assess developmental processes, environmental changes, and their relations to changes in behavior" (p. 239). Additionally, one year after baseline interviews and annually thereafter, researchers sought collateral information from peers. The conscience shift from parent collaterals conducted at baseline to peers provided researchers the opportunity to obtain information about participants' current behaviors (building on previous research suggesting that peers better report on deviant behavior than parents; Schubert et al., 2004).

Including the baseline interview, there are 11 waves of data available. Depending on when participants enrolled in the study, the last interview occurred between 2007 and 2010. Due to the comprehensive information gathered during baseline, the initial interviews consisted of two, two-hour meetings. Both the baseline and time-point interviews included questions covering six domains: (a) demographic information, (b) individual functioning, (c) community conditions, (d) quality of personal relationships, (e) family structure, and (f) psychological development.

Statistical Analyses

The goal of the present analysis was to determine whether the frequency in offending behavior varied over time for incarcerated youth based on different identities and system experiences. Specifically, six predictors were selected for this study: (a) site location, (b)

racial/ethnic identity, (b) disability status, (c) gender identity, (d) history of detention facility placement, and (e) level of high school engagement. To quantify individual variation over the course of the study, a series of generalized linear mixed models were employed.

The generalized linear mixed model (GLMM) is a statistical framework that broadens the traditional general linear model to include variables that are not normally distributed, relationships that are not strictly linear, and data that have dependency. The data used within the present study utilizes the outcome variable of offending frequencies, which is count data that has a clearly right-skewed distribution. This means that a disproportionate number of participants reported offending zero times, and this pattern was found to be consistent across all time points observed. While other statistical analyses have been shown to be robust to non-normality (Kanji, 1976; Khan & Rayner, 2003; Schmider et al., 2010; Ferreira et al., 2012; Blanka et al., 2017), they have been found to not be optimal with count data (Aiken et al., 2015). Generalized linear mixed models can be developed for non-normally distributed responses.

Generalized linear mixed models represent an important class of models for regression analysis of discrete and continuous longitudinal data. Longitudinal data often has inherent correlation within its structure due to multiple observations made across time for each participant. These repeated measures lead to correlated observations and, as such, violates the assumption of independence required for traditional regression methods. Mixed models can handle both systematicity and individuality because they can deal not only with usual within- and between-youth fixed-effects variables (i.e., systematicity), but also with remaining variance across and within youth (i.e., individuality). Therefore, generalized linear mixed models can account for hierarchical data structures and allows this author to quantify individual variation

over time. Partly for this reason, mixed-effects models have been widely used in longitudinal data analyses (Long, 2012).

Thiele and Markussen (2012) defined GLMMs as regression models that not only allow researchers to choose among various distributions, but also to select different link functions in order to model a wide range of types of dependent variables through linear combinations of one or multiple predictor variables (fixed effects). The link function is a continuous function that transforms values of the response variable so that they match the scale of the linear predictors. This means there is a correspondence between distributions and link function. In this dissertation, offending behavior change over time was specified as a function of time in the study (i.e., month 1, 36, or 72). A model that included fixed and random linear effects for time was used to examine change in offending behavior over the course of the study period.

Model Specification and Model Selection

In general, for the inference of count data, the four most commonly used statistical model distributions are the Poisson, Negative Binomial, Hurdle, and Zero-Inflated regression models. In instances where the variances are greater than the mean, a phenomenon that is called over-dispersion, the model that works in such a condition is the negative binomial regression model. The negative binomial model is a generalization of the Poisson model, which relaxes the restrictive assumption that the variance and mean are equal (Hilbe, 2011; Hilbe 2014). Due to the disproportionate number of participants reporting "zero" as the number of offenses committed within the last 6 months of each observed time point, a negative binomial distribution (i.e., $g(\cdot) = log\left(\frac{\mu_i}{\mu_i+\theta}\right)$was used to model frequency of offending behavior as a count variable. Thus, the generalized linear mixed model used in this dissertation is expressed in Equation 3.1 for the negative binomial model.

$$log\left(\frac{\mu_i}{\mu_i+\theta}\right) = \beta_0 + \gamma_{0i} + X_i \quad (3.1)$$

where,

β_0 = fixed intercept,

γ_{0i} = random intercept for i^{th} participant,

= vector of fixed effects,

X_i = design matrix of fixed effects.

Reports of offending behavior frequencies were nested within individual youth who were nested within site locations and, in turn, nested within time. Random effects were included for time and intercept, which increases the accuracy of the parameter estimates. Identity variables of racial/ethnic identity, disability status, and gender identity, and the system experience variable of detention facility placement, were added to the previous model as time-invariant fixed effects. Due to missing data for school engagement across the 36- and 72-month time points, school engagement as reported by youth at month 1 was entered into the model as a continuous variable. The generalized linear mixed models were run using the restricted maximum likelihood estimator; p-values < .05 were interpreted as statistically significant. Assumptions of linearity and homoscedasticity were met and multicollinearity was within acceptable limits. There were concerns for non-normality of residuals, therefore robust estimation of covariances was used.

CHAPTER FOUR: RESULTS

The following chapter presents the results of each analysis conducted as part of this dissertation study. Hypotheses were tested using generalized linear mixed-effects models. Two models were run for each research question; one model examined patterns of overall offending behavior over time and one model examined patterns of aggressive offending behavior over the course of the study. Statistical analyses were performed using SPSS v27.0. Descriptive statistics including means and standard deviations for the examined variables are reported in Table 1.

Table 1.
Sample Descriptives

Categorical Variable	**N (%)**
Site	
PHL	700 (51.7%)
PHX	654 (48.3%)
Race & Ethnicity	
White	274 (20.2%)
Black	561 (41.4%)
Hispanic	454 (33.5%)
Other	65 (4.8%)
Gender	
Male	1170 (86.4%)
Female	184 (13.6%)
Disability	
Yes	418 (31.7%)
No	902 (68.3%)
Overnight Stay in Detention Setting	
Yes	538 (39.7%; 40.0%)
No	808 (59.7%; 60.0%)
Missing	*8 (0.6%)*
Continuous Variable	**M (SD; Min-Max)**
Age	
0 months (n = 1354)	16.04 (1.14)
36 months (n = 1232)	19.01 (1.15)
72 months (n = 1179)	22.03 (1.15)
High School Engagement	
0 months (n = 1221)	3.51 (0.81)
36 months (n = 276)	3.90 (0.64)
72 months (n = 133)	4.12 (0.52)
College Engagement	
36 months (n = 12)	1.63 (0.49)
72 months (n = 58)	2.05 (0.70)
Offending Frequency	
1 month (n = 1351)	152.45 (372.99; 0-3493)
36 months (n = 1231)	53.23 (260.17; 0-3013)
72 months (n = 1169)	58.21 (214.33; 0-3163)

Results for Research Question #1: Are the demographic variables of disability status, racial/ethnic identity, and gender related to offending?

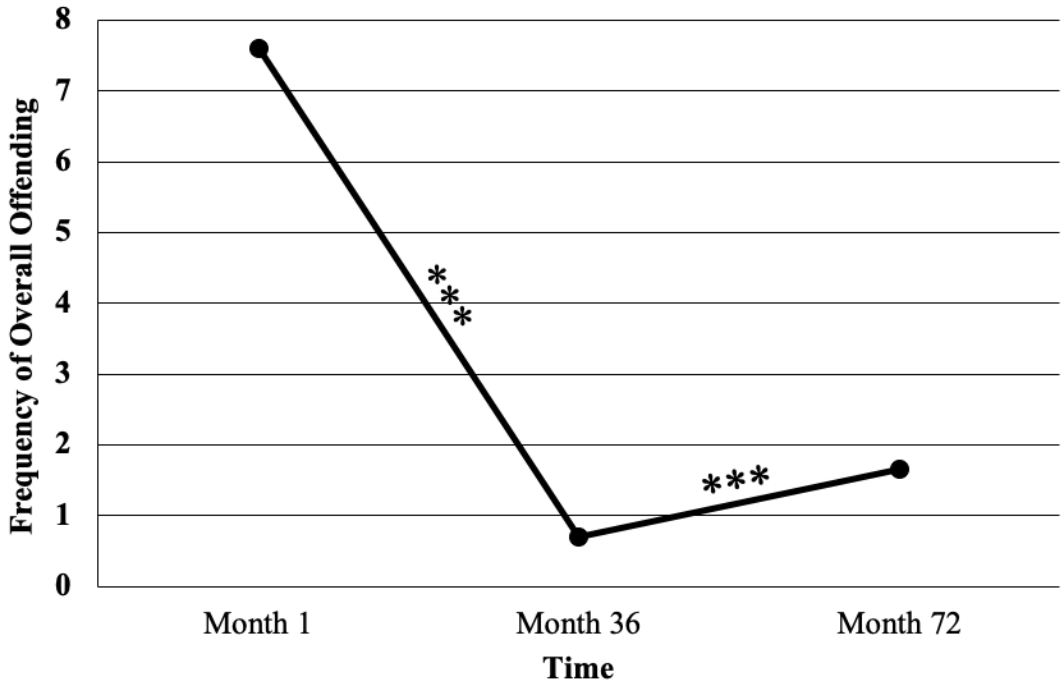
Results for GLMM Measuring Overall Offending Behavior. The first generalized mixed-effects model sought to determine whether the frequency in overall offending behavior varied over time for incarcerated youth based on different identities. The variables of site location, racial/ethnic identity, disability status, and gender identity were entered into this first model as time-invariant covariates. Results from the generalized linear mixed model observing overall offending behavior are reported in Table 2.

Table 2.
GLMM Results for Identity Variables as Predictors and Overall Offending

	Overall Offending Behavior	
	RR	95% CI
Fixed Effects		
(Intercept)	1.54*	1.02-2.31
Site [a]	0.65**	0.48-0.89
Month 1[b]	4.21***	3.60-4.91
Month 36[b]	0.64***	0.52-0.78
Black youth[c]	0.87	0.60-1.27
Hispanic youth[c]	0.87	0.63-1.20
Other racial groups[c]	0.73	0.39-1.37
Gender[d]	3.40***	2.47-4.68
Disability[e]	0.65**	0.50-0.85
Random Effects		
Intercept	4.08***	3.70-4.50
Model Summary		
-2 Log Likelihood	16852.60	

Note: *$p < .05$; **$p < .01$; ***$p < .001$;
[a] Philadelphia is the reference category
[b] Month 72 is the reference category
[c] White youth is the reference category
[d] Female youth is the reference category
[e] Non-disabled youth is the reference category

In general, a decrease in offending behavior was observed over the course of the study. Specifically, youth reported offending at about four times the rate at month 1 compared to month 72 of the study ($RR_{Month1vs72} = 4.207$, $p < .001$, 95% CI: 3.602-4.914). Youths' reported offending frequencies did not consistently decline throughout the course of the study as youth reported offending at lower rates at month 36 compared to month 72 of the study ($RR_{Month36vs72} = 0.638$, $p < .001$, 95% CI: 0.524-0.776). This pattern of offending frequencies over time is demonstrated in Figure 2.



*Note: *p < .05; **p < .01; ***p < .001*
Figure 2. Predicted Frequencies of Overall Offending Behavior Over Time

Significant differences were observed in offending rates across the Philadelphia and Phoenix locations with lower rates reported in Philadelphia (RR = 0.651, $p = .007$, 95% CI: 0.478-0.888). There was no main effect found for racial/ethnic identity in this model, suggesting that there is no evidence showing different offending patterns across groups. Male-identifying participants were found to report offending at three times the rate relative to their female-

identifying counterparts (RR = 3.400, $p < .001$, 95% CI: 2.473-4.675). A main effect was found for disability as disabled youth were discovered to report significantly higher rates of offending than non-disabled youth (RR = 0.654, $p = .001$, 95% CI: 0.504-0.848). Significant effects were not present for the gender identity x time interaction, indicating that there is no evidence showing different longitudinal patterns of offending frequencies between male and female identifying youth. The disability status x time interaction was also not retained in this model. This outcome shows that the rate of longitudinal offending frequencies is similar between disabled and non-disabled youth.

Results for GLMM Measuring Aggressive Offending Behavior. An additional generalized linear mixed model was conducted to look specifically at predicted frequencies of aggressive behaviors reported by youth over the course of the study. Once again, the variables of site location, racial/ethnic identity, disability status, and gender identity were entered as time-invariant covariates. Results from this model observing aggressive offense frequencies can be referenced in Table 3.

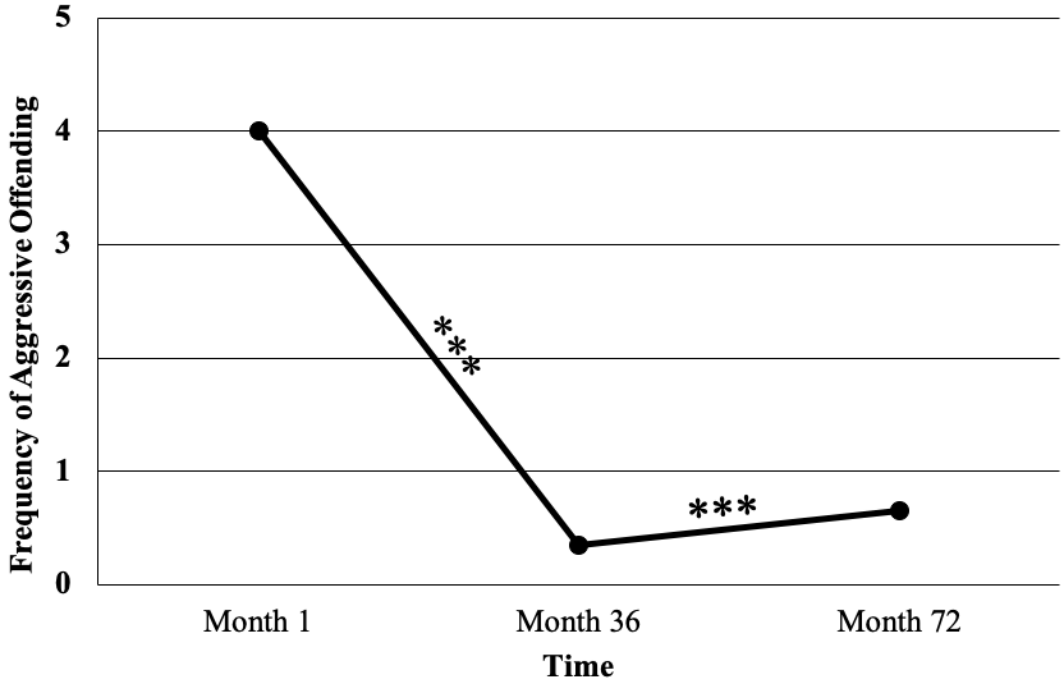
Table 3.
GLMM Results for Identity Variables as Predictors and Aggressive Offending

	Aggressive Offending	
	RR	95% CI
Fixed Effects		
(Intercept)	0.34***	0.24-0.48
Site [a]	0.82	0.63-1.06
Month 1 [b]	9.84***	8.60-11.25
Month 36 [b]	0.74***	0.63-0.87
Black youth [c]	0.72*	0.53-0.98
Hispanic youth [c]	0.92	0.69-1.21
Other racial groups [c]	0.76	0.44-1.33
Gender [d]	2.70***	2.03-3.60
Disability [e]	0.65***	0.53-0.80
Gender [d] x Month 1 [b]	0.33***	0.18-0.63
Gender [d] x Month 36 [b]	0.53	0.26-1.11
Disability [e] x Month 1 [b]	1.07	0.76-1.51
Disability [e] x Month 36 [b]	1.24	0.81-1.89
Random Effects		
Intercept	2.44***	2.20-2.71
Model Summary		
-2 Log Likelihood	15460.33	

Note: *$p < .05$; **$p < .01$; ***$p < .001$;
[a] Philadelphia is the reference category
[b] Month 72 is the reference category
[c] White youth is the reference category
[d] Female youth is the reference category
[e] Non-disabled youth is the reference category

Similar to the previously discussed model observing overall offending behavior, there was a significant effect found for time in this model. Youth reported aggressive offending nine times more at month 1 compared to month 72 of the study ($RR_{Month1vs72} = 9.835$, $p < .001$, 95% CI: 8.597-11.252). However, the decline in aggressive offenses was not linear as there was a small but statistically significant increase in aggressive offending from month 36 to month 72

($RR_{Month\ 36vs72}$ = 0.736, p < .001, 95% CI: 0.626-0.866). These results are demonstrated by Figure 3.



*Note: *p < .05; **p < .01; ***p < .001*

Figure 3. Predicted Frequencies of Aggressive Offending Over Time

No effect was found for site location, suggesting similar rates of aggressive behaviors reported across the Philadelphia and Phoenix sites. Importantly, Black youth reported significantly lower rates of aggressive offenses than their white counterparts (RR = 0.719, p = .034, 95% CI: 0.530-0.976). Consistent with the previous model investigating overall offenses, male-identifying participants reported aggressive offending at two times the rate compared to female-identifying participants (RR = 2.703, p < .001, 95% CI: 2.031-3.597), and disabled youth reported significantly higher rates of aggressive offenses relative to non-disabled youth (RR = 0.650, p < .001, 95% CI: 0.527-0.801). As shown in Figure 4, the gender x time interaction was retained in the final model.

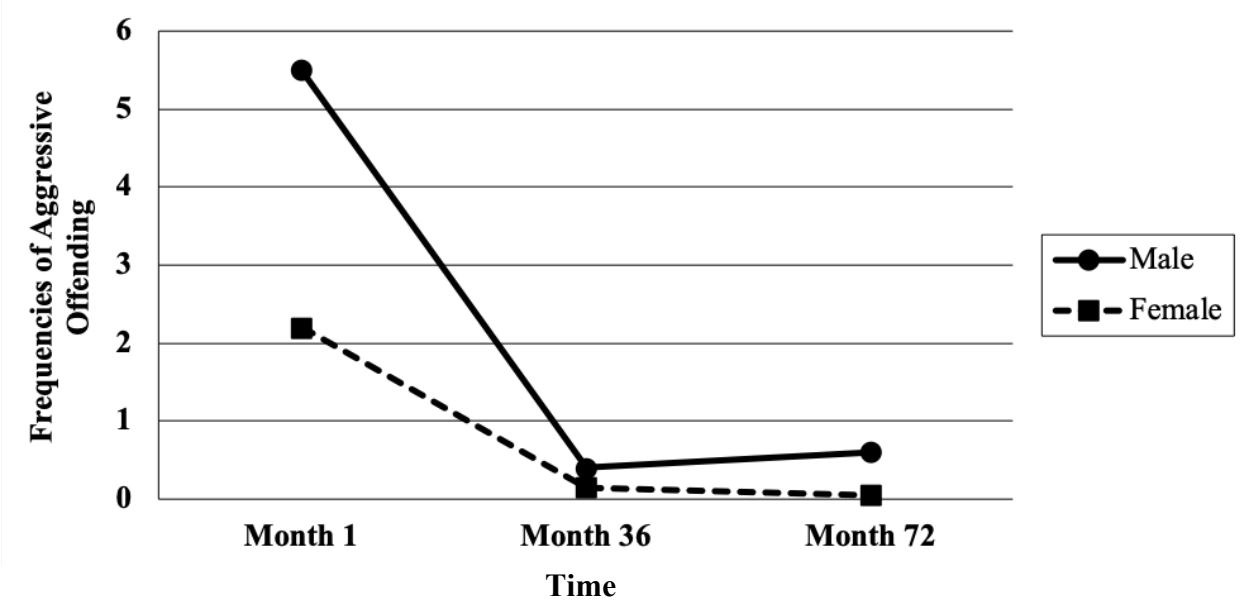


Figure 4. Predicted Frequencies of Aggressive Offending for Males and Females Over Time

This outcome provides evidence for different longitudinal patterns of aggressive behaviors between male and female participant groups. No significant effect was found for the disability status x time interaction for this model.

Results for Research Question #2: Do out-of-home placements within the juvenile incarceration system such as detention facilities increase juvenile offending over time?

Results for GLMM Measuring Overall Offending Behavior and Placement. A generalized linear mixed-effects model was used to determine if being placed within a detention facility, as opposed to being diverted to community services, prior to adjudication was related to frequency of offending behavior over the course of the study. In examining overall offending frequencies, site location and detention facility placement were included in the generalized linear mixed model as time-invariant covariates. The results from this model can be referenced in Table 4.

Table 4.
GLMM Results for Detention Facility Placement and School Engagement on Overall Offending

	Overall Offending Behavior	
	RR	95% CI
Fixed Effects		
(Intercept)	23.85***	9.16-62.13
Site[a]	1.07	0.83-1.39
Month 1[b]	4.07***	1.91-8.69
Month 36[b]	0.37*	0.15-0.93
Detention Placement[c]	2.13***	1.43-3.16
School Engagement	0.64***	0.50-0.81
Detention[c] x Month 1[b]	1.67**	1.21-2.26
Detention[c] x Month 36[b]	1.64*	1.10-2.44
School Engage x Month 1[d]	0.78*	0.64-0.95
School Engage x Month 36[d]	1.06	0.83-1.34
Random Effects		
Intercept	4.57***	4.15-5.04
Model Summary		
-2 Log Likelihood	15471.89	

Note: *$p < .05$; **$p < .01$; ***$p < .001$;
[a] Philadelphia is the reference category
[b] Month 72 is the reference category
[c] No history of detention facility placement is the reference category
[d] School Engagement at 72 months is the reference category

A main effect for time was found to be significant. Youth reported significantly fewer offenses between month 1 and month 72 of the study ($RR_{Month1vs72} = 4.070$, $p = <.001$, 95% CI: 1.907-8.685), with the lowest offending frequencies reported at month 36 ($RR_{Month\ 36vs72} = 0.370$, $p = .034$, 95% CI: 0.148-0.926).

Results showed no significant difference in reported offending rates across the Phoenix and Philadelphia locations. A main effect was observed for detention facility placement in this model. Youth with a history of detention facility placement reported offending at two times the rate of those who were diverted to community supports prior to adjudication (RR = 2.129, $p = <$

.001, 95% CI: 1.434-3.162). As shown in Figure 5, the time x detention placement interaction was found to be significant in the final model.

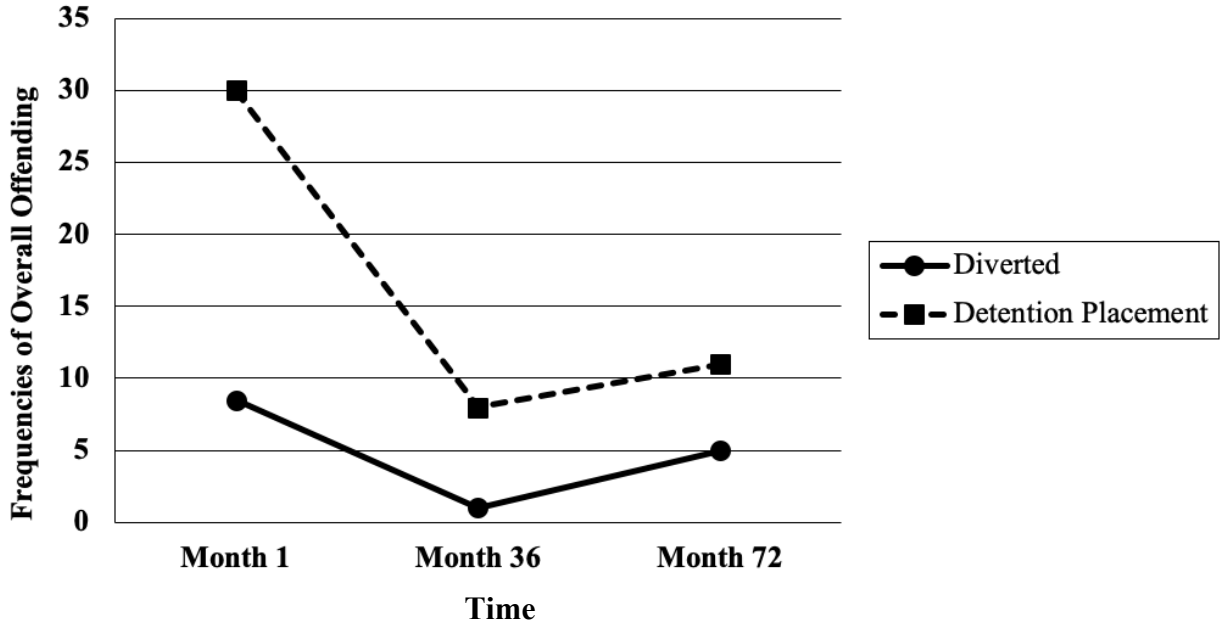


Figure 5. Predicted Frequencies of Offending by Detention Facility Placement and Community Diversion Over Time

This outcome shows that the rates of offending behavior over time are different across participants who experienced detention facility placement and those who remained in their home communities.

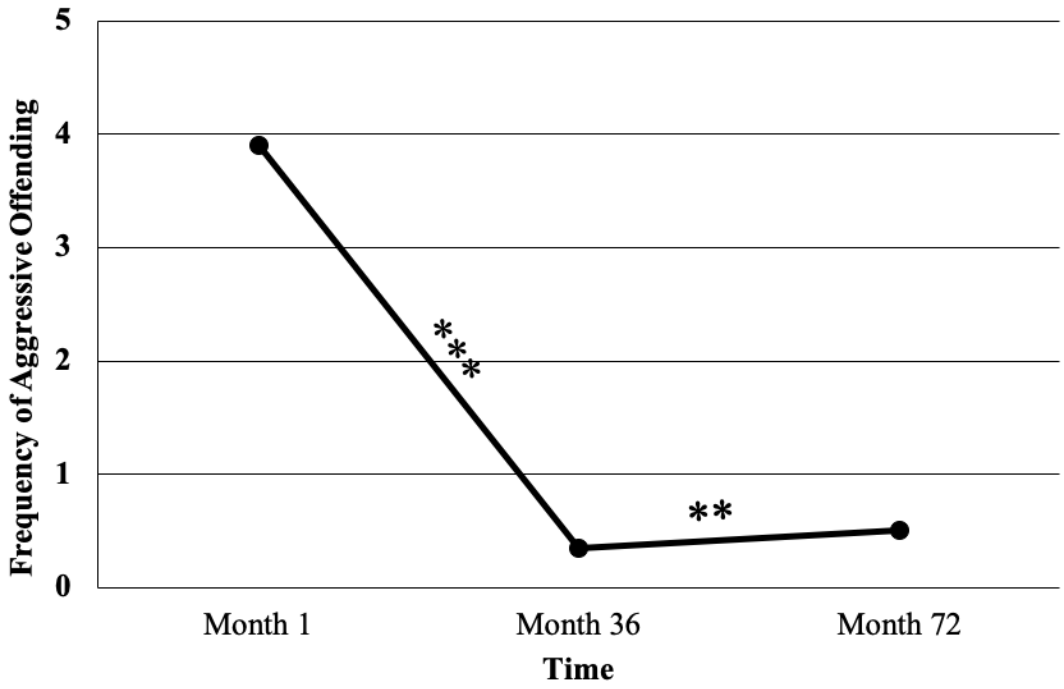
Results for GLMM Measuring Aggressive Offending Behavior and Placement. A generalized linear mixed model was conducted to examine any patterns in rates of aggressive offending behavior associated with detention facility placement. Results from this model are represented in Table 5.

Table 5.
GLMM Results for Detention Facility Placement and School Engagement on Aggressive Offending

	Aggressive Offending	
	RR	95% CI
Fixed Effects		
(Intercept)	2.67*	1.20-5.92
Site [a]	0.77**	0.63-0.93
Month 1[b]	4.55***	2.24-9.26
Month 36 [b]	0.33**	0.14-0.76
Detention Placement [c]	1.35	0.95-1.91
School Engagement	0.64***	0.51-0.79
Detention[c] x Month 1[b]	1.50*	1.09-2.05
Detention[c] x Month 36 [b]	1.23	0.85-1.77
School Engage x Month 1[b]	1.08	0.88-1.31
School Engage x Month 36[b]	1.15	0.91-1.45
Random Effects		
Intercept	2.18***	1.95-2.44
Model Summary		
-2 Log Likelihood	14301.38	

Note: *$p < .05$; **$p < .01$; ***$p < .001$;
[a] Philadelphia is the reference category
[b] Month 72 is the reference category
[c] No history of detention facility placement is the reference category

A main effect for site location was revealed as significantly lower rates of aggressive offenses were reported in Philadelphia compared to Phoenix (RR = 0.769, $p = .008$, 95% CI: 0.634-0.932). Results for aggressive offenses showed a main effect for time in a 'reverse check mark' pattern as demonstrated in Figure 6.



*Note: *p < .05; **p < .01; ***p < .001*

Figure 6. Predicted Frequencies of Aggressive Offending Over Time

Youth reported aggressive offending at over four times the rate at month 1 compared to month 72 of the study ($RR_{Time1vs3} = 4.554$, $p < .001$, 95% CI: 2.239-9.264). Results also showed an increase in aggressive offenses from month 36 to month 72 ($RR_{Time2vs3} = 0.328$, $p = .009$, 95% CI: 0.143-0.756). There was no significant main effect observed for placement within a detention facility. However, the effect for detention facility placement at month 1 of the study was significantly different than the effect for detention facility placement at month 72. These observations suggest that there are no major differences in rates of aggressive offenses for those placed within a detention facility compared to those who remained in their home communities prior to adjudication. To note, for those who have a history of detention facility placement, their rates of aggressive offenses were significantly different from the start of the study compared to the end. However, no significant differences were found between month 36 and month 72 for these participants.

Results for Research Question #3: Is the protective factor of school engagement effective in neutralizing the impact of system involvement on offending behavior?

Results for GLMM Measuring Overall Offending Behavior and School Engagement.

A final series of generalized linear mixed-effects models were employed to measure the role that high school engagement potentially plays in predicting the frequency of offending reported by incarcerated youth. In alignment with the literature that addresses the effect of the incarceration system on educational outcomes (Aizer & Doyle, 2015; Eren & Mocan, 2017; Kirk & Sampson, 2013; Robinson et al., 2017), including increased school dropout and extremely low numbers of enrollment in higher education, substantial rates of survey responses on high school engagement were listed as missing data at the time points of month 36 and 72 of the study. As such, high school engagement ratings gathered at intake were examined as a continuous variable.

Results from this model (shown in Table 4) reveal lower rates of overall offending among youth who endorsed higher engagement in high school (RR = 0.534, $p < .001$, 95% CI: 0.397-0.717). The time x high school engagement interaction was not retained in this final model. This means that there is no evidence showing different longitudinal patterns in offending rates across various levels of high school engagement.

Results for GLMM Measuring Aggressive Offending Behavior and School Engagement.

A generalized linear mixed model was employed to specifically observe aggressive behavior rates as it relates to one's high school engagement. Results included within Table 5 show a similar outcome of lower rates of aggressive offending among youth who reported being more engaged in high school (RR = 0.635, $p < .001$, 95% CI: 0.511-0.789). The high school engagement x time interaction was not significant in this model, suggesting limited

differences in aggressive offenses across the study for the various levels of high school engagement.

CHAPTER FIVE: DISCUSSION

Overview

The following chapter includes a discussion of the results presented in chapter four, along with the implications and limitations of the study. The chapter concludes with recommendations for future research. The current study examined whether a set of variables representing different aspects of identity and incarceration system experiences predicted changes in rates of offending behavior in system-involved youth over time. Using archival data from the Pathways to Desistance study, a series of generalized linear mixed-effects models analyzed the outcome variable (offending) with two categories (total offending and aggressive offending) and five predictor variables (racial/ethnic identity, gender identity, disability, detention facility placement, and school engagement).

Discussion

The goal of the present study was to determine the extent to which frequency in offending behavior varied over time across individual youth based on different identities and system experiences. As an inequitable system, incarceration fosters racism and ableism discrimination as it reinforces discriminatory beliefs, values, and distribution of resources, which together affect the risk of adverse outcomes (Bailey et al., 2017). The concern for differential treatment is that youth who are involved in the system, specifically those receiving harsher sentences, are much more likely to reoffend and have ongoing involvement with the incarceration system into adulthood (Campbell et al., 2018; Sherman & Jacobs, 2011). This consequence supports the theory that juvenile incarceration may be defined as an adverse childhood experience (ACE). The results of this study expand on previous literature reviewed in

Chapter 2, and were found to, in large part, support the proposed hypotheses. The following discussion focuses on the nexus between the current findings and previous literature.

Research Question 1

Offending Over Time

The first research question asked if the demographic variables of racial/ethnic identity, gender, and disability status were related to offending frequencies over the course of the study. Overall, the results indicated that there was a significant effect found for offending behavior over time. Specifically, the great majority of study participants reported low levels of offending following court involvement and, in general, a significant portion of those with high levels of offending reportedly reduced their reoffending dramatically. However, this reduction in offending behavior was not found to be linear. While significant reductions in illegal activity were observed three years following system introduction, youth self-reported re-offending six years following system involvement as offending frequencies were found to raise by a small but statistically significant amount between month 36 and month 72 of the study. This 'reverse check-mark' pattern of offending over time was found to be consistent across each analytic model conducted, including models that examined frequencies of overall offending behavior and those that looked specifically at rates of aggressive offenses.

An important conclusion of these results is that most young people who have committed higher rates of serious offenses are not necessarily on track for adult criminal careers. This overall reduction in offending rates over time supports previous studies investigating the persistence of juvenile offending. For system-involved youth, the likelihood of offending diminishes as an individual matures (Barrett & Katsiyannis, 2016). The initial offending reduction could also be attributed to what many consider to be "the redemptive powers of

juvenile incarceration" and its effect lasting for several years following release (Annamma, 2018, p. 108). However, this study's participating youth were found to report a small but statistically significant increase in re-offending after three years, which could insinuate that the effect of juvenile incarceration may not last in the long term. In fact, prior research suggests emerging adults have the highest recidivism rate of any age group (Durose et al., 2014), and difficulties with educational engagement and unemployment following release have been found to greatly contribute to this recidivism cycle (Apel & Sweeten, 2010; Durose et al., 2014; U.S. Department of Education, 2016). Therefore, reoffending may be due to the myriad of challenges and barriers young people face as they transition from system involvement back to community-living. Having been previously arrested for a felony and having been incarcerated as a juvenile have both been found to be significant predictors for adult arrests and system re-entry (Barrett & Katsiyannis, 2016).

Findings from this study and related literature seem to indicate that juvenile incarceration is not effective in improving long-term outcomes for system-involved youth, even for many of those who have committed the most serious offenses. A history of incarceration and reduced offending do not necessarily protect young people against ongoing system involvement and recidivism. Given that community-based supervision may reduce reoffending, promote prosocial attitudes and behaviors (Mulvey et al., 2010; Wasserman, 2010), and prevent disrupting one's social support (Pettus-Davis et al., 2017), educational engagement (Aizer & Doyle, 2015; Gagnon et al., 2012), and employment opportunities (Apel & Sweeten, 2010; Middlemass, 2017), integrating treatment into community-based services may realize greater benefits in eliminating serious adolescent offending while providing more efficient and effective delivery of supportive services.

Racial/Ethnic Identity

Race has a clear, deep influence on who is criminalized. Young African American males are incarcerated at a rate that is approximately six times that of non-Hispanic white men (Hockenberry, 2018). African Americans are also more likely than any other racial/ethnic group to receive longer, harsher sentences (Oliver, 2001). Yet, results from this study that examined overall offending behaviors found no significant effect for racial/ethnic identity. When focusing solely on aggressive offenses reported by youth, Black youth reported committing significantly lower rates of aggressive offenses than their white counterparts. These youth-reported results make important additions to the literature by disrupting stereotypes and countering common assumptions held of criminal profiles.

Introduction to juvenile incarceration is not a neutral decision made with the intent to provide rehabilitation to those who commit the most frequent and/or severe offenses. If this were the case, we would expect this study's results to demonstrate more frequent and severe offenses across certain racial/ethnic groups that align with current incarceration rates. In light of these findings, mass criminalization can be more accurately described as targeted racial criminalization, or "interconnections and intersections of white supremacy within the criminal justice system and seemingly neutral social institutions" (Rabaka, 2010, p. 308). In other words, the discrepancy between this study's self-reported offenses and rates of incarceration give strength to the idea that system decisions are race-based, and that system-involvement serves to further exclude, punish, and reinforce inequities for those who deviate from the white norm.

Dr. Subini Annamma's work provides qualitative evidence of how criminal identities are constructed through race and maintained through invasive socializing practices enacted within incarceration institutions. Through a series of interviews with facility providers and staff,

Annamma highlights that a common rationale for why multiply-marginalized youth of color needed to be in incarceration was due to their "criminal thinking". Criminal thinking acts as a mediational tool that is present in defense of why young people of color have to be incarcerated; it was offered as a fact that the youth at the facility were more manipulative and dangerous than other youth, and that is why they were incarcerated. Every staff member and facility provider that Annamma interviewed mentioned this criminal thinking and emphasized how this thinking was different and more dangerous than others' thinking, and that the young people of color at the facility had to be incarcerated for the safety of themselves and others. Moreover, the rhetoric of incarcerating only the most dangerous youth – language that had been adopted from the Juvenile Justice Department and its claims for reducing the number of youth incarcerated – meant that harsh responses to detained youths' actions were considered justified as their thinking was imagined as remarkably criminal. Therefore, when incarcerated youth of color break any of the large number of rules, which oftentimes dictate everything from when they can walk versus run to when they can access pencils, their behavior is almost always attributed to this criminal thinking (Annamma, 2018, p. 65). The criminal identity, then, is reconstructed not because youth of color are committing more frequent or aggressive offenses as demonstrated by the current study's findings. Rather, these young people are having to navigate strict, invasive practices that provide reasons for them to be watched closely for compliance, to be categorized for their adherence or refusal, and punished for straying from unnecessarily rigid expectations. The hyper-surveillance employed within the system makes young people demonstrating developmentally appropriate levels of independence and autonomy extremely vulnerable to additional offense charges, thus reinforcing the criminal identity. The goal of the incarceration system, then, is not

to surveil all bodies or those that offend frequently and aggressively, but to "socially and spatially monitor black and brown bodies" (Annamma, 2016, p. 3).

The construction of criminal identities for black and brown bodies flows through and between institutions, and begins even before introduction to the incarceration system. For example, studies examining the experiences of Black children in school revealed that the children oftentimes feel unfairly singled out for punishment and unable to exhibit emotions without being interpreted as bad-mannered and that teachers often made them feel that every action they took was wrong (Marsh & Noguera, 2018). This is not to say that all teachers purposely target marginalized children. Instead, teachers are often encouraged, or even required, to monitor and report on their students in public schools and even at times contact probation officers or police officers (Meiners, 2007). Unfortunately, teacher education does not provide training to see situations for the real-world complexity they are and then appropriately supporting students. The reports of Black children in school narrate how many become constructed as criminals long before they would even commit an offense. Once catapulted into the legal system, this identity becomes cemented. By drawing from this study's results and detailing the experiences of young people of color within the education system and into the incarceration system, it becomes clear how criminal identities are formulated early and maintained through interdependent systems of white supremacy, and not through criminal behavior.

Gender Identity

Males reported offending at greater rates than females across the models conducted in this study and experienced a significantly greater reduction in offending behavior over the course of the study. These findings seem to support previous research conducted with incarcerated

populations that men are incarcerated at greater rates than their female-identifying counterparts (Carson, 2015). However, as previously mentioned, girls of color are the fastest-growing incarcerated population (Office of Juvenile Justice Delinquency Prevention, 2010; Sherman & Balck, 2015), yet the low offense rates reported by girls and young women, as well as those reported by youth of color in the present study, fail to explain the substantial rise in incarceration for this population.

Disability Status

Theoretical/clinical issues are raised by the present analysis. For system-involved youth, the variable of having a disability played a significant role in predicting offending behavior. In measuring the impact of the disability labels of Intellectual Disability and Emotional Disabilities (Fish, 2017) on offending behavior, those with an identified disability reported higher rates of offenses than their non-disabled peers regardless of the type of offenses observed. This finding has been interpreted in the literature as youths' antisocial tendencies impacting their orientation to and role in society. Barrett and Katsiyannis (2016) made the connection that lacking trust in adults and a respect for others' well-being makes an individual more prone to violating social and legal boundaries that others might view as inviolable. However, this author interprets disability as a fluid process that is dependent upon social context, and that to be disabled is about the ways in which an environment is constructed and maintained that support or hinder access. With this framework, the results from the present study suggest that disabled youth are navigating spaces and processes, both prior to and within the incarceration system, that hinder access to appropriate service and support that ultimately results in higher rates of offenses. Despite the fact that the system's processes and facility structures are inappropriate for this population (Barnert et al., 2017; Bettman & Jasperson, 2009; Burrell, 2013; Dmitrieva et al.,

2012; Lambie & Randell, 2013; Leiber et al., 2009; Mendel, 2014; Rodriguez, 2010; Schwalbe et al., 2009; Steiner, 2009; McGuire, 2002), extant literature suggests that youth with disabilities are incarcerated at a higher rate than their non-disabled peers (National Council on Disability, 2015; Read, 2014; Swain-Bradway et al., 2013; Schubert & Mulvey, 2014; Schubert et al., 2011).

To be clear, the purpose for selecting disability status as a predictor, and using traditional standardized measures as the means for measuring intellect and emotional difficulties, was not intended to investigate differences in offending rates based on measured ability level. On the contrary, this author aimed to investigate how the carceral system differentially impacts those who have been labeled with a disability. Despite the fact that youth with disabilities are guaranteed rights to special education services and supports while in incarceration, many adults working within the system believe that accommodations for disabilities are unnecessary, and that disabilities are a way for the youth to get out of being held accountable for their actions or doing work:

> Of course these kids need extra help and I will give it to them but they are also manipulative and will do anything to get out of work. So they run to (the special education teacher) and she coddles them. And you know what, there's no special education in real life. You aren't getting any accommodations or modifications. You just have to try harder. (Annamma, 2018, p. 91)

This comment made by an adult working within a juvenile incarceration facility makes it clear that the subscription to young people as criminals superseded what it means to be a disabled young person. A teacher within the system described accommodations for disability as unnecessary, saying:

> Like special education accommodations … We give them tools to help them be able to do what everyone else does… but what really should be happening is that we should be teaching them how to survive without those accommodations eventually. To wean them off of the crutches. It's like riding with training wheels, eventually they are going to have to ride on their own we have to work them up to it…because the real world is not going to do the same things we do for them. (Annamma, 2018, p. 91)

This comment is noteworthy because the rigid structure and surveillance of incarceration facilities are described as necessary despite not existing in the real life, but accommodations and supports as unnecessary. Moreover, the quoted teacher used the metaphor of crutches as something to wean students off of. Though she most likely meant crutches as "unnecessary supports," one should not actually require or expect someone who needs crutches to live without those accessibility devices. What her comment exemplifies is the belief that many teachers in incarceration hold - that students need to learn without accommodations and, therefore, would punish young people's disabilities. However, if accommodations were viewed as promoting access to instruction instead of extra support, one could understand why the focus should not be on eliminating that access.

Research Question 2

The second research question sought to determine if placement within a detention facility prior to adjudication impacted offending over time for youth. The results insinuate that institutional placement and the type of setting appeared to have little effect on whether youth persisted or reduced their offending over the course of the study. Those who were placed within a detention facility prior to adjudication did report significantly higher levels of offenses initially, yet their reported offenses were not considered to be more dangerous or severe as there was no

effect found for detention facility placement when looking specifically at aggressive offending. Subsequently, youth who receive community-based supervision were more likely to avoid offending initially. These findings could be attributed to several factors with meaningful conclusions.

The literature points to detention facility placement as typically reserved for those who had been found to commit more severe offenses at greater rates as the placement serves to reduce safety risks to the community (Austin et al., 2005). And for youth not considered to be a safety risk, who had committed fewer and less severe offenses, it is usually decided that they could be effectively and safely supervised in the community. However, contrary to this perception, the present study found that youth placed in detention facilities did not necessarily engage in more dangerous, aggressive offenses. Previous research does indicate that the rate at which cases involve detention at some point varies greatly by race; youth of color are disproportionately placed within detention facilities prior to their sentencing (Puzzanchera & Hockenbery, 2018). In fact, in 2015, the national detained placement rate for Black youth was six times the rate for white youth (Hockenberry, 2018). Therefore, it is likely that decisions for detainment is associated less with maintaining safety and more with targeted racial criminalization.

While the decision of detention facility placement may be made for the purpose of maintaining safety in the community, it is ineffective at best and harmful at worst for the population of young people placed in these facilities. While disparities exist at multiple stages of processing within the juvenile carceral system, detention is a critical juncture given that it is an upstream point of contact within the system (Census of Juveniles, 2017). Detaining youth prior to adjudication has been shown to result in worse outcomes at later stages of processing. Examples include detained youth being more likely to have petitions filed for further

proceedings, lower likelihood of petition dismissal, more severe sentences, and youth being removed from their home and community (Feld, 1989; Leiber & Fox, 2005; Rodriguez, 2010). Detention facilities are clearly unsuccessful in reducing the rate and severity of offending behavior in young people as evidenced by heightened offending rates in detained youth found in the present study. Prior research suggests that detaining youth prior to adjudication is extremely harmful as placement has been shown to result in worse overall outcomes and a greater likelihood for recidivism (Walker & Herting, 2020). The detention setting itself can expose confined youth to direct harm, including sexual abuse and harassment, physical violence, placement in restraints or solitary confinement, and further psychological trauma (Burrell, 2013; Hockenberry & Sladky, 2018).

This study's results of lower rates of offenses reported by youth served within their communities also could be attributed to the fact that community placement allows young people to continue to attend school, go to work, and engage with their communities, serving as a protective factor against further offending. Prior research has proven that community-based care systems are effective in reducing juvenile offending (Pullman et al., 2006). Additionally, strict behavioral expectations and hyper-surveillance employed within detention facilities contributing to a phenomenon referred to as "racking up" offenses may better explain the greater rates of initial offending reported at intake by youth with histories of detention facility placement. Considering that detention centers are the most likely of facility types to use mechanical restraints and the most likely to report locking youth in their rooms for 4 or more hours to regain control of unruly behavior (Hockenberry & Sladky, 2018), the offenses may be youth attempts to establish some semblance of autonomy in a system designed to control.

In general, these results, along with related literature, give strength to the need for alternative options to detention facility placement and lend support to diverting young people to comprehensive community-based care systems. Community-based care systems that bring together law enforcement, school support, and family involvement, have actually proven effective in reducing juvenile offending (Pullmann et al., 2006). Wraparound services offered within youths' communities, for example, are intensive, individualized community-based services that focus on the strengths and needs of the child and family. In these programs, an individualized plan is developed collaboratively by family members, service providers, teachers, and agency representatives to allow for problem-solving skills, coping skills, and self-efficacy for youth and family members (Bruns, 2015). It is important to note, also, that the economic benefits of community-based programs outweigh the costs (Welsh et al., 2012).

Research Question 3

The third research question sought to investigate school engagement as a potential protective factor in mitigating offending behavior for system-involved youth. In general, a factor that appears to distinguish offending desistence from persistence is greater school engagement. Lower rates of offending, including aggressive offenses, were reported among youth who endorsed being more engaged in school prior to adjudication, suggesting that school success and engagement are critical protective factors against juvenile and adult delinquency. Yet there was clear confirmation in the lack of data available for school engagement throughout the course of this study, including postsecondary education enrollment, that school experiences are disrupted and limited for incarcerated populations (Gagnon et al., 2012; Livingston & Miller, 2014; NDTAC, 2016; U.S. Department of Education, 2016). Not only do system-involved youth experience disruption in access to and continuity of education as they transition at various points

during their case proceedings (NDTAC, 2016; U.S. Department of Education, 2016), but research also demonstrates several shortcomings in education delivery in juvenile facilities (Gagnon et al., 2012) that impact youths' preparedness for and access to postsecondary education. An emphasis on control and behavioral regulation is common in many juvenile incarceration settings, and often takes precedence over education delivery (Young, Phillips, & Nasir, 2010). Furthermore, opportunities for higher education among this population are patterned by larger structural exclusions based on race, disability status, class, and place (Livingston & Miller, 2014).

The research points to several factors that can add to a young person's sense of engagement with school. A What Works Clearinghouse report offered strong evidence that programs and course curriculum that bridge school to higher education and career trajectories lead to improved school attendance, an increase in course pass rates, and enhanced students' sense of belonging in school (Rumberger et al., 2017). Consequently, Annamma found that schooling offered within incarceration facilities was not responsive or inclusive of individual social identities and used irrelevant curriculum in relation to youth race, culture, gender, class, or disability. The participants in Annamma's study felt that the majority of the content did not describe individuals who were different than the normative and unmarked, nor did it take up the cultural practices that their communities utilized outside of school (Annamma, 2018, p. 76).

Students' relationships with teachers have also been found to significantly impact achievement and engagement. A longitudinal study on upper elementary students conducted by Spilt et al. (2012) noted that students' perceptions of conflictual relationships with their teachers had a negative impact on their achievement and engagement. As students' relationships with teachers become more positive, student outcomes such as academic competence and engagement

have been found to increase (Gehlbach et al., 2012). At this time, incarceration facilities emphasize control and behavioral regulation over education, resulting in verbal and physical intimidation and degradation portrayed by adults and teachers towards youth (Annamma, 2018). This style of communication, combined with the rhetoric of personal responsibility and socializing practices, make young people feel disrespected and further harms the student-teacher relationship. This approach ultimately contributes to the youth acting in ways that incur more punishment and further deters from their learning and academic engagement.

In general, both the present study and prior research suggest that the school setting plays an important protective role for youth against offending and incarceration (Blomberg et al., 2011; Bullis et al., 2002). Specifically, youth who feel a sense of belonging at school, experience relative academic success, and develop positive relationships with teachers and social groups in school are less likely to engage in offending behavior (Blomberg et al., 2011; Sharkey et al., 2011). Consistent attendance in school has also been shown to reduce negative outcomes, suggesting the school environment can help promote success amongst youth with offending histories (Blomberg et al., 2011). Many researchers who have studied the effect of the incarceration system on educational outcomes have concluded that the system's response to delinquent behavior is likely contributing to negative outcomes (Aizer & Doyle, 2015; Eren & Mocan, 2017; Kirk & Sampson, 2013; Robinson et al., 2017). Considering that there are several factors associated with incarceration education identified in the literature that likely impact educational engagement and outcomes of youth, pursuing lines of empirical inquiry that investigate community school supports and services for this population is strongly recommended.

System-wide initiatives such as Response to Intervention (RTI), a multi-tier approach to the early identification and support of students with learning and behavior needs (Jimerson et al., 2015) and Positive Behavior and Intervention Supports (PBIS), a school-wide system of tiered preventative interventions focusing on providing a positive school environment (Center on PBIS, 2023) are increasingly being implemented to improve school engagement and academic success. In addition, school based mental health services have been shown to be highly effective in promoting school success and overall well-being (Atkins et al., 2010; Center on PBIS, 2023; Maag and Katsiyannis, 2010). Research investigating the effectiveness of these supports as they relate to youth with offending histories is needed.

Implications

The majority of research studies investigating juvenile delinquency to date have relied on state reported offenses to measure juvenile delinquency. However, as narrated throughout this document, youth are oftentimes penalized for offenses that are simply their efforts to establish autonomy within a system designed to control black and brown bodies. Young people do not get the opportunity to explain the circumstances surrounding charges that are incurred, and state records can begin to look like a career criminal instead of a young person navigating a system focused on pathologizing their behavior. Using a self-reported variable that is supported by qualitative study narratives from this population highlights youth voice and point of view and makes important contributions to a body of research that historically has not included these perspectives.

Utilizing a self-reported variable within the context of a quantitative model provides ways in which quantitative analyses can be used to reject deficit discourses so that researchers investigating the carceral system may better understand that numbers are not neutral and that

there are alternative approaches for understanding and remedying differential treatment of groups our system leaves behind. A benefit to centering these narratives is that it illuminates the knowledge, strengths, and cultural resources within this community whose voices are often left out of quantitative research.

This work examined the relationship between identity variables of race/ethnicity, gender, and disability status, system experience of detention facility placement, and the protective factor of educational engagement with offending behavior in youth who have interfaced with the incarceration system. There were statistically significant findings revealing that the juvenile incarceration system is ineffective at eliminating offending behavior. Youth-reported results make important additions to the literature by countering common assumptions held of criminal profiles including that Black youth reported committing significantly lower rates of aggressive offenses than their white counterparts despite being incarcerated at a rate that is approximately six times that of non-Hispanic white men (Hockenberry, 2018). Unsurprisingly, boys and men reported higher rates and more severe offenses than girls and women. Young people with disabilities also reported higher rates and more aggressive offenses than youth without a disability, confirming that disabled youth are navigating spaces and processes, both prior to and within the incarceration system, that hinder access to appropriate service and support and that ultimately results in higher rates of offenses.

Those who were placed within a detention facility prior to adjudication reported significantly higher levels of offenses initially, yet their reported offenses were not considered to be more dangerous or severe than those diverted to community services. This finding insinuates that the decision to place a young person in a detention facility is not necessarily made based on whether they have committed more severe, aggressive offenses that would warrant concern for

safety of the community. Rather, the decision to detain is associated more with targeted racial criminalization as previous research indicates that the rate at which cases involve detention at some point varies greatly by race. Finally, education was identified as a protective factor against offending as those who endorsed greater educational engagement reported lower rates of offending overall. Considering that incarceration oftentimes involves disrupted academic experiences, limited opportunity for educational attainment, and pathologizing structures and processes, attention must be paid to opportunities to divert offending youth to services and supports within their communities to avoid removal episodes and introductions to the incarceration system.

Taken together, the results from this study, along with related literature, endorse juvenile incarceration system involvement as being an adverse childhood experience (ACE). It is an inequitable system that reinforces and maintains discriminatory beliefs, values, and distribution of resources, which together increase one's risk of adverse outcomes. The differential treatment of youth with multiple marginalizing identities involved in the system has long been realized; this work simply affirms these suspicions through magnifying youth voice and with the backing of quantitative methods.

Limitations

The results drawn from this study are limited by the variables examined in the Pathways to Desistance study with no opportunity to ask participants additional questions about their identity or personal experiences within the incarceration system. The current study utilizes archival data, which originally followed 1,354 serious youth offenders, of which approximately 86% identified as male and 14% identified as female (Schubert et al., 2004) with no opportunity to respond with identities that diverted from the male-female binary. The Pathways study was

disproportionately overrepresented by African American and Hispanic youth (Reid & Loughran, 2019). Moreover, Abeling-Judge (2021) noted, the "study was conducted using two regionally specific samples merged into a single data set" (p. 308). Therefore, the sample was not representative of all incarcerated youth and failed to offer a range of response options that would allow youth to more accurately report their identities.

Although the results of this study offer insight into the effect of identity variables and system experiences have on offending as well as educational protective factors that moderate offending behavior, this research requires replication to a more geographically diverse sample. The Pathways study only samples young people from two locations: Phoenix, AZ and Philadelphia, PA. As Abell (2014) suggested, the two sites were chosen in part because of the availability of experienced research collaborators in the two areas, cooperation from youth and practitioners, the high number of female offenders, and high enough rates of serious crimes committed by juveniles. While two sites were chosen to avoid "reflecting idiosyncratic practices that would limit the generalizability of the study findings" (Mulvey et al., 2014; p. 4), the participant pool is not necessarily representative of all types of system-involved youth.

When considering self-reported offending, prior studies have remarked on the effectiveness of self-report data. It is generally recognized that "there is moderate agreement between self-reports and official arrest" (Mulvey & Schubert, 2012, p. 424), and specific to reporting offenses of high severity, juveniles tend to report more accurately (Kazemian & Farrington, 2005). These findings were reinforced in the Pathways study, where juveniles with more arrests self-reported offending more often compared to those arrested less (Brame et al., 2004; Mulvey & Schubert, 2012).

The study findings also offer insight into system experiences for those who may have a disability; however, this researcher relied on traditional standardized measures to identify the presence of a disability, and then pooled emotional disabilities and intellectual disabilities into a single dichotomous variable. First, by not observing emotional and intellectual disabilities individually, there is no information on whether the system responds differently to individuals with different types of disabilities. Secondly, it should be acknowledged that certain dominant cultural practices are misrecognized as fundamental to learning, development, and functioning, and ultimately characterize the way in which ability is measured. A very narrow range of practices is recognized as contributing to development and functioning in the broadest sense, and these tend to be those of the white, ableist communities (Rosebery et al., 2010). The designs of commonly used assessment measures, including the scales used within the present study, highlight certain cultural practices as markers of ability and success, which ultimately confer opportunity to those who exhibit the valued cultural practices and, in turn, significantly reduce opportunity and access for persons who do not perform or function "at standard." Therefore, one's performance observed on these assessments cannot be considered an accurate measure of mental abilities or emotional functioning, but rather an indicator of how well an individual is acculturated to the dominant culture.

This study also offered information on the protective factor of school engagement for offending youth; however, the present study is limited in its scope on potential protective factors for this population. The variable was selected due to previous literature noting the significant positive influence that relationships with teachers and academic success have on youth. Therefore, a detailed analysis of all protective factors discussed during the baseline interviews of the Pathways of Desistance study was not explored. Furthermore, the Pathways to Desistance

study was a longitudinal study of serious juvenile offenders as they transitioned from adolescence to early adulthood. The Pathways study resulted in a comprehensive overview of life changes over the course of a 7-year period, identifying pathways out of the juvenile incarceration system. The current study used data at three time points, the baseline interview upon entry into the program, month 36, and month 72 of the study. Data limitations, specifically the elimination of all other interviews (8 waves), prevented an exploration of the influence of the specific factors on offending throughout the entirety of the study.

Recommendations for Future Research

The findings from this study shed light on the differential impact of the incarceration system on offending behavior of youth who carry various identities and system experiences. Emerging from these data are questions that have, in part, been answered in previous studies, and others that have not received empirical consideration. The following section discusses recommendations for future research:

1. The Pathways to Desistance study following serious juvenile offenders from 2000-2010. Participants completed baseline interviews followed by interviews every 6 months for 3 years, then yearly for 4 additional years. Participants completed 11 waves of interviews throughout the 7-year study (Abell, 2014). The current study examined offending behavior and protective factors using data from the baseline interviews, and interviews conducted at month 36 and month 72 of the study. While the results observe offending over time, it does not offer details of offending frequencies at each time point. Future research may replicate the variables of this study but analyze them at different points throughout the study to gain more details on offending trends. Using 11 waves of data, the researcher may examine what, if any of the variables, exist that mediate or persist

offending, and create protective barriers against ongoing incarceration system involvement.

2. The current study investigated the impact that detention facility placement had on offending for system-involved youth enrolled in the Pathways to Desistance study. Detention facility placement was chosen based on previous literature indicating that detention is a critical juncture as an upstream point of contact within the system (Census of Juveniles, 2017). Future studies may add to this work by investigating other types of facility placements like shelters, receptions/diagnostic centers/assessment centers, group homes, ranches/wilderness camps, boot camps, and residential treatment centers to determine if alternative placements are more helpful in mitigating offending while supporting youth well-being.

3. While the present study offered insight into the impact of system-involvement on behavior over time, it did not take into consideration the impact that one's length of sentence within the system could have on long term outcomes. The survey questions used by Pathways researchers only probed youth on whether they had had at least one overnight stay within a facility in their history. An extended stay in incarceration could drastically impact frequencies of behavior over time. In fact, an upward trend of offending with extended system involvement was observed in Mulvey and colleague's (2010) findings; incarcerated participants who reported even the lowest offending levels committed more crimes after being incarcerated for an extended period of time. Future work may investigate the long-term impact that extended system-involvement has on offending behavior over time.

4. In this study, the researcher pooled emotional disabilities and intellectual disabilities into a single dichotomous variable. This variable was selected and defined based on previous literature identifying these disabilities as being more dependent upon biased referral and assessment practices in their identification (Fish, 2017). It could be that the incarceration system's impact is not equal across the different types of disabilities. Additionally, no other disabilities were investigated through this study. By observing emotional and intellectual disabilities individually, and incorporating other conditions or types of disabilities, future research can help to inform placement decisions and service provision that are individualized and that address one's presenting difficulties.

   An important factor to consider, and possibly to explore further through empirical inquiry, is the use of a diagnostic process that is actually evidence-based. The present study relied on single screener tools for identifying intellectual and emotional disabilities in participating youth. However, an evidenced-based approach to diagnosis is complex, patient-centered, and collaborative in nature, and involves information gathering and clinical reasoning that takes place over time and within the context of a larger health care system that influences the diagnostic process. This process would involve assessment tools that are more robust and responsive to the cultural and linguistic backgrounds of the individuals being assessed, and evaluative batteries that are comprehensive and processes that take place over time. The use of multiple assessment tools and measures that involve the participation of multiple informants for diagnostic clarification is critical for reducing diagnostic uncertainty. The underuse of diagnostic testing in identifying mental and behavioral health conditions has been a long-standing concern, and is certainly a

limitation for the present study. Future work that utilizes evidence-based approaches to diagnostic identification may realize different outcomes for identified youth.

5. There is evidence that suggests that negative environmental factors that exist within incarceration facilities negatively affect youths' emotional, cognitive, and psychological well-being (Office of Juvenile Justice and Delinquency Prevention, 2017a). By confirming that incarceration solely focused on confinement is ineffective and likely harmful, alternative approaches to the punitive model of crime control require attention. Researchers are encouraged to begin with investigating protective factors, or conditions in youth and their communities that act to address and prevent offending and promote well-being. Previous research supports that most youth are best served through community-based placements (Lipsey, 2009; Lipsey et al., 2010; Mendel, 2014; Ryon et al., 2013; Seigle et al., 2014); however, less is known regarding appropriate placement for more serious offenders. This future work may direct youth towards appropriate prevention and intervention services that exist within their communities, and ultimately mitigate removal episodes and introduction to the incarceration system.

   The present study investigated educational engagement as a protective factor against offending for youth and offers one promising avenue for service provision within the community. However, many other protective factors may be identified and investigated to build on the scope of this work, including others that may be offered through education institutions (i.e., extracurricular activities, pursuit of post-high school education, etc.) as well as those that may exist within family systems and community institutions.

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APPENDICES

Appendix A: Self-Reported Total Offense Items

List of the 24 "Total" Offending Items as adapted from the Self-Reported Offending measure used within the Pathways to Desistance Study. Participants responded with frequency counts of committed offenses across listed items.

1. Gone joy-riding in a stolen vehicle
2. Destroyed/damaged property
3. Broke into a car to steal something
4. Set fire to a house/building/car/vacant lot
5. Carried a firearm
6. Entered a building to steal
7. Beaten up someone as part of a gang
8. Shoplifted
9. Been in a fight
10. Bought/received/sold stolen property
11. Beaten someone up badly enough where they needed a doctor
12. Used checks/credit cards illegally
13. Took something by force without the use of a weapon
14. Took something by force using a weapon
15. Stolen a car/motorcycle
16. Sold marijuana
17. Sold other illegal drugs
18. Shot at someone (pulled trigger)
19. Shot someone (where the bullet hit)

20. Carjacked someone

21. Killed someone

22. Drove drunk or high

23. Forced someone to have sex

24. Been paid by someone to have sex