The Relationship between Social Exclusion and Relational Strains among African American Adolescents

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Dedication

For my mother, Eugena Elizabeth Wilson.

I love you and miss you.

To Nate, Kay, Julia, Kenneth, and Gena.

I love you all.

Abstract

Research has consistently shown that African American youth are among the most suspended, arrested, and institutionalized group of young people in the U.S. Processes of school pushout (suspension, expulsion), youth arrest, and detention are the primary forms of social exclusion that Black youth are at risk of experiencing in their social environments. This marginalization of Black youth has serious physical, emotional, and social consequences that fundamentally alter the long term life-courses of many Black youth. For instance, school suspension and expulsion have been shown to be associated with poorer academic performance, school disengagement, and future involvement with the juvenile justice system (Gregory, et al. 2011; Costenbader & Markson, 1998). Additionally, youth who come into contact with the juvenile justice system are at greater risk to have continued involvement with the justice system as adults (Aizer & Doyle, 2015). The purpose of this dissertation was to explore how an adolescent's social relationships might influence their likelihood of experiencing a form of social exclusion such as suspension, expulsion, and juvenile arrest.

Using a nationally representative dataset, a series of analyses was conducted utilizing a mix of latent class analysis, logistic, and multinomial logistic regression. The latent class analysis revealed an interpretable five-class solution in terms of adolescent social relational quality. Youth were classified into five relational sub-groups: (1) strained social relations, (2) moderate global relations, (3) poor school relations, (4) poor teacher relations only, and (5) positive global relations. Per the premise of social exclusion theory, the results of logistic regression analyses indicated that there is an overall association between relationship quality and the three forms of social exclusion.

Relationship profiles with strained school-based relationships were found to have an increased likelihood for all forms of exclusion. These findings were found in both the full sample as well as a sub-sample of African American youth. The hypothesis that an adolescent's relationship profile is a key factor in racial disproportionalities in suspension, expulsion, and arrest was not supported. Overall, the findings of this study serve to reinforce the importance of school based social bonds in determining adolescent social outcomes. Study findings provide further evidence for the importance of relational-based alternatives to exclusionary forms of school discipline. Implications for school policy and school social work practice are discussed.

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CHAPTER 1: INTRODUCTION

Statement of Problem

Many African American youth are systematically marginalized and excluded from society. Processes of school pushout (suspension, expulsion), youth arrest, and detention are the primary forms of social exclusion that Black youth are at risk of experiencing in their social environments. Research has consistently shown that African American youth are the most suspended, arrested, and institutionalized group of young people in the U.S. This marginalization of Black youth has serious physical, emotional, and social consequences that fundamentally alter the long term life-courses of many Black youth. These processes of exclusion in particular have been also been shown to be linked to a number of disparities in social outcomes for Black youth in the U.S. For instance, school suspension and expulsion have been shown to be associated with poorer academic performance, school disengagement, and future involvement with the juvenile justice system (Gregory, et al. 2011; Costenbader & Markson, 1998). Additionally, youth who come into contact with the juvenile justice system are at greater risk to have continued involvement with the justice system as adults (Aizer & Doyle, 2015). As a result, it is fundamentally important to further understand the processes by which Black youth are marginalized and excluded by the very systems that are designed to socialize, educate, and rehabilitate them when they are experiencing difficulty. The following section examines the forms of social exclusion that Black youth are disproportionately subject to in both the educational and the juvenile justice system.

School Pushout and Juvenile Arrest as Social Exclusion

There is a troubling relationship between U.S. educational systems and the adult criminal and juvenile justice systems that has been labelled the "school-to-prison

pipeline" (ACLU, 2008; LDF, 2009). Simply, the "school to prison pipeline" is functionally a form of institutional social exclusion that leads to, "a denial of education through increased suspension and expulsion rates, referrals to inadequate alternative schools, lower test scores, higher dropout rates, and racial profiling of students" (Browne, 2005). In other words, this "school to prison pipeline" in essence formally pushes at-risk (predominately Black) children out of schools and systematically brings them under the formal control of the state as part of the justice system.

In the mid to late nineties, there were a number of high profile school shootings that caused wide spread panic and fear across the U.S. As such, the U.S. government sought to craft a response that would put the nation at ease and restore a sense of safety and security to the country's public schools. With the passing of the Gun Free Schools Act of 1994 (2016), Congress mandated that any state receiving federal funds must have in effect a State law that requires, "local educational agencies to expel from school for a period of not less than one year a student who is determined to have brought a weapon to a school" (Gun Free Schools Act of 1994, 2016). However, many schools subsequently interpreted this act as a mandate for "zero tolerance" for disruptive student behavior and enacted a number of policies that extend beyond the mandate of the original legislation.

In practice, a school zero tolerance policy mandates the application of predetermined consequences and punishments for specific offenses regardless of the circumstance or context. As of 2004, approximately ninety-four percent of all public schools in the U.S. had implemented some form of a zero tolerance policy (Anderson, 2004). Currently, schools utilize zero tolerance policies as a disciplinary tactic for punishing disruptive behavior through the removal of problem students from the

educational environment. Many school districts made their policies considerably more punitive by broadening the definitions of threatening behaviors and weapons while also including more discretionary offenses, such as defiance and/or disrespect of authority (Fuentes, 2003). As a result, schools have developed an array of punishments that are frequently disproportionate to the conduct of the student (Adams, 2009).

Forms of school pushout (suspension and expulsion) and juvenile arrest have frequently been characterized as a form of exclusion in empirical literature. In most instances however, the language of exclusion (i.e. exclusionary discipline) or formal detainment is often used in a somewhat semantic manner to describe the removal of youth from an educational setting or society. That is, social exclusion is rarely defined as a conceptual term in the school pushout or juvenile justice literature. Despite this lack of a formal operationalization as forms of social exclusion, there is considerable evidence that suggests these three adverse experiences (suspension, expulsion, and juvenile arrest) do indeed meet the criteria detailed in the SEKN definition of social exclusion. The following chapter will detail some of the ways in which youth, especially African American youth, are socially excluded from schools and subsequently entangled in the juvenile justice system.

Education & the Discipline Gap

Since the 1970's there has been a persistent and stable pattern of African American students receiving exclusionary forms of school discipline (office referrals, suspension, expulsion) at disproportionately higher rates than students of other races (Gregory, Skiba, & Noguera, 2010; Edelman, Beck, & Smith, 1975). In what some authors have called the 'school discipline gap' considerable evidence has shown that

African American students are disproportionally subjected to more discipline referrals, suspensions, expulsions, and diagnosis/ labelling of emotional and behavioral disorders than their peers of a different race (Skiba et al., 2002). Other evidence has shown that African American students have become increasingly more subject to these forms of school punishment with suspensions and expulsions for Black students increasing nationally in the years between 1991 and 2005 *despite* a general decrease for all other racial groups (Wallace et al., 2008). Black students received more than 38% (34% of all suspended students with disabilities) of all out of school suspensions while White students received only 34% (nearly 40% of students with disabilities) (U.S. Dept. of Ed, 2014). Black students received 36% of all expulsions with White students receiving nearly the same amount (U.S. Dept. of Ed, 2014). In the U.S., an African American child is 1.78 times more likely than a White child to receive an out-of-school suspension (Carter, Fine, & Russell, 2014). In particular, African American boys have been shown to be 3.5 times more likely to be suspended than their peers (Finn & Servoss, 2013). African American girls are also suspended at higher rates than girls of any other race or ethnicity and most boys (U.S. Dept. of Ed., 2014). African American students also receive more referrals and more severe punishment for exhibiting the same behavior in school environments (Welch & Payne, 2010, Noltemeyer & Mcloughlin, 2010a; Noltemeyer & Mcloughlin, 2010b; Skiba, et al., 2002). In fact, a number of studies have shown that there is little evidence suggesting that African American students do exhibit more problematic or violent behaviors than their peers.

African American male students with disabilities are more than twice-as-likely to be suspended than their White counterparts and African American female students with

disabilities are more than three times more likely to be suspended than White female students (U.S. Dept. of Ed., 2014). Studies have also shown that African American students who have been labelled/diagnosed as having an emotional, behavioral, or learning disability are more likely to be suspended than their peers. Specifically, Achilles et al. (2007) found that African American student diagnosed with an Emotional Behavioral Disorder or Attention-Deficit/Hyperactivity Disorder are more likely to be suspended than students with a Learning Disability.

The influence of subjectivity & bias in school discipline

The causes of the discipline gap still remain somewhat unclear despite the preponderance of evidence depicting a clear pattern of racial differences in school discipline. Many theorists have argued that educator characteristics are an important factor influencing or contributing to existing suspension trends. For instance, Gregory et al. (2010) has argued that processes of differential selection and differential processing are significant factors in the racial differences evident in school discipline referrals. In this framework, the differences in suspension rates can either be due to a greater preponderance of bad behavior by Black students (i.e. 'differential selection') or because of discriminatory behavior by actors within social institutions (i.e. 'differential processing'). There is considerable evidence that suggests mechanisms of differential processing may be a principal driving force in the high rates of exclusionary discipline of African American students. For instance, Skiba (2002) found that Black children received more frequent office referrals and harsher punishments when committing similar kinds and numbers of offenses as their white peers.

Based upon analysis of suspension data, it has also been shown that African-American students are more frequently suspended for what are called "subjective" disciplinary offenses (Fenning & Rose, 2007; Skiba, 2002). Subjective student offenses are disciplinary actions that are determined by the educator's subjective judgment or interpretation of a problematic student behavior. Subjective offenses typically include but are not limited to: disrespect, excessive noise, threats, loitering, insubordination, willful defiance, disobedience, and disruptive behavior (Fenning & Rose, 2007; Skiba, 2002). As it stands, a wealth of research has shown that African American students are more likely than White students to be referred to the office for defiance (Gregory & Weinstein, 2008); noncompliance (Skiba et al., 2008); and disrespect, excessive noise, or loitering (Skiba et al., 2002). For instance, in a statewide investigation of Texas 7th graders, Fabelo et al. (2011) found that 97% of student disciplinary referrals were for "discretionary" offenses, such as classroom disruption and insubordination. Overall, African American students had a 31% higher likelihood than White and Latino students of receiving a referral for a discretionary offense. Blake et al. (2011) reported that cases of disobedience, defiance, and improper dress made up the majority of disciplinary infractions of students of color. Students of color disproportionately received more office referrals—leading to suspension—for questioning classroom practices or the teacher's authority (Vavrus and Cole, 2002).

Research has shown that educator biases about race, culture, and normative adolescent behavior can contribute to disproportionate discipline referrals (Skiba et al., 1997; Skiba et al., 2002). Black children have been found to commit similar kinds and numbers of offenses as their white peers but are disproportionally disciplined at higher

rates (Skiba, 2002). While some have argued that office referrals could be attributed to differing norms of communication between teachers and African American students (e.g. overlapping speech) (Cartledge & Kourea, 2008; Bireda, 2002; Tucker, 1999). There is considerable empirical evidence suggesting that Black youth experience differential treatment by school faculty and staff because of clear racial bias. In a sample of Black 7-9th grade students, Sellers et al. (2006) found that approximately 70% of the sample reported being treated with suspicion and fear, followed in public places, and treated as if they were "stupid" or unintelligent. Similarly, in qualitative interviews with Black high school students, Hope, Skoog, & Jagers (2015) found that participants reported that their teachers treated them as less academically inclined and were subject to harsher disciplinary actions than other racial groups. Youth utilizing movement styles (e.g., "strolling") associated with Black culture were perceived by teachers as lower in academic achievement, more aggressive, and likely in need of special education services (Neal, et al., 2003). African American girls with darker skin tones were almost three times more likely to be suspended than African American girls with lighter skin (Hannon et al., 2013). Finally, Morris (2007) found that teachers regarded African American female students as being louder and exhibiting more "unladylike" behaviors.

The Effects of School Suspension

The disruptive nature of school suspensions and expulsions in particular can gradually disintegrate a young person's bonds with their school and their teachers. While suspended students are technically considered enrolled students, they are detached socially from their classmates and teachers, and academically delayed or in other words they are *functionally excluded* from the academic environment. Unsurprisingly, students

with a history of suspension tend to experience various forms of academic adversity such as receiving lower grades and/or having academic skill deficits (Balfanz, Byrnes, & Fox, 2015; Costenbader & Markson, 1998). Additionally, suspended students have been found to feel disengaged and/or alienated from school due to missed instructional time (Nolan, 2011, Arcia, 2006). Suspensions also tend to damage family-school relationships that are critical to effective schooling (Gibson et al, 2014, Haight et al, 2014). Out-of-school suspensions in high school have been shown to increase a young person's risk of grade retention (Jimerson, Anderson, & Whipple, 2002; Skiba, Arrendonda, & Rausch, 2014), and school dropout (Marchbanks et al., 2015). Finally, Kupchik & Catlaw (2015) also found that suspended students are less likely than others to vote and volunteer in civic activities as adults.

Research has shown that students who receive an out-of-school suspension or school expulsion are much more likely to come into contact with the juvenile justice system. For instance, a 2005 Texas study of disproportionate minority contact with the juvenile justice system found that a school disciplinary referral was the most influential predictor of contact with the juvenile justice system (Carmichael, Witten, & Voloudakis, 2005). Students who had one or more disciplinary infractions were 23% more likely to come into contact with the juvenile justice system than students with none (Carmichael, Witten, & Voloudakis, 2005). When a young person receives an out-of-school suspension there are a number of indirect pathways that can lead them into contact with the juvenile justice system. Suspended students have been found to have an increased likelihood of engaging in criminal activity, engaging in antisocial behavior (Hemphill et al., 2006),

delinquent behavior (Losen & Martinez, 2013), or going to prison (Gregory, et al. 2011; Skiba & Peterson, 1999).

Young people are also directly ushered into the juvenile justice system via school referral or an arrest on or around school grounds. In accordance with the 1994 Gun Free Schools Act, young people are subject to arrest and detainment for felony offenses (particularly weapon related). School zero tolerance policies officially criminalize a host of disciplinary infractions and route students to the justice system. African American students in general are referred to law enforcement and arrested for school based offenses at rates far exceeding that of White students. According to 2011-12 U.S. Dept. of Ed. data, African American students make up just 16% of the national public school enrollment yet accounted for 30 percent of all school related arrests and 27 percent of all school referrals to law enforcement. Conversely, White students accounted for almost 52 percent of national public school enrollment, 40 percent of school related arrests, and 42 percent of school referrals to law enforcement (U.S. Dept. of Ed., 2014). Similarly, in a recent study of a nationally representative sample of 59,699 schools, Ramey (2015) found that schools and districts with larger minority (Black & Latino) student populations were more likely to utilize "criminalized" disciplinary procedure (e.g. suspension, expulsion, or referral to law enforcement) as opposed to utilize behavioral or medical interventions (Section 504 and enrollment in the Individuals with Disabilities Education Act).

Numerous studies have shown that school referrals of young people to the juvenile justice system are often for relatively minor infractions such as willful defiance, disobedience, fighting, or disturbing school (Majd, 2010; Browne, 2005). For example, a 2008 study in Louisiana by the Models for Change Initiative, found that 33% of juvenile

justice referrals were from schools (Johnson, 2009). In a follow up study, the researchers found that in a sample of 325 school arrests, 57% were for disturbing the peace and 64% were African American youth (Johnson, 2009). This study also discovered that many youth of color were admitted to detention for petty misdemeanor offenses such as disturbing the peace, misdemeanor theft, and contempt (Johnson, 2009). Similarly, a 2006 study by the Florida NAACP also found that 76% of all school based referrals (N=26,990) to the Florida Department of Juvenile Justice were for misdemeanor level incidents like trespassing or disorderly conduct (NAACP, 2006).

A number of school districts have also developed alternative education programs for students who are expelled, suspended, or returning from detainment. Alternative education programs are intended to provide education services to, "the student who poses a clear threat to the safety and welfare of other students or the school staff, who creates an unsafe school environment or whose behavior materially interferes with the learning of other students or disrupts the overall education process" (Griffin, Steele, & Franklin, 2007). Unfortunately, most alternative programs generally have substantially lower academic standards than traditional schools which can mitigate any positive effects. Often, students attending these programs experience mistreatment and inadequate instruction which can intensify, "issues of alienation, hostility, and low academic performance" (Advancement Project, 2000). Ultimately, some educators view alternative education programs as nothing more than, "warehouses for kids the [public schools] hope will drop out" (Browne, 2005).

Involvement with Juvenile Justice System

Many scholars have noted that African American youth have been severely over-represented within the juvenile justice system (Piquero, 2008). African American youth are arrested at a rate far exceeding that of other youth. In 2011, Black youth were arrested at a rate (8,380.5 arrests per 100,000) more than double that of White youth (3,786.7 per 100,000) despite being approximately 16% of the population under 18 (NCJJ, 2014). African American youth are also processed and confined at a rate far exceeding that of other racial groups. Black youth make up 35% of all referrals to juvenile court, 42% of the detained population, and 30% of all youth on probation (Sickmund, Sladky, & Kang, 2015). Other data has revealed that African American youth also accounted for 35% of all youth waived to criminal court and 58% of total admission to adult prisons (Hartney & Silva, 2007). Beyond that, approximately 50% of drug cases involving white juveniles result in formal processing, whereas the average for Black offenders involved in such cases stands at 75% (Piquero, 2008).

In 2011, African American youth were arrested for violent crimes (627.4 per 100,000) at a rate five times that of White youth (125.5) (NCJJ, 2014). More startlingly, Black youth were arrested more than all other racial groups for low level offenses such as disorderly conduct and curfew/loitering violations. The arrest rate for Black youth (1026 per 100,000) was more than three times higher that of White youth (312.5 per 100,000). Black youth were also arrested (497.2 per 100,000) for curfew and loitering violations at a rate that was considerably more than White youth (185 per 100,000). Juvenile justice data also shows that 35% of all young people held in detention and 16% of youth held in

juvenile facilities are there for infractions as minor as not adhering to a judge's order (Puzzanchera, 2013).

Besides their higher levels of detainment, African American youth are also at greater risk for being shot and killed by police. Utilizing restricted FBI data, Gabrielson, Jones, & Sagara (2014) found that from 2010 to 2012, African American adolescents were 21 times more likely than White adolescents to be killed by a police officer. They also found that African American adolescent males (15 to19) were also killed by police at a rate of 31.17 per million compared to 1.47 million White males during the same time period.

Effects of Contact with the Juvenile Justice System

There is a limited body of literature on the effects of arrest and confinement on the social-emotional developmental outcomes of Black youth. In many instances once a youth exits a secure detention facility they often encounter difficulty returning to their homes or schools (Nellis & Wayman, 2009; Bullis, Yovanoff, Mueller, & Havel, 2002). Nationally, some data shows that approximately two-thirds of youth leaving formal detainment never return to school (Roy-Stevens, 2004). Kirk & Sampson (2013) also found that merely being arrested as a youth increased a young person's chances of dropping out of school and reduced their likelihood of enrolling in a four year college. Youth with a history of incarceration have also been found to spend less time employed than other youth with no history of incarceration (Western & Beckett, 1999; Freeman, 1991). Finally, while there is a considerable body of literature on the mental health needs of incarcerated youth, there is a surprising and notable lack of research on the long-term mental health consequences of arrest and confinement on Black youth.

Most research on juvenile justice outcomes primarily assesses the effectiveness of confinement as a deterrent of antisocial behavior. To that end, there is a general consensus that confinement does not effectively reduce recidivism and continued contact with the juvenile justice system. Youth who come into contact with the juvenile justice system have been shown to have continued contact with the justice system into adulthood. For instance, utilizing Illinois state administrative data, Aizer & Doyle (2015) found that Black youth with a history of juvenile incarceration were 22% more likely to be incarcerated again as adults and 30% less likely to complete high school than other youth of a similar age. They also found that previously incarcerated youth who returned to school were often more likely to labeled with an emotional or behavioral disorder. In fact, a number of states have reported high rates of juvenile re-arrest that range from 50-80 percent (Nellis & Wayman, 2009). One study in particular found that of all people under the age of 25 who were released from formal detainment more than three-quarters were re-arrested within three years (Durose, Cooper, & Snyder, 2014). The study authors also found that the number of re-arrest leapt to 84% within five years of release (Durose et al., 2014).

The Adult Criminal Justice System

Once a young person becomes engaged with the adult justice system they are essentially entered into a system of formal social exclusion wherein which they are imprisoned and subsequently barred from meaningful participation in mainstream U.S. society. In her analysis of the U.S. prison industrial complex, legal scholar Michelle Alexander characterized the current U.S. system of mass incarceration as a virtual and literal cage of entrapment. Alexander's cage model suggests that under the guise of the

Reagan era War on Drugs, innumerable African American men were swept through a three-stage process that culminates in their permanent relegation to a social under-caste. The first stage in the model is identified as the "roundup" and describes the manner in which African American males are ushered into the criminal justice system. In this stage, criminal justice agencies are financially rewarded (drug forfeiture laws and federal grants) for focusing their efforts on drug arrests and convictions. Alexander cites recent Supreme Court decisions that have both weakened Fourth Amendment protections against unwarranted search and seizure while also imbue police officers with the discretion to use race as a factor for a "stop and search" (128). The second stage of the model is called the "period of formal control." In this stage, a convicted drug offender will spend a considerable amount of time under the formal control (jail, prison, probation, parole) of the justice system. Finally, Alexander's third stage is termed the "period of invisible punishment" and describes the formal and informal social sanctions that ex-felons encounter upon their release from incarceration. Such sanctions include the loss of voting rights, denial of public assistance, and an increased vulnerability to anti-felon discriminatory housing and hiring practices. In summation, Alexander argues that there is a systemic process of social exclusion that, "marginalizes large segments of the African American community, segregates them physically (in prisons, jails, ghettos), and…discriminates against them in voting, employment, housing, education, public benefits, and jury service" (2010).

This chapter has sought to describe and detail the ways in which Black youth are functionally excluded from society. African American youth face a considerable risk in experiencing suspension, expulsion, and arrest. As such understanding which factors

might increase or decrease a young person's likelihood for experiencing one of these forms of social exclusion is fundamentally important. One potential area of research that might assist in increasing social understanding of these processes of exclusion is the study of adolescent social relationships. As shown above, a young person's relationships with educators can contribute to their risk of suspension, expulsion, and arrest. A deeper understanding of the ways in which a young person's social relationships influence social outcomes could broaden the knowledge base regarding expulsion, suspension, and juvenile arrest. As such, the next chapter reviews some of the extant literature on adolescent social relationships.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

African American youth are exposed to many environmental stressors that can lead to greater psychological distress and externalizing problems (Farrell et al., 2006). Conflictual or strained relationships are one such stressor identified in the research (Farrell, Ampy, & Meyer, 1998). For adolescents, having healthy and supportive social relationships are fundamentally important to a young person's overall social-emotional development (Ehrlich, Dykas, & Cassidy, 2012; Sentse & Laird, 2010). The social relationships that adolescents have in their lives can provide much needed social and emotional support for them in their day-to-day lives. The spaces that young people inhabit such as their home, school, and community are key sites of socialization for young people and the people with whom they interact and build bonds with are of great importance in a young person's developmental trajectories. Therefore, healthy relationships with peers and adults are especially important for young people as they transition through various social spaces in their ecological environment. Strained or conflictual relationships with adults and/or peers can contribute to numerous internalizing and externalizing problems such as depression, low self-esteem, physical aggression, and other delinquent behaviors (Sentse & Laird, 2010; Sullivan, Farrell, & Kliewer, 2006; Wang, Eccles, & Brinkworth, 2013). Additionally, research has shown that interpersonal conflicts in school environments such as willful defiance, disobedience, fighting, or disturbing school can result in school suspensions, expulsions, and referrals to the juvenile justice system (Majd, 2011; Browne, 2005). As such, understanding the link between a young person's interrelationships and their psychosocial outcomes is of fundamental importance.

There is considerable knowledge about the ways in which individual relationships with parents, peers, and teachers may influence adolescent social, emotional, and behavioral development, however, less is known about the link between relationships and institutional social exclusion. This is especially true for African American adolescents who are at a substantially increased risk for experiencing multiple forms of institutional and interpersonal social exclusion. Additionally, when studies do examine social relationships they have primarily focused their gaze on the effects of a single relationship in a young person's life. Few models account for the cumulative effects of multiple conflictual or strained relationships in the lives of adolescents (Ehrlich, Dykas, Cassidy, 2012; Ladd & Pettit, 2002). Black youth in particular often have co-occurring conflictual or strained relationships with parents, teacher, and/or peers (Gibson et al., 2014). The following section will first review some of the extant literature on the developmental consequences of adolescent relational quality. Following this brief summary, the chapter will conclude with a further review of some of the existing research that has attempted to examine the manner in which multiple relationships may influence adolescent development.

Indicators of Social Relationships

In the empirical literature on social interrelationships there are a number indicators that are used to measure or account for some dimension of human social ties. In attempting to operationalize relationship quality most investigators define relationships as either the presence/absence of social support (Gauze et al., 2004) or the presence/absence of conflict (Ladd & Pettie, 2002). These indicators of relationship quality have been measured in a number of ways ranging from a single-item to multi-item

measures that assess multiple dimensions of both support and conflict (Sentse & Laird, 2010). For the interests of this review and this study, a human relationship will be conceptualized as any stable consistent social tie with another human being in a person's proximal social environment. As such, any literature that discusses that examines the quality and consequences of an adolescent's proximal human interrelationships was included as part of this chapter's overview.

Adolescent-Parent Relationships

Unsurprisingly, there is a large body of literature that details the how the relationship between a parent and their adolescent child can influence a young person's healthy development. Supportive parent-adolescent relationships have been shown to contribute to higher self-esteem, (Demaray, Malecki, Davidson, Hodgson, & Rebus, 2005), fewer depressive symptoms (Garthe, Sullivan, & Kliewer, 2015), and improved school adjustment (Malecki & Demaray). On the other hand, conflictual parent–adolescent relationships can result in: higher levels of anti-social behavior (Sentse & Laird, 2010), adolescent depression, delinquency, and misconduct (Wang, Eccles, & Brinkworth, 2013; Ehrlich, Dykas, Cassidy, 2012; Wang, Dishion, Stormshak, & Willett, 2011); and poorer social-emotional competence, emotional problems, & psychological adjustment problems (Ehrlich, Dykas, Cassidy, 2012; Denham et al., 2000; Steinberg & Lamborn, 1994). For instance, in a recent meta-analysis of parent-adolescent conflict literature, Weymouth, Buehler, Zhou, and Henson (2016) found that parent-adolescent conflict was positively associated with various dimensions of youth maladjustment (internalizing problems, externalizing problems, academic problems, and total problems). In particular they noted that parent-adolescent relationships characterized by

disagreement and hostility were associated with these negative developmental outcomes for young people. Their analyses revealed that parent-adolescent relationship conflicts characterized by disagreement, expressed hostility, and other composite measurements were all positively associated with youth maladjustment (Weymouth et al., 2016).

Though limited, much of the research on parent-child relations with African American youth has generated similar results as research on general youth populations. Research on African American youth has consistently shown that Black children with warm, supportive, and accepting relationships with their parents are more likely to have higher social and academic competence as well as fewer behavioral problems (Washington et al., 2015). In another sample of African American adolescents (N=224), Grant et al. (2000) also found that strong relationships with father figures helped attenuate the relationship between stress and externalizing symptoms for Black youth (but not internalizing symptoms). Elmore & Gaylord-Harden (2013) examined the relationship between supportive parenting and behavioral outcomes in a sample of 150 African American parents. In their study they found that supportive parenting was associated with fewer parent-reported externalizing problem behaviors. Similarly, Bean, Barber, & Crane (2006) also found that paternal support had a negative relationship with youth depression (a finding not found with maternal support). Paternal support was also associated with fewer antisocial or delinquent behaviors. Finally, parent-adolescent relationships with high levels of parental acceptance led to more child self-disclosure to parents as well as contributing to fewer depressive symptoms among African American youth (Garthe, Sullivan, & Kliewer, 2015).

Adolescent-Teacher Relationships

The relationship between a young person and their teacher is also an important factor in the healthy development of a young person. For adolescents the quality of these relationships become increasingly more important in their transition into adulthood. Research has shown that as youth age and transition to later adolescence, the quality of student-teacher relationships tend to worsen (Hafen, Ruzek, Gregory, Allen, & Mikami, 2015). Racial and ethnic minority students in particular have consistently been shown to have poorer relationships with their teachers (Kesner, 2000; Saft & Pianta, 2001). Poor or conflictual relationships with teachers have also been shown to lead to many adverse consequences such as: lower scores on self- and teacher-ratings of social and emotional adjustment (Murray and Greenberg, 2000); poorer student engagement & academic performance (Roorda et al., 2011; Furrer & Skinner, 2003); increased conduct problems (K-1) (Ladd & Burgess, 2001); and school dropout (Bergeron, Chouinard, & Janosz, 2011). Beyond the school environment, positive relationships between teachers and students has been shown to be associated with fewer depressive symptoms in a sample of adolescents (Joyce & Early, 2014).

Murray & Zvoch (2011) examined the relationships of African American youth and their teachers. In a sample of predominately African American adolescents (N=193), Murray & Zvoch (2011) discovered that Black youth who reported having less trusting relationships with their teachers also had higher externalizing scores on the Child Behavior Checklist. Teachers in the study also reported lower relational closeness and greater relational conflict with Black youth with higher externalizing scores (Murray & Zvoch, 2011). Similarly, in an earlier qualitative study, Murray & Naranjo (2008) found

that older African American adolescents who exhibited higher levels of school persistence also had more caring and trusting relationships with their teachers. Another theme in the study was that many of the youth had to minimize peer relationships in the school environment. Noting it as a persistent theme, Murray and Naranjo (2008) observed that many students in the sample reported having few or no close friends in their school. One participant in the study went so far as to suggest that academic success was dependent on their isolationism from their school peers (Murray & Naranjo, 2008).

Adolescent-Peer Relationships

A large body of research has shown that the quality of an adolescent's relationships with their peers and friends is fundamentally important to their social and emotional development (Sentse & Laird, 2010). Adolescent friendship relationships with high levels of social support contribute to fewer internalizing and externalizing problems. Positive, supportive peer relationships have also been found to have a protective effect when other relationships in a young person's life are strained or conflictual (Rubin et al., 2004; Gauze et al., 2004). African American adolescents who had more prosocial relationships were also less likely to utilize self-destructive coping strategies (e.g. self-harm, drug use) and more likely to utilize more positive pro-relational strategies (e.g. go over a friend's house, do a hobby) (Joyce, O'Neil, Stormsjak, McWhirter, & Dishion, 2013). Other research has shown that adolescents experiencing lower levels of peer acceptance were more likely to exhibit higher levels of social anxiety (Tillfors, Persson, Willén, & Burk, 2012). Tillfors et al. (2012) subsequently observed a bidirectional relationship between peer relationship quality and social acceptance with youth exhibiting signs of social anxiety having an increased risk for peer victimization and

poorer relational support. Victims of relational victimization (social exclusion from peer groups, spreading negative rumors, or withdrawal of friendship) have been shown to be at increased risk for drug use, physical aggression, and relational aggression with other peers (8th graders) (Sullivan, Farrell, & Kliewer, 2006). Victims of this form of peer victimization have also been shown to be more likely to experience anxiety, low self-esteem, depression, & further peer rejection (Hawker & Boulton, 2000; Hodges & Perry, 1999). Youth who experienced peer rejection were more likely to exhibit higher levels of global social anxiety even after controlling for peer victimization and social skills (Su, Petit, Erath, 2016). Adolescent peer relationships have also been shown to mutually influence the likelihood of prosocial or antisocial outcomes. For example Criss et al. (2016) found that relationships with antisocial peers can contribute to the development of antisocial behaviors as well as depressive symptoms in adolescent youth.

Finally, in a recent qualitative investigation on the role of race in the disproportionate out-of-school suspension of African American youth, Gibson, et al. (2014) interviewed suspended African American adolescents, their parents, and educators from the youths' school. The authors found that both Black youth and educators attributed school disciplinary issues to an increased likelihood for Black youth to be embroiled in conflictual relationships with peers and educators in the school environment. Results of the analysis revealed that many African American youth in the sample (N=28) attributed the higher rates of Black suspension to greater misbehavior by African American students. A number of students noted that Black students represented a greater proportion of out-of-school suspensions because they were more likely than students from other racial groups to be involved in arguments with teachers and other

students as well as physical fights (Gibson et al., 2014). The authors identified a similar theme among the educators, where many educators perceived their Black students as being more challenging of educator authority, more likely to instigate physical and non-physical conflicts, and bully other students.

The Effects of Concurrent Social Relationships on Adolescent Development

Few studies have attempted to elucidate the individual or combined effects of an adolescent's relational quality with multiple actors in their social environment. In one of the few studies to look at the consequences of multiple strained relationships, Sentse and Laird (2010) examined the ways in which support and conflict in relationships with parents and dyadic friendships may be predictive of behavior problems in adolescents. In a sample that was 45% African American, Sentse and Laird (2010) found that when adolescents reported having parental or friend relationships with low levels of conflict also reported low levels of antisocial behavior. Conversely, youth who reported conflictual relationships with friends and/or parents also had higher levels of parent-reported antisocial behavior. In examining internalizing behaviors, Sentse and Laird (2010) found that youth with highly supportive parental relations and friends exhibited lower levels of depressed mood. In other words, youth with multiple supportive relationships have a higher likelihood of positive outcomes. However, a conflictual relationship with parents and/or friends increases the risk of antisocial and internalizing behaviors. Sentse and Laird (2010) subsequently concluded that parent-child relationships and peer friendships are important influences on both internalizing and externalizing behaviors. However, they argued that the quality and character in one

relationship can serve as a buffering or influencing effect on other relationships, thereby indicating a complimentary effect on adolescent outcomes.

Similarly, Ehrlich, Dykas, and Cassidy (2012) also examined the relationship between adolescent conflict with parents and friends and their social functioning. Ehrlich et al. (2012) found that when levels of conflict with parents and friends were both high then youth were more likely to exhibit poor social functioning. In particular, parental conflict was associated with peer-reported aggression while conflict with peers was associated with adolescent delinquency. In instances where there was conflict with parents and higher levels of conflict with friends, study participants exhibited higher levels of delinquent behavior as well as lower levels of pro-social behavior. Ultimately, Ehrlich and colleagues surmised that there may be a "tipping point" wherein which multiple conflictual relationships could increase the likelihood of maladaptive social development for adolescents (Ehrlich et al., 2012).

Malecki and Demaray (2003) investigated what kinds of social support were received from various sources (parents, teachers, classmates, and close friends) and which types of support were associated with various adolescent outcomes (social, behavioral, and academic). In this study as well as several others, the authors defined social support as a person's belief or perception of "general support or specific supportive behaviors (available or acted on) from people in their social network, which enhances their functioning or may buffer them from adverse outcomes" (Malecki & Demaray, 2003). In this sample which was 55% Black and Hispanic (43% was Hispanic), Malecki and Demaray (2003) found that supportive behaviors from parents contributed greatly to overall adolescent adjustment. Additionally, positive emotional support from teachers

was found to be predictive of academic competence, school maladjustment, and general social skills.

In a different study using a smaller predominately Hispanic sample (but with similar design and methods), Demaray, Malecki, Davidson, Hodgson, & Rebus (2005) also examined the relationship between social support from various individuals (parent, teacher, classmate, close friend, and school staff) and several indicators of adolescent adjustment behaviors (clinical maladjustment, school adjustment, personal adjustment, and an index of emotional symptoms) over time. This study's findings showed that adolescents with supportive parental relations had lower levels of clinical maladjustment (anxiety, atypicality, locus of control, social stress, & somatization) one year later. The authors also found that social support from classmates was a significant predictor of emotional symptoms (e.g. anxiety, social stress, depression, etc.) one year later. Contrary to other research, Demaray et al. (2005) also found that there was no statistically significant relationship between close friend social support and any of the adjustment outcomes. In examining the relationship between relational support, socioeconomic status, and academic performance, Malecki and Demaray (2006) found that for youth from a higher socioeconomic status there was no relationship between social support and grade point average. However, for poorer youth, the various forms of social support proved to be related to academic performance. For youth of lower SES, both parent and teacher support was found to be related to adolescent total GPA as well as Reading and Language GPA (as well as Science and Social Studies respectively). Support from classmates, close friends, and school staff were found to only be related to student GPA in Reading. Malecki and Demaray (2006) also found that social support moderated the

relationship between poverty and adolescent grade point average. Specifically, study findings indicated that youth with lower levels of parent or classmate support exhibited a poorer academic performance if they were from a lower SES. However, youth of higher SES and lower parent and classmate support were still able to maintain a higher academic performance. As such, relationships with higher levels of social support seemed to be of greater importance to youth from poorer backgrounds when it comes to their overall academic performance.

The above findings mirror those found in research that examines the effects of more serious interpersonal conflict (i.e. physical violence) in a young person's home environment. Youth exposed to conflict in the home have also been shown to have problems in maintaining healthy interactions and relationships with their peers (Bolger, Patterson, & Kupersmidt, 1998). In this regard, being victims of maltreatment or observing inter-parental domestic violence has been shown to have significant deleterious effects on young people. For instance, in a sample of 8-10 year olds, Bolger et al., (1998) found that children who had previously experienced physical abuse, emotional maltreatment, and neglect were less liked by their peers (reciprocated playmates) and reported lower levels of friendship quality. These findings are consistent with prior literature that showed that maltreated children tended to experience more peer rejection and unreciprocated friendships than children who had not experienced abuse (Kim & Cicchetti, 2010).

In a sample of African American middle schoolers (N=176), Farrell et al. (2006) examined the prevalence of various problem situations that might arise in their relationships with both peers and teachers. The participants in this study were asked to

rate the frequency of which they experienced 61 distinct social problem situations. Of these 61 problem situations, a total of 25 problems (72%) were found to be both prevalent and difficult and resided in either the school or peer contexts. All but one of these problem domains were related to a *relational* issue with a peer, friend, teacher, or other adult in the school environment. The most common problem situations in this study were school related concerning disagreements or conflicts with teachers (unfair grading and disciplining) and classmates (disruptive class behavior). Farrell et al. (2006) also discovered that youth who experienced more of these problem situations were also at a greater risk for delinquent behavior, relational and physical aggression, higher anxiety, and lower self-worth. In particular they also noted that the correlations between relational problem situations and externalizing and internalizing problems were stronger in relationships with peers who were *not* friends (e.g. relational aggression, self-worth, depression, and anxiety) (Farrell et al., 2006). These findings replicated an earlier study by Farrell, Ampy, & Meyer (1998) in which found that two prominent stressors in the lives of Black youth (N=459) were various antagonistic interactions with peers (e.g. teasing, rumors, and name calling) as well as conflictual relationships and interactions with their teachers. In this study, Farrell, Ampy, and Meyer (1998) discovered that youth experiencing antagonistic peer relationships and/or stressful relations with teachers were also at an increased risk for exhibiting higher levels of aggression, drug use, and anxiety (Farrell, Ampy, & Meyer, 1998). In another study, Grant, et al. (2004) tested whether a set of 43 interpersonal stressors mediated gender differences in depressive symptoms in a sample of 622 African American adolescents. Though their findings did not indicate that interpersonal stressors mediated gender differences in depression, they did find a weak

but significant correlation between interpersonal stressors and depression symptoms overall.

Gaps in the Literature

As can be seen from the above review, most research on youth relational ties has primarily investigated how the quality of a youth's relationships may influence academic outcomes, internalizing behaviors (anxiety, depression, low self-esteem, etc.) and externalizing behaviors (aggression, antisocial behavior, etc.). However, this literature rarely examines the impact of social relationships on adolescent social outcomes. Additionally, most investigations into the effects of a young person's social relationships have tended to focus solely on individual relational ties with influential actors such as parents, peers, or teachers. Hence, there are few instances in the literature where investigators have accounted for the cumulative effect of concurrent relationships in a young person's life. As has been seen in the literature on school discipline Black youth are often excluded from academic environments and/or referred to the criminal justice system for relationship-based interpersonal disciplinary issues with teacher and/or peers. In some instances it has been argued that African American youth are more likely to experience poorer social outcomes because they have a higher tendency to have conflictual relationships with teachers and peers (Gibson et al., 2014; Farrell et al., 1998). As such, the implication is that a young person's relationship with other individuals in their environments do play a role in institutional outcomes. This study aims to bolster the existing bodies of literature on the social exclusion of African American adolescents while also providing greater insight into the ways in which a young person's social relationships may contribute to their institutional outcomes.

CHAPTER 3: THEORETICAL FRAMEWORK

Introduction

This study's theoretical framework is primarily influenced by Bronfenbrenner's bioecological theory of human development (PPCT Model) and social exclusion theory. Bronfenbrenner's Person-Process-Context-Time model (PPCT) is utilized as a framework for conceptualizing the ways in which interrelationships in social environment influence adolescent development. The PPCT model's emphasis on the human ecological environment allows for a fuller understanding of the ways in which concurrent relational processes may influence human outcomes. Social exclusion theory is utilized as an explanatory proposition for the process by which individuals come to experience social exclusion. This theoretical premise subsequently provides the necessary framework to conceptualize the manner in which an adolescent's social relationships could conceivably contribute to their formal exclusion from school through suspension or expulsion and from society through arrest. This chapter thus provides an overview of these two theoretical frameworks.

Ecological Systems Model & Bioecological Theory

Urie Bronfenbrenner's bioecological model is one of the most widely cited and utilized models in social work education and practice. The model itself was originally formulated and presented in Bronfenbrenner's The Ecology of Human Development (1979) and saw several iterations since its inception. Originally, "ecological systems theory" was a variation of general systems theory with an emphasis on the interaction between a person and their ecological environment. To clarify, a system is generally characterized as a set of orderly and interrelated elements that come together to make a functional whole environment (Zastrow & Kirst-Ashman, 2007). Hence, the general

ecological systems model, "posits that individuals constantly engage in transaction with other humans and with other systems in the environment, and that these individuals and systems reciprocally influence each other" (Hepworth, Rooney, Dewberry Rooney, Strom-Gottfried, & Larsen, 2006). Over time, Bronfenbrenner's ecological systems theory evolved into a later framework that Bronfenbrenner referred to as the person-process-context-time (PPCT) model (1994). In Bronfenbrenner's view, "ecological models encompass an evolving body of theory and research concerned with the processes and conditions that govern the lifelong course of human development in the actual environments in which human beings live" (Bronfenbrenner, 1994). Hence, the full PPCT model is developed from four interrelated elements (process, person, context, and time) that coalesce together to influence and direct human development. Ultimately, it was this later PPCT framework that Bronfenbrenner espoused as a more mature iteration of his original bioecological model.

Bronfenbrenner's Process-Person-Context-Time Model

Process

As observed in the previous chapter, adolescent relationships are of fundamental importance to a young person's healthy development and transition into adulthood. Existing research has rightly focused on the social relationships of the closest and most influential individuals in a young person's life. The critical element of the PPCT model is its focus on the proximal processes of human social interaction that regularly occur over the life course. Bronfenbrenner described two central propositions that clarify the manner in which these processes influence human development in the social environment. Bronfenbrenner's first proposition is that, "human development takes place

through processes of progressively more complex reciprocal interaction between an active, evolving bio-psychological human organism and the persons, objects, and symbols in its immediate external environment" (Bronfenbrenner, 1994, p. 38). Specifically, these ecological interactions must *regularly* occur in an individual's *immediate environment* over extended periods of time in order for them to be influential. As Tudge, et al. (2009) observed, proximal processes are fundamental to the PPCT framework and represent the theoretical foundation of the model. In Bronfenbrenner's framework, these essential proximal processes are influenced by a number of intersecting factors that essentially provide the form and shape to the other aspects of the PPCT model. Thus, as humans engage and interact with the various constructs of their environment they learn how to understand, participate in, and subsequently construct their place in society.

Person

The second element in Bronfenbrenner's PPCT model is the influence of an individual's personal characteristics on their individual development. Bronfenbrenner noted that individuals bring their past experiences, physical presentation, emotional temperament, and personal behavior into social situations (Tudge, Mokrova, Hatfield, & Karnik, 2009). This representation of the person interacts, alters, and is altered by their surrounding environment. As Tudge et al. 2009) noted, in Bronfenbrenner's model the individual can change their environmental context passively (i.e. how others in the environment react to the individual) or actively (direct influence). To this end, Bronfenbrenner outlined three particular types of personal characteristics that interact with and influence a person's context: (1) demand, (2) resource, and (3) force. Demand

characteristics are an individual's most prominent features that typically "demand" a response from other people in the environment (i.e. age, gender, skin color, etc.) Resource characteristics are those which are manifested as a result of the personal and social resources that are available to a person within their environment (i.e. socioeconomic status, access to health care, good nutritional diets, etc.). Resource characteristics are also typically less conspicuous inward features such as intelligence, emotional standing, and the influence of prior experiences. Finally, force characteristics are those that speak to an individual's "force" of character in social settings (i.e., behavior, temperament, motivation, expectations. etc.). Hence, the person develops as part of the environment and in response to any occurrences within the environment.

Both the "demand" and "force" characteristics of African American adolescents, (e.g. skin color, age, adornment, temperament, socioeconomic status, etc.) often trigger both the explicit and implicit biases of power-holding institutional agents such as educators, police, and other adults. As discussed in chapter one of this document, there is a growing body of evidence that educator biases about Black youth may be a focal driver in student-teacher interactions that lead to disciplinary issues in schools. These same anti-Black biases have also been found to be a key reason why Black and Latino youth are so frequently surveilled and stopped by police in their communities (Rios, 2011). In fact, there is considerable empirical evidence suggesting that Black youth in particular experience more race related discrimination than other racial groups (Coker et al., 2009; Fisher, Wallace, & Fenton, 2000; Greene, Way, & Pahl, 2006). For instance, Gibbons et al. (2004) found that 90% of Black youth in their sample had experienced racial discrimination at some point in their life. In various studies, Seaton and colleagues also

found that between 87-97% of Black youth in their sample had experienced at least one instance of race-based discrimination (Seaton & Douglas, 2014; Seaton et al., 2008). Along those lines, a recent investigation of anti-Black implicit racial bias on the part of White adults, Goff et al. (2014) found that Black boys older than 9 years of age were consistently perceived as less innocent, less childlike, and older than White boys of the same age.

Context

In Bronfenbrenner's model, the contexts (ecological environments) in which a person lives are also highly influential and are comprised of four nested and interrelated systems: (microsystem, mesosystem, exosystem, and macrosystem). In Bronfenbrenner's words, "the microsystem is a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features and containing other persons with distinctive characteristics of temperament, personality, and systems of belief" (Bronfenbrenner, 2005, p. 148). This system is representative of the social environments in which human beings forge, cultivate, and maintain relationships with other individuals acting within the environment. The next system, the mesosystem, is merely a network of two or more microsystems in which a person exists (i.e. system of microsystems). The third interrelated system is what Bronfenbrenner characterized as the exosystem. An exosystem is comprised of "the linkages and processes taking place between two or more settings…which does not ordinarily contain the developing person" (Bronfenbrenner, 2005, p. 149). Hence, the exosystem accounts for the influence of social factors that might not have a direct interaction with the person. The final context in Bronfebrenner's

model is identified as the macrosystem and encompasses the other systems and functions as a binding agent that both influences and is influenced by all other systems in the social ecological environment. To be precise, Bronfenbrenner defined the macrosystem as, "the overarching pattern of micro-, meso-, and exosystems characteristic of a given culture, subculture, or other broader social context…a societal blueprint for a particular culture, subculture, or other broader social context (2005, pp. 149-50). Of particular significance to the nature of the macrosystem is its acknowledgement of the influence of culture on the structural makeup of the other contextual systems. As such, for any of the other interrelated systems to have any influence they must be representative of the larger macrosystem.

Much of what this study is interested in are the interpersonal processes that occur within a young person's microsystem. Bronfenbrenner's emphasis on the interrelated effects of human ecological systems attempts to account for the influence of multiple concurrent social relationships sociocultural forces on a person's development. As Bronfenbrenner's model suggests, human interactions do not occur in a vacuum and sociocultural forces undergird and influence all human interaction. The day-to-day human interactions of Black youth are often influenced by many of these forces. For instance, elements of the exosystem such as the criminalization of Black youth in media depictions, zero-tolerance school policies, or larger economic forces often coalesce with many of the more odious aspects of the American macrosystem (legacy of anti-Black racism, pro-carceral and retributive sentiments about justice, etc) to color how Black youth are engaged by adults, their peers, and parents in society. Thus, in considering the development of African American adolescents it is important to consider and account for

the cumulative effects of both concurrent social relationships throughout a young person's microsystem as well as the environmental social forces that influence those social ties.

Time

The PPCT model's final element acknowledges the effects and influence of time on individual development. In general, Bronfenbrenner divided the effects of time into three sub-factors that outline the specific ways in which time acts on a human organism: microtime, mesotime, and macrotime. Microtime refers to the "continuity versus discontinuity" of a specific occurrence, activity, or interaction in an individual's life. Mesotime is the frequency or periodicity of these occurrences or activities over an extended period of time such as weeks, months, or years. Finally, macrotime focuses on how society wide historical systemic occurrences may influence an individual's development (Lerner, 2005, p. xvii).

Conclusion

The central focus of this study is understanding the ways in which the social relational ties of young people, especially African American youth, can contribute to exclusionary outcomes such as suspension, expulsion, or arrest. The PPCT model (process-person-context-time) is the mature version of Bronfenbrenner's original bioecological model. The core premise of the model suggests that human development occurs as a result of ongoing proximal processes within a multisystemic ecological environment. The PPCT model centers the individual within a collection of intersecting systems that envelops and essentially incubates the developing individual. According to the model, within the microsystem, a young person's proximal relationships are greatly

influenced by their personal characteristics (demand, force, and resource) as well as larger social forces from the exo- and macrosystems. This project argues that the PPCT model provides an ideal framework for conceptualizing the manner in which concurrent social relationships influence a young person's development. This is particularly true when attempting to conceptualize and account for the manner in which concurrent social relationships may contribute to particular social outcomes. The next section discusses how social relationships within the microsystem can lead to social exclusion.

Theory of Social Exclusion

Individuals who tend to have strained or conflictual relations will often find themselves excluded from social interactions. Strained or conflictual relationships with individuals functioning in official capacities as agents of the state will increase the likelihood of institutional social exclusion. Across the nation, most teachers, school administrators, and juvenile corrections officers are White (Toldson, 2013). At the same time, most youth in the public school system as well as the juvenile corrections system are youth of color. These racial differences will increase the likelihood of strained or conflictual interactions and relationships (whether it be due to racial animus or subconscious bias). This in turn increases the likelihood of Black youth being at risk for systematic institutional exclusion. The goal of this chapter is to introduce a new theoretical framework in order to justify or explain the manner in which black youth are socially excluded in society.

Origins of the Concept of Social Exclusion

Social exclusion is a theoretical concept that has a long history in European social science literature (particularly the UK). The concept of social exclusion was first coined

in 1974 by René Lenoir, the Secretary of State for Social Action for the French government. Lenoir was credited as using the term as a means of describing the "*les exclus,*" the "excluded" segment of the French population that were unemployed and incapable of gaining entry into the workforce (Silver, 1994). According to Lenoir (1974), the excluded were comprised of the, "mentally and physically handicapped, suicidal people, aged invalids, abused children, substance abusers, delinquents, single parents, multi-problem households, marginal, asocial persons, and other social 'misfits'" (as cited in Sen, 2000). In other words, the excluded were those who experienced some form of social vulnerability that reduced their ability to participate fully in social life. These outsiders were recognized as having been pushed out of the framework of society's economic, social, and cultural structures by systemic processes (Sheppard, 2006). Over time, the concept of social exclusion began to spread throughout Europe and eventually in the 1990s becoming a cabinet office in the UK government called the 'Social Exclusion Unit' or SEU (later the Social Exclusion Task Force). Subsequently, the notion of social exclusion became a new policy language that attempted to conceptualize the many social forces that contributed to social marginalization, inequality, and disadvantage.

From a global perspective, social exclusion is generally utilized as a form of policy language to describe individuals or groups of individuals who live in such states of social deprivation to be regarded as a non-participant in some aspect of social life (Mathieson et al., 2008). Accordingly, most if not all definitions of social exclusion have tended to define who are the excluded (much like Lenoir) while also explicating the multiple intersecting factors that contribute to the marginalization of particular classes of

people[1]. Thus, there has been a dual focus on the process of marginalization (social exclusion) and its consequences (i.e. the socially excluded). As Sheppard (2006) noted, the socially excluded were individuals belonging to groups that experience, "poverty, unemployment and associated multiple disadvantage… are deprived of their full rights as citizens; or [w]hose social ties are damaged or broken". From a process standpoint, there was an acute awareness that social exclusion was what can occur "when individuals or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime environments, bad health and family breakdown" (Social Exclusion Unit, 2004). While the European approach to social exclusion primarily emphasized macrosocial mechanisms that created marginalized classes (i.e. poverty) it is also important to note that definitions of social exclusion did not focus solely on institutional exclusion but also interpersonal relational exclusion. The idea and concept of social exclusion also encapsulates proximal social relations that contribute to social deprivation (de Haan, 2001). Others have also observed that individuals facing social isolation, inadequate social support, or an absence of social relations could also be defined as socially excluded (Stanley & Vella-Brodrick, 2009). As such, these conceptualization of social exclusion attempt to recognize the link between relations at the micro-interpersonal dimension and outcomes of severe social deprivation.

Operationalizing Social Exclusion

For the interests of this study, a general theory (and definition) of social exclusion was developed from the more micro-interpersonal approach of Baumeister and the broader structurally focused approaches of global governments. The foundation of this

[1] See Silver (1994), Sen (2000), Levitas (2006), and Mathieson et al., (2008) for a more detailed sociohistorical overview of varying definitions of social exclusion throughout the European Union.

general theory of social exclusion comes from the Social Exclusion Knowledge Network (SEKN), a global knowledge network established by the World Health Organization. In 2008, the committee for the Social Exclusion Knowledge Network developed a widely cited means of operationalizing social exclusion in part to examine its role in producing social health inequities. According to the SEKN, social exclusion is defined as:

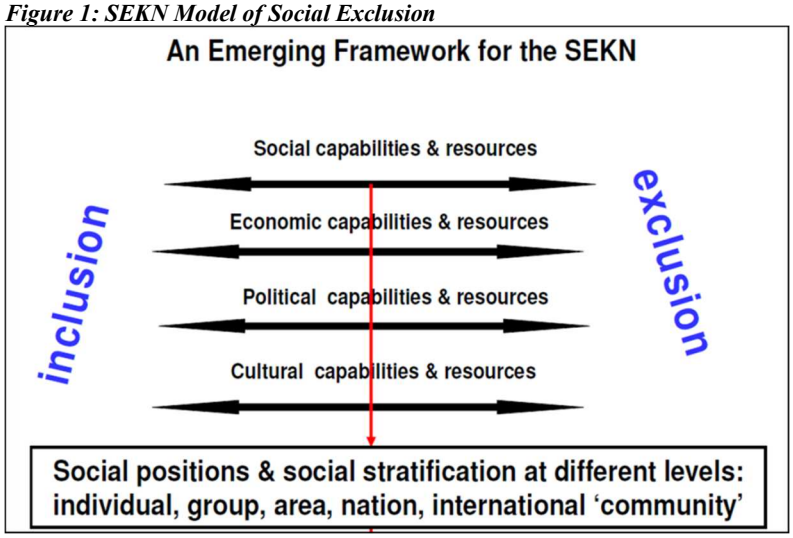
> Dynamic, multi-dimensional processes driven by unequal power relationships interacting across four main dimensions - economic, political, social and cultural - and at different levels including individual, household, group, community, country and global levels. It results in a continuum of inclusion/exclusion characterized by unequal access to resources, capabilities and rights (Popay et al., 2010).

The SEKN definition of social exclusion emphasizes the importance of power and relational interdependence as key forces that drive exclusionary processes in human social systems. SEKN subsequently identifies four specific "relational dimensions of power" that help to foster unequal power relationships (Popay et al., 2010). First, the social dimension focuses on the relationships and social bonds in a person's proximal social environment and their overall sense of belonging within a social system. Second, the political dimension emphasizes the manner in which social relationships can affect the development of representative rights and social policies and the extent to which an individual can access and exercise those rights. Third the cultural dimension speaks to the extent to which an individual's values, beliefs, norms, and ways of living are accepted and integrated into the larger social environment. Finally, the economic dimension focuses on the extent to which an individual can access or distribute material resources

(Popay et al., 2010). These four interconnected dimensions influence the structure and organization of the social environment and all too frequently fosters a stratified society characterized by unequal access to what SEKN refers to as rights, resources, and capabilities.

In the SEKN framework, "resources" are regarded as an individual's access to the 'means' to meet their basic human needs such as interpersonal social capital, material wealth, education, or assets (Mathieson et al., 2008). On the other hand, "capabilities" refers to the power that an individual has to access and utilize the resources that are available to them (Mathieson et al., 2008). As Figure 1 shows, the more capabilities and resources an individual has the more "included" they are across the social, economic, political, and cultural dimensions. However, the less means (resources) and power (capabilities) an individual can marshal, the more likely they are to experience social exclusion. In societies marked by high levels of social, racial, and economic stratification individuals who don't occupy the upper rungs of social privilege are often deprived of "capabilities" (power) and as such are at a greater risk for exclusion.

Figure 1: SEKN Model of Social Exclusion



Source: Mathieson, J., Popay, J., Enoch, E., Escorel, S., Hernandez, M., Johnston, H., & Rispel, L. (2008)

In the US, the concept of social exclusion has not been nearly as popular in political discourse as in Europe and other nations. However, at its core the concept of exclusion has mostly been used in a manner mirroring that in the UK (i.e. the experience of being "shut out" or marginalized) but without the emphasis on socioeconomic or political marginalization. For the most part the concept has seen limited usage in some empirical literature. Other than its usage by Baumeister and colleagues, there have been few instances where social exclusion has been defined as a concept. Baumeister and colleagues have written extensively on social exclusion in interpersonal social and relational settings. Baumeister's work tends to emphasize interpersonal rejection or ostracism however and not the institutional and structural approach taken in European literature.

Baumeister originally defined social exclusion as, "exclusion from social groups—that is, the fact or threat of the breaking of social bonds" (1999). Baumeister's conceptualization of "exclusion" hinged on the human biological need to belong to some form of a social group (i.e. belongingness). Specifically, his research focused on human tendencies to feel distress as a result of being separated, rejected, or otherwise excluded from social groups" (Baumeister, 1999). Thus, he was primarily interested in the micro-interpersonal processes that contribute to exclusion as well as the consequences of exclusion from an individual's proximal interpersonal social groups. Baumeister (1999) subsequently identified three reasons why a person may be excluded. According to Baumeister, an individual may be excluded if they are seen as not making an "adequate contribution" to a group or their overall welfare. Second, a person may be excluded if they are found to have violated the normative rules that may govern the social structure

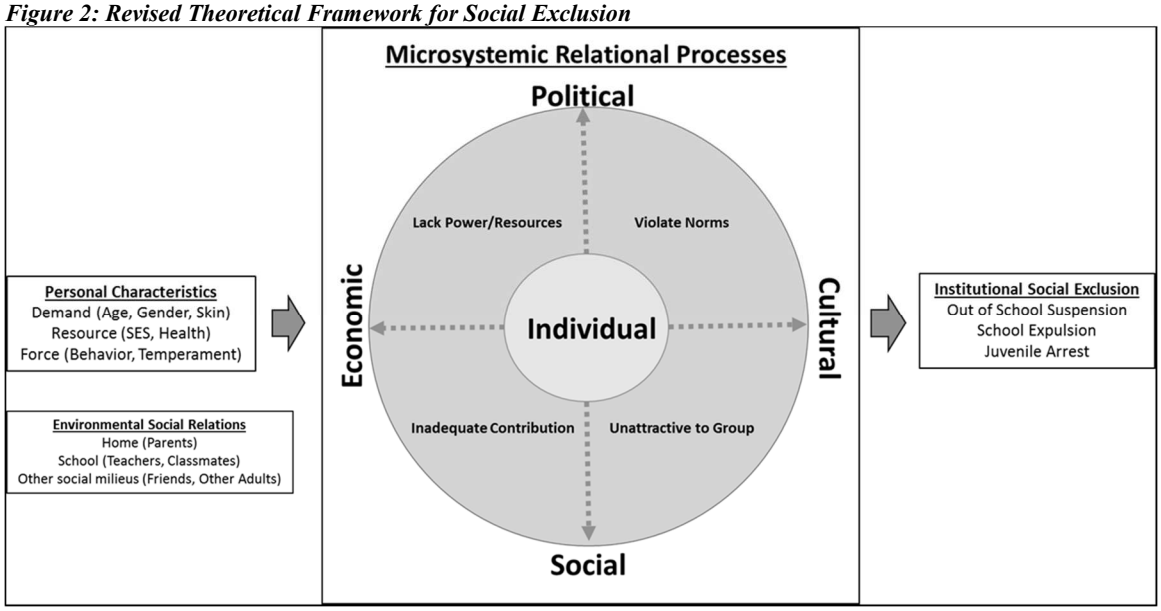
and interactional systems of a group. Third, Baumeister argued that an individual could be excluded from a group if their personality or physical appearance was found to be "unattractive" in any way.

General Framework for Social Exclusion

Figure 2 presents the revised framework for social exclusion. As shown in the model, this revised framework for social exclusion integrates the SEKN model's macrosocial framework with Baumeister's micro-interactional approach. In this blended model of exclusion, a person brings their unique characteristics into every interaction and relationship in their social environment. As Bronfenbrenner observed in his PPCT model, when individuals interact with each other in social microsystems, they are confronted by a person's demand, resource and force characteristics. For youth in particular, the most influential interactions are with their parents, friends, peers, and other adults. As Bronfenbrenner's PPCT model notes, all of these contextually driven relationships are greatly influenced by a young person's geography. Hence, the model accounts for the proximal influences of those relationships that typically occur at a young person's home, school, and other social milieus. Beyond that, the effects of exosystemic and macrosystemic forces bring additional complexity, richness, and inequality to all human social systems. As people interact within the microsystem, one of four triggering events can occur that can lead to social exclusion. A person can be excluded as a result of: (1) a lack of power or resources, (2) a violation of a set of social norms; (3) some aspect of their person is found to be unattractive to others, and (4) they fail to make an adequate contribution to the social group. Consequently, a person can experience a

continuum of varying exclusionary states along the four dimensions identified by SEKN's model of exclusion: (1) economic, (2) political, (3) cultural, and (4) social.

Figure 2: Revised Theoretical Framework for Social Exclusion



Despite their slight differences, the SEKN and Baumeister approaches to conceptualizing social exclusion easily complement each other in a number of ways. First, both approaches take a relational perspective in theorizing how individuals can experience social exclusion. However, in the SEKN framework, the underlying principle that asymmetrical power relationships can result in reduced access to economic, social, cultural, and political resources is a fundamental component to any conceptualization of social exclusion. While Baumeister does not explicitly detail what role power may play in exclusion, it is clearly implied that a person may lack sufficient social power to prevent their exclusion from a social group. Thus, the SEKN framework's focus on unequal power is a key addition to the three causes of exclusion that Baumeister developed through his work. Second, unlike Baumeister, the SEKN approach also reflects the structural approach found in global policy contexts that emphasize social, political, cultural, and economic marginalization and deprivation. Third, unlike the SEKN

definition, Baumeister provides much needed detail on how exclusion occurs through social interaction. In blending the two approaches it is evident that a more comprehensive conceptualization of general social exclusion can be theorized.

The Social Exclusion of African American Adolescents

One of the triggers for exclusion is the violation of the normative rules of a social system (Baumeister, 1999). Hence, conflictual or strained relationships will increase the likelihood of severing or compromising an adolescent's social bonds with other actors in their proximal social environment. Because of their social positioning as minors, adolescents, (particularly African Americans), generally have little social power in their social relationships and as such are at great risk for exclusion. The risk for social exclusion may be particularly salient when youth have conflicts in institutional settings or with institutional agents such as educators or police officers. Non-harmonious relationships in institutional settings, particularly with youth, are often seen as problematic and as such can trigger an institutional response such as expulsion or suspension. With Black youth, strained or conflictual relationships in institutional settings can potentially result in more serious forms of exclusion such as expulsion and/or arrest (whether through direct or indirect referral).

Forms of school pushout (suspension and expulsion) and juvenile arrest have frequently been characterized as a form of exclusion in empirical literature. In most instances however, the language of exclusion (i.e. exclusionary discipline) or formal detainment is often used in a somewhat semantic manner to describe the removal of youth from an educational setting or society. That is, social exclusion is rarely defined as a conceptual term in the school pushout or juvenile justice literature. Despite this lack of

a formal operationalization as forms of social exclusion, there is considerable evidence that suggests these three adverse experiences (suspension, expulsion, and juvenile arrest) do indeed meet the criteria detailed in the SEKN definition of social exclusion. The SEKN model clearly delineates that exclusion occurs as a result of asymmetrical power relationships which result in differential access to economic, social, cultural, or political resources. As such, exclusion from school via suspension or expulsion and exclusion from society through arrest do indeed limit a young person's access to all four dimensions outlined by the SEKN framework. Thus, the goal of this project is to further explore the association between a young person's relationships and the three particular forms of social exclusion: suspension, expulsion, and juvenile arrest.

CHAPTER 4: DATA & METHODOLOGY

Purpose of the study

The purpose of this study is to explore how an adolescent's social relationships might influence their likelihood of experiencing a form of social exclusion such as suspension, expulsion, and juvenile arrest. To that end, this study seeks to add to the literature on adolescent social relationships by identifying and classifying patterns of adolescent relational quality across their social environment. A second aim of this dissertation was to test the premise of a general theory of social exclusion. That is, that youth are more likely to experience a form of institutional social exclusion if they have strained or conflictual relational ties with actors or peers in institutional settings. Finally, this study aimed to add to the research on what factors contribute to the disproportionate social exclusion of African American youth by examining the association between adolescent social relationships and three exclusionary outcomes. This project utilized a nationally representative sample of Black and White adolescents to test for racial differences as well as a restricted sub-sample of African American adolescents to examine intra-racial differences across relational profile types. To that end, the following research questions guided this study:

1. What are the patterns of social relationship quality among adolescents across their social environment?
2. How does adolescent social relationship quality vary across socio-demographic characteristics (race, gender, SES)?
3. What is the association between race, adolescent relationship quality, and various indicators of social exclusion (suspension, expulsion, juvenile arrest)?

4. What is the association between the quality of social relationships and various indicators of social exclusion (suspension, expulsion, juvenile arrest) in a sample of African American adolescents?

Hypotheses

The first research question in this dissertation utilizes a model-based (latent class) approach as opposed to a traditional hypothesis-testing approach. Since this is a somewhat more exploratory and data-driven inquiry there were no hypotheses generated for this section of the study. Research questions three and four however were supported by three hypotheses:

Hypothesis 1: Adolescent relationship quality will be associated with social exclusion (out-of-school suspension, expulsion, and juvenile arrest) in a sample of adolescents.

Hypothesis 2: The association between adolescent relationship quality and social exclusion (out-of-school suspension, expulsion, and juvenile arrest) will be stronger among African American youth as compared to White youth in the sample.

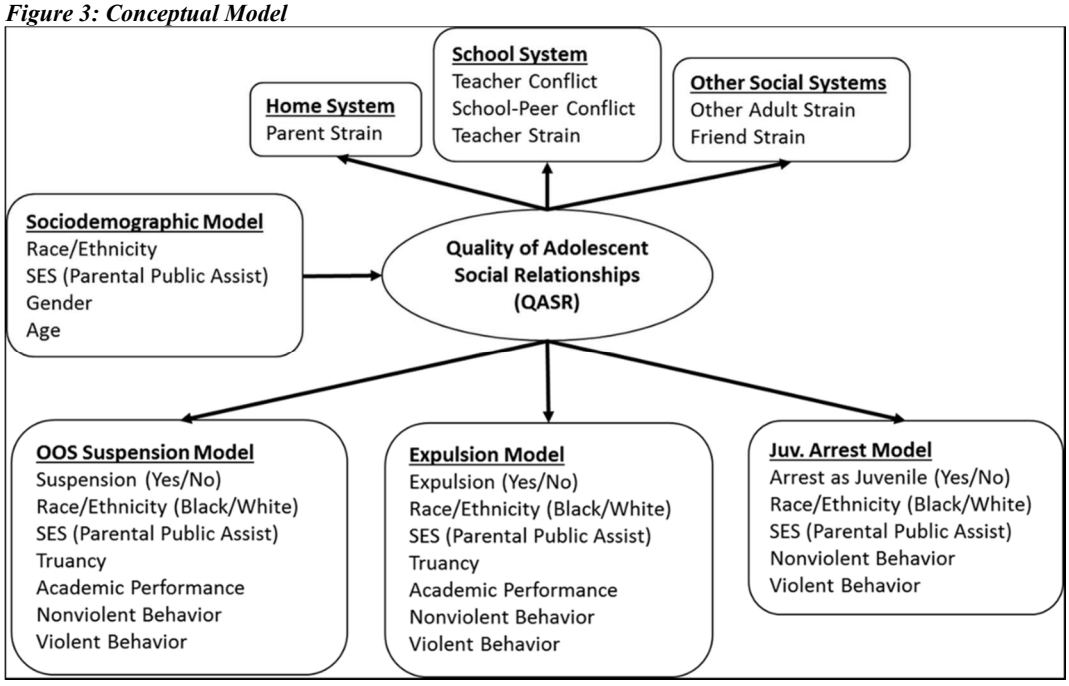
Hypothesis 3: Adolescent relationship quality will be associated with social exclusion (out-of-school suspension, expulsion, and juvenile arrest) in a sub-sample of African American adolescents.

Conceptual Model

Figure 3 presents the conceptual model for this study. As depicted in the model, this study seeks to first explore whether there are any clear relational patterns across an

adolescent's ecological social environment including the home, school, and other milieus. As part of this exploratory analysis, this study also examines how this relational patterning might vary across key sociodemographic indicators (Bronfenbrenner's "demand characteristics") such as age, gender, race, ethnicity, and economic status. Finally, this study seeks to test the premise of the proposed "theory of social exclusion" by examining whether there is an association between the quality of an adolescent's social relationships and three indicators of formal institutional social exclusion: out of school suspension, school expulsion, and juvenile arrest.

Figure 3: Conceptual Model



Data

This study will use a cross-sectional research design to test its hypotheses. The unit of analysis will be U.S. adolescents between the ages of 12-18. Data for this analysis will be drawn from the National Longitudinal Study of Adolescent to Adult Health (Add Health). The Add Health is a nationally representative sample of United States adolescents who were enrolled in grades 7-12 during the 1994-1995 academic year. The

Add Health is a popular and well-regarded dataset that provides extensive information about health, social, educational, and behavioral outcomes for U.S. adolescents between the ages of 11 to 21. The first wave of data collection occurred in 1995 and ended with Wave 4 when respondents had reached adulthood. The data used in this study will be drawn from Waves 1 and 3 of the Add Health public-use dataset (downloaded from the ICPSR archive). The public-use dataset is a random subsample of 6,504 respondents from the full Wave 1 Add Health data set. Waves 2 and 3 of the public-use data set had samples of 4,834 and 4,882 respectively.

Sample Design

The Add Health used a school-based systematic-stratified sampling design. The original study sampling frame was a database of 26,666 U. S. High Schools from the Quality Education Database (QED). A stratified sample of 80 high schools (defined as schools with an 11th grade and more than 30 students) was selected from the original QED frame of 26,666 high schools. Schools were stratified by size, region, regional characteristics (urbanicity), school type (public, private, parochial), demographic characteristics, and size. For each high school selected, the survey designers identified and recruited one of its feeder schools (typically a middle school) with probability proportional to its student contribution to the high school. More than 70% of the original school sample agreed to participate in the study. If a school elected not to participate, a comparable replacement schools was selected within each stratum until an eligible school-pair (high school and feeder) was found. Overall, 79% of the schools that were contacted for the study agreed to participate. A total of 52 feeder schools (junior high & middle) were selected. The final sample was comprised of 132 schools, each associated

with one of 80 communities. School size varied from fewer than 100 students to more than 3,000 students.

Participants

Data for the Add Health was collected over the course of four waves. The initial 1994 in-school survey was administered over the course of a single day during a single class period (45-60 mins.). Over 90,000 students completed the initial in-school survey. In 1995, an additional sub-sample of 27,000 adolescents was drawn from the in-school sample for an in-home interview. This core sample was produced by stratifying students from each sample school (and feeder) by age and gender. Approximately 17 respondents were then randomly selected from each stratum resulting in approximately 200 students from each of the 80 high schools and 52 feeder schools. The initial core in-home sample produced 12,105 adolescents from grades7-12. Cuban, Puerto Rican, Chinese, physically disabled adolescents and Black adolescents with college-educated parents were over-sampled. The final sample for Wave 1 was 20,745 respondents. The follow up sample (N=14,738) in Wave 2 included respondents from Wave 2 excluding 12th graders who were not part of the genetic sample. The sample in Wave 3 (N=15,197) was comprised of respondents from Wave 2 and their partners. A number of cases from Wave 1 (N=687) were excluded from this wave because they were not in the genetic sample and were not given sampling weights.

All interviews were administered in respondents' homes. Interviewers read less-sensitive survey items aloud to respondents and recorded their responses on laptop computers in order to protect confidentiality. For more sensitive items, respondents listened to pre-recorded questions on earphones and entered their responses directly onto

the laptop computer. All interviews lasted between one to two hours. Wave 2 in 1996 and Wave 3 in 2001 used the same procedures.

Variables

The Add Health contains variables that can be used to indicate the quality of an adolescents' social relationships (QASR) across various milieus. The dataset also offers a wide number of measures of interest to this study. Specifically, the Add Health offers measures of externalizing behaviors (non-violent and violent delinquency), academic performance, social exclusion (suspension, expulsion, juvenile arrest), and various other demographic variables.

Independent Variable: Quality of Adolescent Social Relationships (QASR)

A latent construct was modeled as a means of assessing the quality of an adolescent's social relationships. This latent indicator of social relationship quality (QASR) was meant to account for the heterogeneity and unique variability of an individual adolescent's relationships across their social environment. Specifically, this study attempted to account for a young person's relationships across three social environments: (1) home, (2) institutional/school, and (3) social milieus other than home and school. To that end, six variables were selected for inclusion with each representing the respondent's evaluation of the quality of their relationships with different social actors in their lives. In order to account for a young person's relationships in an institutional environment three variables were identified as indicators of relational quality. Two variables assessed whether there were conflictual relationships between teachers and students. Conflict with teachers was measured with an item asking respondents to report how frequently they had trouble, "getting along with your teachers"

during the most recent year they attended school. Conflict with school peers was assessed with a similar item that asked respondents to detail how often they had trouble, "getting along with other students" during the most recent year they attended school. Both items were measured with a 5-point scale with responses ranging from *never* (0) to *everyday* (4). Before inclusion in the LCA model, both items were dichotomized in order to aid in interpretation. The recoded variable thus reflected a frequency of conflict ranging from "rarely or never having problems getting along" (never to just a few times) to "regularly having problems getting along" (once a week to everyday). The third institutional variable asked respondents to evaluate whether their teachers[2] "cared" about them on a 5 point scale, with responses ranging from *not at all* (1) to *very much* (5). This item was reverse-scored and collapsed into a 3-point scale ranging from caring relationships (care very much/quite a bit) to low-caring relationships (not at all/very little). In order to account for the social interactional spaces between a young person's home and school, two items were identified as indicators of peer friendships and relationships with other adults[3]. Finally, a single item was identified as an indicator of parental relationship quality in a young person's home environment. These three variables (friends, parents, other adults) also asked respondents to evaluate whether these actors "cared" about them on a 5 point scale, with responses ranging from *not at all* (1) to *very much* (5). These items were also reverse-scored and collapsed into a 3-point scale

[2] Despite their apparent similarity, the relationship between the teacher-conflict item and teacher-strain variable did not violate the LCA specific assumption of local independence (z-score bivariate residuals <1.96). Several models with and without the teacher-strain and teacher-conflict items were run and all were found to be inferior to the models including both items. As a result, both items were retained in the final model.

[3] The Add Health survey item is somewhat broadly stated and does not specify which adults may or may not care about the respondent (see appendix for questionnaire text). Yet, as with the teacher-related items, this item contributed to the overall quality of the model and did not violate the local independence assumption.

ranging from caring relationships (care very much/quite a bit) to low-caring relationships (not at all/very little). The full text of all survey items can be found in the appendix below.

Dependent Variables: Indicators of Social Exclusion (Suspension, Expulsion, Juv. Arrest)

Three indicators of institutional social exclusion were assessed as part of this study. Specifically, items reporting on respondents' history of school suspension, expulsion, and juvenile justice system involvement were utilized as part of this study's analyses.

School Suspension/Expulsion

Respondents' history of out of school suspension and expulsion was measured by two self-report items in both Wave 1 of the Add Health. Respondents were asked to respond with a *yes* (1) or *no* (0) in response to questions about their lifetime experience with suspension or expulsion. The full text of the survey items can be found in the appendix.

Juvenile Arrest

Juvenile Arrest was measured by a single continuous item in Wave 3 of the Add Health. Respondents were specifically asked how many times they were arrested prior to turning 18 years of age. For analytical purposes this item will subsequently be recoded as a dichotomous "yes/no" dummy variable indicating whether a respondent had experienced a juvenile arrest or not.

Control Variables: Race, Age, Gender, Socioeconomic Status, Academic Performance

Four sociodemographic (race, age, gender, SES), educational (truancy and GPA), and behavioral (violent and non-violent criminal behavior) control variables were included in the analyses. Race/ethnicity, gender, age, socioeconomic status, truancy, delinquent behavior, and prior academic performance were all measured by various items in Wave 1 of the Add Health.

Gender & Age

The gender variable is a single categorical item drawn from Wave 1 of the survey. A respondent's age was calculated from four survey items. First, respondents were asked what month and year they were born. In order to calculate the respondent's age, these items were then subtracted from the items documenting the day, month, and year in which the respondent completed the survey.

Race/ethnicity

The variable utilized to measure race and ethnicity is a composite item of several self-report items from Wave 1. Respondents were asked whether they self-identified as White, African American, American Indian, or Asian/Pacific Islander. Respondents were also asked if they self-identified as having a "Hispanic" origin with additional questions specifying the country of origin. Individuals who identified as having a Hispanic origin were identified as Hispanic/Latinx regardless of their race. Responses to these two survey items were subsequently combined into a single variable item called "race/ethnicity". Because this study was specifically interested in racial disparities in social exclusion, mixed-race individuals who identified as having an African-American ancestry were labelled as Black/African-American.

Socioeconomic Status

A proxy measure for socioeconomic status was created from two items asking about parental receipt of public assistance/ welfare. The two Add Health items asked whether the respondent's resident mother and resident father had received any form of public assistance ("such as welfare"). The responses to these two questions were combined into a single item and dichotomized as a "yes/no" dummy variable (see appendix).

Academic Performance

Academic performance was measured by a composite indicator developed from four self-reported grade items. Respondents were asked to report their most recent grades in english, mathematics, history/social studies, and science. Similar to Sieving et al, (2001), the composite measure was created by reverse-scoring (A=4, 1=D or lower), summing, and averaging grades. This composite measure represented each respondent's overall grade point average. This item was then recoded as a four item factor variable with four cutoff points representing an overall letter grade from letter grade "A" to "D or lower".

Unexcused Absences (Truancy)

Unexcused school absences or truancy was measured with a single continuous item asking respondents to report the number of times that they skipped a full day of school without an excuse. This item was also recoded as a dichotomous "yes/no" variable indicating the presence of at least one unexcused absence.

Control Variables: Externalizing Behavior Problems

Externalizing behaviors were measured through the use of two delinquency indexes constructed from items from Wave 1 of the Add Health's "Delinquency Scale." Respondents were asked to report how often they performed specific delinquent acts within the past 12 months. Responses were recorded on a four point ordinal scale from "*never*" (0) to "*5 or more times*" (3).

Violent Delinquency Index

Four items on the survey asked respondents to report on the frequency of their involvement in the following violent behaviors: "*get into a serious physical fight,*" "*hurt someone badly enough to need bandages or care from a doctor or nurse,*" "*use or threaten to use a weapon to get something from someone,*" and "*take part in a fight where a group of your friends was against another group*". Responses to these items were summed together to generate a "violent delinquency index" with scores ranging from 0 to 12 where higher values indicating a greater prevalence of violent delinquent behavior on the part of the respondent. The coefficient alpha for the constructed violent delinquency scale indicated acceptable internal consistency (α=0.72).

Nonviolent Delinquency Index

Five other survey items asked respondents to report in the frequency of their involvement in the following nonviolent delinquent behaviors: *"deliberately damage property that didn't belong to you," "take something from a store without paying for it," "go into a house or building to steal something," "steal something worth more than $50," and "steal something worth less than $50".* Again, these items were summed together to form a "nonviolent delinquency index" with scores ranging from 0 to 15

where higher values indicated a greater prevalence of nonviolent delinquent behaviors. This nonviolent delinquency index also show acceptable internal consistency (α=0.77).

Data analysis procedures

Analysis Plan:

In order to answer the above research questions this analysis utilized a mix of latent class analysis, logistic, and multinomial logistic regression. In order to answer question 1 and group individuals based on the quality of their relationships, a latent class model approach (LCA) was conducted using MPlus version 7 (Muthen & Muthen, 2010). Latent class analysis is a data driven approach that utilizes categorical variables to estimate distinct patterns of subpopulations in data, rather than classifying persons a priori. The latent class analysis was conducted with six indicators using STATA 13.0 and the mixture model in MPlus (Muthen & Muthen, 2010) statistical software. Adolescent respondents were classified into distinct groups on the basis of their self-reported responses to items asking about the quality of the respondents' relations with their teachers, school peers, parents, friends, and other adults.

Identifying and selecting the most ideal latent class model typically includes the assessment of a model's absolute fit and relative fit when compared to other models as well as the meaningfulness of resulting classes (Collins & Lanza, 2010). Absolute fit is typically assessed via the likelihood-ratio chi-square statistic (G^2). The G^2 statistic tests whether the specified model is a good fit for the data with a significant p-value indicating poor model fit (Agresti & Kateri, 2002). Relative fit is assessed by several fit indices including the sample size adjusted Bayesian Information Criterion (aBIC) (Sclove 1987), Bayesian Information Criterion (BIC) (Schwarz 1978), and the Akaike Information

Criteria (AIC) (Akaike 1974). For each of these statistics, a lower value indicates that the model is a superior model fit and parsimonious (Collins & Lanza, 2010). The Vuong-Lo-Mendell-Rubin likelihood ratio difference test (VLMRT) is also used to assess the fit between two competing models that differ by one class (Lo, Mendell, & Rubin, 2001). For example, a five-class model with a nonsignificant p-value indicates that the four-class model fits better than does the five-class model. A final indicator of model classifications, *entropy*, indicates better class separation (i.e. more distinct classes) with values closer to 1 indicating superior model classification. Finally, the overall bivariate standardized Pearson residuals of the model can be examined in order to assess whether any of the covariates violate LCA's assumption of local independence. In this regard, any z-score greater than 1.96 would indicate a violation of this key assumption (Haberman, 1973).

All of the remaining analyses for research questions 2, 3, and 4 were also conducted with STATA 13. Because the dependent variables in these remaining questions were a mix of binary and factor variables, logistic and multinomial logistic regression were identified as the appropriate statistical methods for these analyses. In question 2, a multinomial logistic regression model was fitted to the data in order to explore the relationship between several sociodemographic characteristics and the latent QASR variable. Question 3 and all of its sub-questions utilized logistic regression to determine the relationship between three indicators of social exclusion and a 'Race X QASR' interaction in a restricted sample of just Black and White adolescents. Question 4 and all of its sub-questions also utilized logistic regression to determine the relationship between three indicators of social exclusion and QASR in a sample of African American

youth alone. Because the Add Health utilized a complex sampling design, all analyses included the appropriate survey weights in order to avoid incorrect estimates and variances (Chantala & Tabor, 2010). All standard errors were calculated using Taylor Series linearization with STATA version 13. Finally, all analyses in questions 2-4 utilized STATA's default setting of listwise deletion thereby excluding the entire record if a single item was missing from the data matrix. The analysis for research question one utilized the MPlus default setting of maximum likelihood estimation in the latent class analysis (Muthen & Muthen, 2010).

CHAPTER 5: RESULTS OF ANALYSIS

Research Question 1: What are the patterns of social relationship quality among adolescents across their social environment?

Descriptive Characteristics of Analytic Sample

Table 1 describes the social demographic and relational characteristics of the sample. The total sample represents 22.2 million adolescents in the U.S. ages 11-21 (N=6,504). The average age of the sample was approximately 15 years of age and the sample is generally evenly divided between young women (49.2%) and men (50.8%). Approximately 66% of the sample were White, 3% Asian American, 2% Native American, 16% African American, and 12% Hispanic/Latino. Finally, almost 90% of the sample reported that their parents did not receive any form of public assistance.

Model Summary: Latent Class Analysis of Adolescent Social Relationship Quality

The first research question of this study examines the quality of adolescent social relationships across their social ecological environment. Table 1 also describes the participants' proportional responses to the six indicators of relational quality utilized in this analysis. Most of the sample reported that their parents (96%), friends (97%), and other adults (86%) generally cared about them. Most respondents also noted that they generally did not have trouble getting along with their teachers (82%) and other students (84%) in their schools. On the other hand, only 52% of respondents felt that their teachers cared "quite a bit" about them with 35% reporting that their teachers only somewhat cared for them.

Table 1: Descriptive Characteristics of Social Demographics & Relationships for Adolescents (11-21), Add Health

	Rate	SE	Obs	Count
Race/ Ethnicity, %				
White, Non-Hispanic	66.10%	2.89%	3,744	14,586,237
Asian, Non-Hispanic	3.30%	0.66%	243	733,516
Native American, Non-Hispanic	2.20%	0.32%	135	482,365
African American, Non-Hispanic	16.10%	2.27%	1,584	3,563,341
Hispanic, All Races	12.30%	1.80%	743	2,712,411
Total	100.00%		6,449	22,077,870
Age, Mean	15.45261	0.1148	6501	22,255,495
Gender				
Male	50.80%	0.84%	3,147	11,313,969
Female	49.20%	0.84%	3,356	10,946,676
Total	100.00%		6,503	22,260,644
Rec. Public Assistance				
No Public Assistance	89.70%	0.89%	5,770	19,719,343
Receives public assistance	10.30%	0.89%	657	2,265,309
Total	100.00%		6,427	21,984,652
Trouble Getting Along w/ Teachers				
No Trouble	81.70%	0.67%	5,246	17,796,870
Trouble	18.30%	0.67%	1,122	3,980,751
Total	100.00%		6,368	21,777,621
Trouble Getting Along w/ Students				
No Trouble	83.70%	0.65%	5,352	18,234,874
Trouble	16.30%	0.65%	1,016	3,542,748
Total	100.00%		6,368	21,777,621
Adults Care				
Quite a bit	85.90%	0.55%	5,586	18,996,922
Somewhat	10.70%	0.50%	671	2,368,251
Don't Care	3.40%	0.26%	206	753,294
Total	100.00%		6,463	22,118,467
Teachers Care				
Quite a bit	52.30%	1.16%	3,413	11,490,913
Somewhat	34.80%	0.97%	2,216	7,640,756
Don't Care	13.00%	0.65%	804	2,846,819
Total	100.00%		6,433	21,978,487
Parents Care				
Quite a bit	95.70%	0.28%	6,205	21,186,067
Somewhat	3.00%	0.23%	186	662,895
Don't Care	1.30%	0.15%	83	296,020
Total	100.00%		6,474	22,144,982
Friends Care				
Quite a bit	97.20%	0.29%	6,298	21,506,984

Don't Care	2.80%	0.29%	173	621,293
Total	100.00%		6,471	22,128,277

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Findings: Identification of Latent QASR

In order to converge on the best solution, the number of classes were increased sequentially in a stepwise fashion and stopped when the model best fitting the data was identified. Six models ranging from one to six latent classes were compared to select a model of social relational quality. Table 2 shows the various absolute and relative model fit statistics utilized in model selection. Starting with absolute fit, the likelihood ratio chi-square (G^2) for the models with one through five latent classes all had significant test statistics ($p<0.0001$) thereby indicating that they may not adequately account for the heterogeneity of social relationship quality in this sample of respondents. However, the five and six class (5c & 6c) models showed to have significant G^2 values which suggests that these models are an adequate representation of this sample of data. Furthermore, upon reviewing the standardized bivariate residuals, neither the five or six class models violated the assumption of local independence (z-score <1.96). Looking at the indicators of relative fit between the five and six-class models, the BIC and aBIC both show that the five-class model is more preferable (BIC: 5c=32733.1, 6c=32770.7; aBIC: 5c=32577.4, 6c=32583.2), whereas, the AIC suggests that the six model may be superior (AIC: 5c=32400.9, 6c=32370.8). Finally, the results of the Vuong-Lo-Mendell-Rubin Likelihood ratio test (VLMRT) indicate that the five class model is a better fit than the four-class solution (5c: p= 0.0229), however, the six-class model is not significant (6c: p=0.7611) thereby showing that the five-class model fits significantly better. A review of the average posterior probabilities also indicated that the five-class model is an ideal solution. The average posterior probabilities were .82 for 'Class 1', .76 for 'Class 2', .86 for 'Class 3', .91 for 'Class 4', and .91 for 'Class 5'. Taking into account the high overall

model entropy (.80) there is moderately low classification error, despite the somewhat low assignment probability for Class 2. Based upon the evaluation of the above fit statistics, parsimoniousness of the model, and an examination of the interpretability of all models, it was decided that the five class solution was the most optimum model.

Table 2: QASR Latent Class Model Fit Statistics

Model	#FP	G^2	LogL	BIC	aBIC	AIC	Entropy	VLMRT *p*
1C	9	0	-17374.551	34828.1	34799.5	34767.1		
2c	19	0	-16479.05	33124.9	33064.5	32996.1	0.627	0
3c	29	0	-16296.646	32847.9	32755.7	32651.3	0.735	0
4c	39	0.0001	-16187.581	32717.5	32593.6	32453.2	0.799	0.0004
5c	**49**	**0.0623**	**-16151.466**	**32733.1**	**32577.4**	**32400.9**	**0.800**	**0.0229**
6c	59	0.5095	-16126.404	32770.7	32583.2	32370.8	0.805	0.7611

Note: FP=free parameters, LogL = Loglikelihood; BIC = Bayesian Information Criterion; aBIC = Sample Size Adjusted Bayesian Information Criterion; AIC Akaike Information Criteria; LMRT = Vuong-Lo-Mendell-Rubin Likelihood Ratio Test, G^2=likelihood ratio chi-square. Bold values represent justification for identifying the 5 class solution as most parsimonious.

Five Latent Subgroups: Sociodemographic Profiles of Latent Social Relational Classes

The latent class analysis revealed an interpretable five-class solution in terms of adolescent social relational quality. Table 3 provides the posterior probabilities for group membership and endorsement of each item in the LCA. The first latent class is comprised of individuals with strained relationships with their friends, teachers, and other adults. The conditional probabilities of having strained (i.e. "uncaring") relations in this class with other adults=0.557, teachers=0.656, and friends=0.537. This subgroup represents 2% of the sample (N=129) and was subsequently labeled "Strained Social Relations." The second latent subgroup is characterized by poor relationships primarily in the school environment. Individuals in this group had high probabilities for reporting problematic (1.00) and strained (0.831) relationships with teachers and problematic (trouble getting along) relations with student peers (0.565). This second subgroup

represents 1.79% of the sample (N=110) and was labelled as have "Poor School Relations." The third latent class was comprised of individuals who reported positive relationships with student peers (0.761), parents (0.778), and friends (0.981). On the other hand, members in this group only had moderately positive relationships other adults in their lives (0.838) and a somewhat mixed response to teachers with group members having no trouble getting along with teachers (0.732) but only a moderately positive relationship (0.612). This subgroup represents 8.55% (N=555) of the sample and was labelled "Moderate Global Relations." Adolescents in the fourth latent class were likely to report having problematic relationships only with teachers (0.694) and represents 14.4% of the sample (N=936) and was labelled as the "Poor Teacher Relations" subclass. Finally, the fifth and largest latent class represents 73% (N=4,762) and was labelled as the "Strong Global Relations" group due to respondents' high probability for reporting strong social relations across their ecological environment. Figure 1 shows the item response probabilities for reporting positive social relationships for all five classes.

Figure 4: Item-response probabilities for five-class model (probability of endorsing item given latent class)

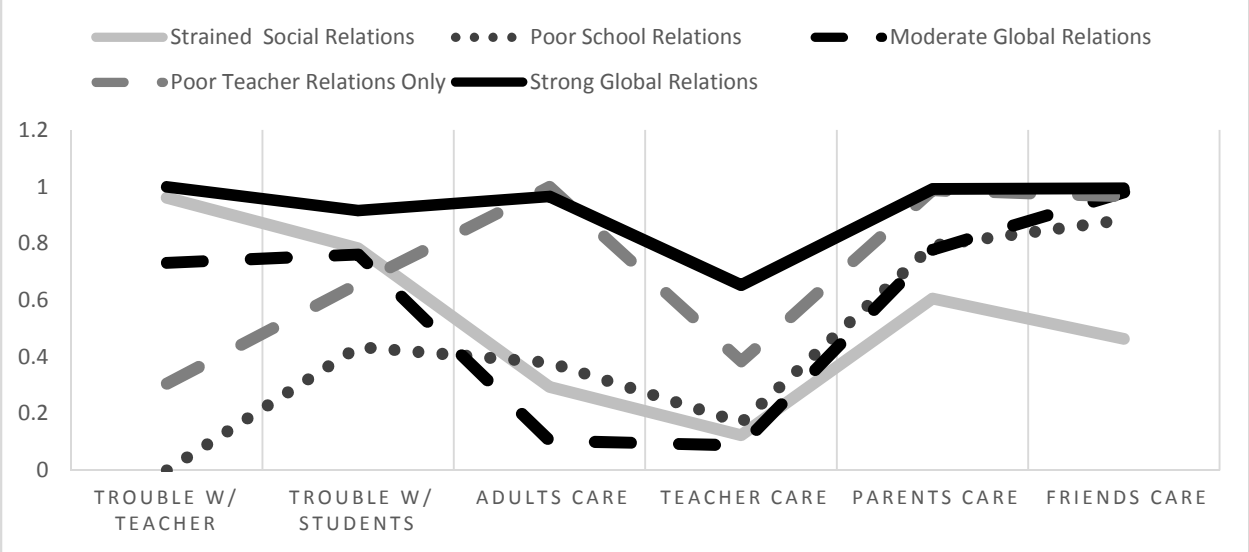


Table 3: Probability of Responding to Each Option Per Item Given Latent Class Membership

	Class 1	Class 2	Class 3	Class 4	Class 5
	Strained Social Relations	**Poor School Relations**	**Moderate Global Relations**	**Poor Teacher Relations Only**	**Strong Global Relations**
Trouble w/ Teacher					
No Trouble	0.961	0	0.732	0.306	1
Trouble	0.039	1	0.268	0.694	0
Trouble w/ Students					
No Trouble	0.783	0.435	0.761	0.659	0.916
Trouble	0.217	0.565	0.239	0.341	0.084
Adults Care					
Quite a bit	0.294	0.38	0.105	1	0.966
Somewhat	0.15	0.315	0.838	0	0.023
Don't Care	0.557	0.305	0.057	0	0.011
Teacher Care					
Quite a bit	0.124	0.169	0.088	0.384	0.653
Somewhat	0.219	0	0.612	0.397	0.313
Don't Care	0.656	0.831	0.299	0.219	0.034
Parents Care					
Quite a bit	0.606	0.793	0.778	0.988	0.992
Somewhat	0.077	0.116	0.199	0.01	0.006
Don't Care	0.317	0.091	0.022	0.002	0.001
Friends Care					
Quite a bit	0.463	0.884	0.981	0.967	0.994
Don't Care	0.537	0.116	0.019	0.033	0.006
Class Counts	129	110	555	936	4762
Proportions	1.99%	1.69%	8.55%	14.42%	73.35%

<u>Research Question 2</u>: How does adolescent social relationship quality vary across socio-demographic characteristics (race, gender, SES)?

A multinomial logistic regression was conducted in order to examine how the quality of an individual's social relationships may be associated with select socio-demographic characteristics. Odds ratios from a multinomial logit model were examined with each individual's most likely QASR class membership as the dependent variable[4].

Descriptive Characteristics of Latent QASR Group

Tables 4 and 5 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe.

Race/ Ethnicity

In the strained social relations group, White adolescents (39.40%) made up the largest racial group in the sample with African American (25.60%) and Hispanic/Latino (22.50%) youth making up the two next largest groups. Asian American (9.00%) and Native American (3.60%) youth were the two smallest racial sub-groups in this class. In the poor school relations class, White adolescents made up 56% of the group with African Americans making up 26%, Hispanics/Latinos making up 12%, Native Americans making up 6% and Asian Americans at 1%. In the moderate global relations

[4] It should be noted that several authors have observed that there are various issues associated with utilizing a two-step procedure with most likely class membership in a regression analysis (Asparouhov & Muthén, 2014; Clark & Muthén, 2009). Specifically, usage of the most-likely-class membership as a covariate in secondary analyses has been shown to distort estimates and produce incorrect standard errors. This is primarily due to the fact that the most-likely-class membership is treated as a fixed, exact, observed variable that does not account for the fact that an individual may not be perfectly classified into a single latent class. As a result, incorrect standard errors may lead to incorrect conclusions about an effect's significance (Clark & Muthén, 2009). To that end, Clark & Muthén (2009) have argued that an analyst should only use the most-likely class membership if the entropy is .80 or greater (i.e. 80% of individuals were correctly classified). In their simulation study, Clark & Muthén, (2009) found that model's using most-likely-class membership as a covariate performed well when the entropy was suitably high (≥.80). They did caution however that it may be prudent for the analyst to use a significance criterion more stringent than 0.05 (Clark & Muthén, 2009). Since, the five-class model produced an entropy of .80, it is safe to proceed with the most-likely-class-membership as a covariate in this study's analyses.

class, White youth again were the largest sub-group represented. Hispanic/ Latino youth were the second largest subgroup (15.3%) and African American youth were the third largest with 13% of the class. Asian Americans were the fourth largest representing 5% of the subgroup and Native Americans were the smallest at 2%. For the poor teacher relations class, White youth represented 62% of the subsample with African American adolescents making up 20% of the subsample, And Hispanic/Latino youth representing 12% of the class. Native American (3%) and Asian American (2%) youth were again the two smallest percentages in this class. In the largest latent class, strong global relations, White youth made 68% of the subgroup, Black youth made up 15%, and Hispanic/Latino youth made up 12%. Asian American adolescents were 3% of the subgroup and Native Americans were 2%. An *F*-test[5] for independence indicated a significant association between race/ethnicity and the variable for latent class, $F(13.59, 1780.65)=5.4099$ $p<0.001$.

Age & Gender

The average age of youth belonging to the strained social relations class was 15.8 years with males making up 59% of the strained social relations sub-group. For the poor school relations class, the average age for this sub-group was 15.3 years and 66% of the subgroup were male. The average age of youth in moderate global relations subgroup was 15.8 years and 55% of the subgroup were males. In the poor teacher relations class, the average age was 15 years and 61% of the subgroup were males. Finally, the average age of the strong global relations subgroup was 15.5 years and women made up 52% of

[5] In order to account for the Add Health survey design, the Stata software transforms the standard Pearson X^2 statistic into an F statistic using non-integer degrees of freedom. The p-value produced for the F-statistic can be interpreted in the same manner as the Pearson chi-square. See the Stata Survey Data Reference Manual (Release 13) for more details (Stata, 2013).

the class (the only subgroup where women outnumbered males). An *F*-test for independence indicated a significant association between gender and the variable for latent class, $F(3.65, 478.05) = 12.30$ $p<0.001$.

Public Assistance

In the strained social relations class, 20% of the sub-group lived with parents who received public assistance (the largest proportion of the five sub-groups). Approximately, 17% of the youth in the poor school relations subgroup received some form of public assistance. Eleven percent of the members in the moderate social relations class lived in households that received some type of public assistance. Of the poor teacher relations class, a little more than 14% of the subsample lived in a household that received public assistance. Finally, only 9% of the members in the strong social relations class lived in households where at least one parent received public assistance. An *F*-test for independence indicated a significant association between public assistance and the variable for latent class, $F(3.76, 492.65) = 10.27$ $p<0.001$.

Model Summary: Quality of Social Relationships and Socio-demographic Characteristics.

A five-level factor variable classifying the quality of an individual's social relationships was entered into a multinomial logit model as the dependent variable. Four variables representing race, gender, age, and a proxy variable for socioeconomic status (receipt of public assistance) were entered into the first block as the independent variables. The overall model was significant, $F(28, N=6,365) = 6.94$, $p<0.001$, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level

(F=0.101) for this model indicating that it is a good fit for these data. Table 6 shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

Table 4: Descriptive Characteristics of Latent QASR Groups (1-3)

	Strained Social Relations				Poor School Relations				Moderate Global Relations			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
Race/ Ethnicity, %												
White, Non-Hispanic	39.40%	6.35%	44	176,686	56.10%	6.18%	55	241,056	64.40%	3.42%	311	1,265,459
Asian, Non-Hispanic	9.00%	3.14%	9	40,222	1.00%	0.70%	2	4,231	5.10%	1.16%	33	100,996
Native American, Non-Hispanic	3.60%	2.10%	6	16,167	5.60%	2.49%	5	24,164	2.00%	0.62%	13	39,040
African American, Non-Hispanic	25.60%	5.36%	41	114,978	25.60%	5.87%	33	110,200	13.20%	2.24%	111	259,641
Hispanic, All Races	22.50%	5.07%	29	100,768	11.70%	3.23%	15	50,251	15.30%	2.77%	82	299,735
Total	100.00%		129	448,821	100.00%		110	429,902	100.00%		550	1,964,869
Age, Mean	15.8	0.2			15.3	0.2			15.8	0.1		
Gender												
Male	59.10%	5.30%	73	265,410	66.30%	5.35%	71	284,896	55.00%	2.69%	299	1,093,513
Female	40.90%	5.30%	56	183,412	33.70%	5.35%	39	145,006	45.00%	2.69%	256	893,719
Total	100.00%		129	448,821	100.00%		110	429,902	100.00%		555	1,987,233
Rec. Public Assistance												
No Public Assistance	79.90%	3.59%	96	340,995	82.90%	3.83%	90	356,182	88.60%	1.71%	488	1,751,984
Receives public assistance	20.10%	3.59%	27	86,022	17.10%	3.83%	20	73,720	11.40%	1.71%	64	225,266
Total	100.00%		123	427,017	100.00%		110	429,902	100.00%		552	1,977,250

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Table 5: Descriptive Characteristics of Latent QASR Groups (4-5)

	Poor Teacher Relations Only				Strong Global Relations				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
Race/ Ethnicity, %												
White, Non-Hispanic	62.60%	3.41%	511	2,030,575	68.00%	2.89%	2,818	10,854,636	66.10%	2.89%	3,739	14,568,411
Asian, Non-Hispanic	2.00%	0.58%	18	63,754	3.30%	0.72%	181	524,314	3.30%	0.66%	243	733,516
Native American, Non-Hispanic	3.10%	0.72%	27	101,741	1.90%	0.31%	84	301,253	2.20%	0.32%	135	482,365
African American, Non-Hispanic	20.20%	2.89%	276	654,384	15.10%	2.19%	1,121	2,415,114	16.10%	2.26%	1,582	3,554,317
Hispanic, All Races	12.10%	2.01%	97	392,372	11.70%	1.75%	518	1,863,415	12.30%	1.80%	741	2,706,541
Total	100.00%		929	3,242,825	100.00%		4,722	15,958,732	100.00%		6,440	22,045,150
Age, Mean	15.1	0.1			15.5	0.1			15.4	0.1		
Gender												
Male	61.10%	1.98%	534	1,996,481	47.50%	1.01%	2,163	7,644,860	50.80%	0.84%	3,140	11,285,160
Female	38.90%	1.98%	402	1,273,443	52.50%	1.01%	2,599	8,441,197	49.20%	0.84%	3,352	10,936,777
Total	100.00%		936	3,269,924	100.00%		4,762	16,086,057	100.00%		6,492	22,221,937
Rec. Public Assistance												
No Public Assistance	85.60%	1.77%	804	2,766,876	91.10%	0.78%	4,281	14,467,419	89.70%	0.89%	5,759	19,683,455
Receives public assistance	14.40%	1.77%	124	465,543	8.90%	0.78%	422	1,414,759	10.30%	0.89%	657	2,265,309
Total	100.00%		928	3,232,419	100.00%		4,703	15,882,177	100.00%		6,416	21,948,765

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Table 6: Multicollinearity analysis: Relational Class Membership

Independent Variables	Tolerance	VIF
Race	0.97191124	1.0289005
Age	0.99475719	1.0052704
Gender	0.99767545	1.00233
Public Assistance	0.97056195	1.0303309

Findings: Correlates of Social Relationship Quality

For all analyses the Strong Global Relations class was used as the reference group for the dependent variable. For the factor level predictors, White adolescents (race), no public assistance (public assistance), and males (gender), were all set as the reference categories in the model. Table 7 shows the overall results from the multinomial logit analysis of social relationship quality on the sociodemographic predictors.

Strained Social Relations

In the comparison between the strained social relations group and the strong global relations group, the p-values for Asian Americans, African Americans, and Hispanics/Latinos were all statistically significant at the 0.001 level. African Americans were 178% more likely (RRR=2.8), Asian American adolescents were 380% more likely (RRR=4.8), and Hispanic/Latino youth were 243% more likely (RRR=3.4) than White youth to be in the strained social relations group as opposed to the strong global relations group, holding all other variables constant.

Additionally, the variables for public assistance (p=.017), gender (p=0.002), and age (p=.010) all proved to be statistically significant. Youth who receive public assistance were 103% more likely (RRR=2.037) to be in the strained social relations group than the strong global relations, holding all other variables constant. Young women were 38% less likely (RRR=0.62) than adolescent males to be in the strained

social relations group. Finally, for every one year increase in age, an adolescent is 11% more likely to be in the strained social relations group than the global positive relations subgroup (RRR=1.11).

Poor School Relations

In the comparison between the poor school relations group and the strong global relations group, the p-values for Native Americans (p =.016) and African Americans (p=0.004) were statistically significant. African American youth were 98% more likely (RRR=1.98) and Native American youth were 227% more likely (RRR=3.279) than White youth to be in the poor school relations group as opposed to the strong global relations group, holding all other variables constant.

Additionally, the variables for public assistance (p=.017) and gender (p=0.002) proved to be statistically significant. Youth who receive public assistance were 82% more likely (RRR=1.820) to be in the poor school relations group than the strong global relations, holding all other variables constant. Young women were 56% less likely (RRR=0.44) than adolescent males to be in the poor school relations group. Finally, for every one year increase in age, an adolescent is 7.3% less likely to be in the poor school relations group than the global positive relations subgroup, though this finding was not statistically significant (RRR=0.93).

Moderate Global Relations

In the comparison between the moderate global relations group and the strong global relations group, the p-values for Asian American (p =.041) and Latino/Hispanic youth (p=0.034) were statistically significant. Asian American youth were 56% more likely (RRR=1.56) and Hispanic/Latino youth were 38% more likely (RRR=1.38) than

White youth to be in the moderate global relations group as opposed to the strong global relations group, holding all other variables constant.

Additionally, the variables for gender (p=0.002) and age (p=0.004) proved to be statistically significant. Young women had a 25% less likely risk of being in the moderate global relations group than the strong global relations, holding all other variables constant. Finally, for every one year increase in age, an adolescent is 8.7% more likely to be in the moderate global relations group than the global positive relations subgroup.

Poor Teacher Relations

In the comparison between the poor teacher relations group and the strong global relations group, the p-values for Native American (p=0.036) and African American (p=0.002) youth were both statistically significant. Native American youth were 67% more likely (RRR=1.67), African American adolescents were 41% more likely (RRR=1.41), than White youth to be in the poor teacher relations group as opposed to the strong global relations group, holding all other variables constant.

Additionally, the variables for public assistance (p=.001), gender (p=0.00), and age (p=0.00) all proved to be extremely statistically significant. Youth who receive public assistance were 53% more likely (RRR=1.538) to be in the poor teacher relations group than the strong global relations, holding all other variables constant. Young women were 45% less likely (RRR=0.55) than adolescent males to be in the poor teacher relations group. Finally, for every one year increase in age, an adolescent is 10% less likely to be in the poor teacher relations group than the global positive relations subgroup (RRR=0.898).

Table 7: Multinomial Logistic Regression of Latent QASR Groups on Demographic Characteristics

	Strained Social Relations						Poor School Relations					
				95% CI						95% CI		
	RRR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*	*RRR*	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RACE/ETHNICITY												
Asian American	4.826	1.574	2.105	2.036	11.438	***0.000******	0.355	-1.037	0.235	0.096	1.316	0.120
Native American	3.004	1.100	1.879	0.872	10.350	0.081	3.279	1.188	1.590	1.256	8.559	***0.016****
African American	2.781	1.023	0.823	1.549	4.993	***0.001******	1.984	0.685	0.457	1.258	3.131	***0.004****
Hispanic, All Races	3.432	1.233	0.949	1.986	5.929	***0.000******	1.165	0.153	0.341	0.653	2.079	0.602
PUBLIC ASSISTANCE				.						.		
Receives public assistance	2.037	0.711	0.484	1.273	3.259	***0.003****	1.820	0.599	0.453	1.113	2.978	***0.017****
GENDER										.		
Female	0.621	-0.476	0.138	0.400	0.965	***0.035****	0.444	-0.811	0.114	0.267	0.739	***0.002****
AGE	1.110	0.104	0.047	1.021	1.206	***0.014****	0.927	-0.076	0.054	0.827	1.040	0.194
	Moderate Global Relations						**Poor Teacher Relations Only**					
				95% CI						95% CI		
	RRR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*	*RRR*	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RACE/ETHNICITY												
Asian American	1.561	0.445	0.337	1.019	2.391	***0.041****	0.650	-0.431	0.196	0.358	1.179	0.155
Native American	1.111	0.105	0.391	0.554	2.229	0.766	1.673	0.515	0.408	1.033	2.709	***0.036****
African American	0.890	-0.116	0.114	0.692	1.146	0.364	1.410	0.343	0.151	1.141	1.743	***0.002****
Hispanic, All Races	1.380	0.322	0.208	1.025	1.859	***0.034****	1.092	0.088	0.156	0.823	1.448	0.541
PUBLIC ASSISTANCE				.						.		
Receives public assistance	1.334	0.288	0.205	0.984	1.809	0.063	1.538	0.431	0.195	1.197	1.976	***0.001******
GENDER				.						.		
Female	0.748	-0.291	0.089	0.591	0.946	***0.016****	0.550	-0.597	0.050	0.460	0.658	***0.000******
AGE	1.087	0.084	0.031	1.028	1.150	***0.004****	0.898	-0.107	0.021	0.858	0.941	***0.000******

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

<u>Research Question 3</u>: What is the association between race, adolescent relationship quality, and various indicators of social exclusion (suspension, expulsion, juvenile arrest)?
3a: Is race and the quality of an adolescent's social relationship (QASR) associated with out of school suspension?

Descriptive Characteristics of Suspended Adolescents

Table 9 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe. Overall, approximately twenty-eight percent of the sample had received an out-of-school suspension. The poor school relations group had the highest percentage of individuals suspended (72%) followed by poor teacher relations (45%) and moderate global relations (40%). The strong global relations group (21%) had the lowest overall percentage of suspended youth with the strained social relations group having the second fewest (39%). An *F*-test for independence indicated a significant association between QASR and out-of-school suspension, $F(3.77, 493.71) = 66.73$ $p<0.001$.

Looking at the dichotomized indicator for race, forty-seven percent of all African American youth in the sample had experienced a suspension as opposed to just twenty two percent of White students. An *F*-test for independence indicated a significant association between the binary variable for race (Black-White) and out-of-school suspension, $F(1, 131) = 87.1070$ $p<0.001$. Forty six percent of youth with parents receiving public assistance reported receiving an out-of-school suspension while twenty-five percent of youth whose families had not received public assistance reported receiving a suspension. An additional *F*-test for independence indicated a significant association between the variable for poverty and out-of-school suspension, $F(1, 131) =$

64.4899 $p<0.001$. Forty-four percent of youth who have had at least one unexcused school absence reported receiving a suspension and twenty-one percent of youth without an unexcused absence had been suspended. An F-test for independence indicated a significant association between the binary variable for truancy and out-of-school suspension, $F(1, 131) = 151.48$ $p<0.001$. In regards to academic performance, fifty-six percent of youth with a "D" average or lower had experienced an out-of-school suspension. On the other hand, only eight percent of youth with an "A" average experienced an out-of-school suspension. Twenty percent of youth with "B" averages and thirty-seven percent of youth "C" averages received also received a suspension. A second F-test for independence indicated a significant association between the factor variable for grade point average and out-of-school suspension, $F(2.90, 380.02) = 142.11$ $p<0.001$. Finally, on average, suspended youth had a score of 1.9 on both the non-violent and violent delinquency indexes. However, youth who had not been suspended had an average score of 0.7 on both indexes.

Association Between Adolescent Social Relationship Quality and Suspension

In order to test whether there is a statistically significant association between the latent QASR variable and the indicator for out-of-school suspension, a chi-square test was conducted. Results of the Chi-square test for independence indicated that there is a statistically significant association between social relationship quality and out-of-school suspension, χ^2 (4, n = 5,060) = 66.7, p = 0.001.

Model Summary: Quality of Social Relationships, Race, and Suspension.

A dichotomous factor variable indicating whether a youth had experienced an out-of-school suspension was entered into a binary logit model as the dependent variable.

The following items were entered into the model as the independent variables: five-level factor variable classifying relational quality (QASR), a dichotomous indicator of race (Black-White), a dichotomous indicator of poverty status (receipt of public assistance), a dichotomous indicator for truancy (unexcused absences), a four-level factor variable for academic performance (overall grade point average), and two continuous behavioral controls (non-violent delinquency & violent delinquency index scores). In order to investigate whether the quality of a youth's social relations influence racial differences in suspension an interaction term of 'RACE x QASR' was loaded into the model with the other covariates. The overall model was significant, $F(16, N=5{,}060) = 33.71$, $p<0.001$, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level ($F=0.261$) for this model indicating that it is a good fit for these data. Table 8 shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

Table 8: Multicollinearity analysis: Suspension

Independent Variables	Tolerance	VIF
Class	0.887	1.127
Public Assistance	0.959	1.043
Truancy	0.935	1.070
GPA	0.880	1.137
Nonviolent Delinquency Index	0.802	1.247
Violent Delinquency Index	0.749	1.336
Race (Black-White)	0.948	1.055

Table 9: Selected Characteristics for Suspended & Not Suspended Adolescents (11-21), Add Health

	Not Suspended				Suspended				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
RELATIONAL QUALITY												
Strained Social Relations	1.70%	0.22%	82	273,968	2.80%	0.50%	47	174,853	2.00%	0.22%	129	448,821
Poor School Relations	0.70%	0.15%	32	118,908	5.00%	0.57%	77	304,163	1.90%	0.21%	109	423,071
Moderate Global Relations	7.50%	0.49%	330	1,198,870	12.80%	0.84%	225	788,362	9.00%	0.42%	555	1,987,233
Poor Teacher Relations Only	11.10%	0.56%	521	1,783,747	24.10%	1.51%	413	1,479,379	14.70%	0.61%	934	3,263,126
Strong Global Relations	79.00%	0.66%	3,720	12,677,925	55.20%	1.59%	1,039	3,390,119	72.40%	0.75%	4,759	16,068,044
Total	100.00%		4,685	16,053,419	100.00%		1,801	6,136,877	100.00%		6,486	22,190,295
RACE/ETHNICITY												
White, Non-Hispanic	85.70%	2.12%	2,919	11,323,302	66.20%	4.24%	820	3,242,002	80.40%	2.72%	3,739	14,565,304
African American, Non-Hispanic	14.30%	2.12%	947	1,889,433	33.80%	4.24%	634	1,654,103	19.60%	2.72%	1,581	3,543,536
Total	100.00%		3,866	13,212,734	100.00%		1,454	4,896,105	100.00%		5,320	18,108,839
PUBLIC ASSISTANCE												
No Public Assistance	92.40%	0.72%	4,280	14,696,577	82.70%	1.60%	1,477	4,976,973	89.70%	0.88%	5,757	19,673,550
Receives public assistance	7.60%	0.72%	363	1,213,058	17.30%	1.60%	293	1,041,471	10.30%	0.88%	656	2,254,528
Total	100.00%		4,643	15,909,634	100.00%		1,770	6,018,444	100.00%		6,413	21,928,078
TRUANCY												
Not Skipped School	78.40%	1.43%	3,594	12,384,464	55.10%	1.90%	975	3,273,071	72.10%	1.44%	4,569	15,657,535
Skipped School	21.60%	1.43%	1,018	3,407,786	44.90%	1.90%	768	2,665,980	27.90%	1.44%	1,786	6,073,767
Total	100.00%		4,612	15,792,250	100.00%		1,743	5,939,051	100.00%		6,355	21,731,302
GPA (cum.)												
"A "average	20.40%	1.10%	913	3,176,684	4.60%	0.63%	82	270,086	16.10%	0.93%	995	3,446,770
"B" average	45.50%	0.92%	2,092	7,098,465	30.90%	1.48%	539	1,800,079	41.50%	0.87%	2,631	8,898,543
"C" average	28.60%	1.03%	1,302	4,468,197	45.70%	1.34%	791	2,659,808	33.30%	0.95%	2,093	7,128,004
"D or lower" average	5.50%	0.46%	251	862,449	18.70%	1.28%	301	1,090,761	9.10%	0.61%	552	1,953,210
Total	100.00%		4,558	15,605,794	100.00%		1,713	5,820,734	100.00%		6,271	21,426,527

DELINQUENCY INDEXES								
Nonviolent Behavior	0.7	0		1.9	0.1		1	0
Violent Behavior	0.7	0		2	0.1		1	0

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Findings: Correlates of Out of School Suspension

For all analyses youth who indicated reported having no history of school suspension was used as the reference group for the dependent variable. For the factor level predictors, strong global relations (QASR), White adolescents (race), no public assistance (public assistance), no unexcused absences (truancy), and cumulative "A" grade point average (academic performance), were all set as the reference categories in the model. Table 10 shows the overall results from the logistic regression analysis of out-of-school suspension on the sociodemographic, school level, and behavioral predictors.

Quality of Social Relations

The findings of the logistic regression indicate that youth with poor school relations (p <.001), moderate global relations (p =.033), and poor teacher relations (p =.002) had higher odds of being suspended than youth with strong global relations. Holding all other variables in the model constant, the odds of youth with poor school relations (OR=4.557) being suspended is 356% higher than youth with strong global relations. Youth with moderate global relations (OR=1.395) have 39% higher odds of suspension than youth with strong global relations. The odds of out of school suspension increase by 67% when an adolescent only has poor relations with teachers compared to having strong global relations, holding all other variables constant. Finally, the odds of suspension are just 4.3% higher for youth with strained social relations than for youth with strong global relations, which is not statistically significant.

Socio-Demographics: Race & Public Assistance

The findings of the logistic regression indicated that the odds of a Black youth (OR=2.61) being suspended are 161% higher than those of a White youth, holding all

other variables constant (p<0.001). Findings from the model also suggest that youth who live in households with parents who receive public assistance (OR=1.73) have 73% higher odds of being suspended than youth whose parents have not received public assistance (p<0.001).

School Level Indicators: Truancy (Unexcused Absence) & Academic Performance (GPA)

The findings from the model suggest that youth who had one or more unexcused absences from school (OR=2.13) have 113% higher odds of being suspended than youth with no unexcused absences (p<0.001). For the variable indicating academic performance, youth with cumulative "A" averages were set as the reference group. The findings of the logistic regression indicate that youth with overall GPA's lower than an "A" average have increasingly higher odds of receiving an expulsion. Youth with "B" averages (p<0.001), "C" (p<0.001) and "D" (p<0.001) averages in particular were found to be statistically different from the "A" average group. The odds of being suspended increase 128% when a youth has a "B" average (OR=2.29), 141% when a youth has a cumulative "C" average (OR=2.41) and 262% when a youth has a "D" or lower (OR=3.63) cumulative GPA.

Behavioral Indicators: Nonviolent & Violent Delinquency

Finally, the results from the logistic regression indicate that the more delinquent behaviors that a youth exhibits, the more likely they are to receive an out-of-school suspension. For every one point increase on the non-violent delinquency index (OR=1.093), there is a 9.3% increase in the odds of a youth being suspended (p<0.001). Correspondingly, for every one point increase on the violent delinquency index

(OR=1.308), there is a 31% increase in the odds of a youth being suspended, holding all other variables constant ($p<0.001$).

Table 10: Odds of Out of School Suspension by Race and Relational Quality

				95% CI		
	OR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY						
Strained Social Relations	1.043	0.042	0.565	-1.076	1.159	0.941
Poor School Relations	4.557	1.517	0.400	0.725	2.309	**0.000*** **
Moderate Global Relations	1.395	0.333	0.154	0.028	0.637	**0.033***
Poor Teacher Relations Only	1.669	0.512	0.164	0.188	0.837	**0.002****
RACE/ETHNICITY						
African American, Non-Hispanic	2.611	0.960	0.131	0.701	1.219	**0.000*** **
QASR x RACE						
Strained Social Relations x Black	1.343	0.295	0.750	-1.188	1.778	0.695
Poor School Relations x Black	1.455	0.375	0.688	-0.986	1.737	0.586
Moderate Global Relations x Black	1.314	0.273	0.273	-0.267	0.813	0.319
Poor Teacher Relations x Black	1.092	0.088	0.284	-0.473	0.649	0.756
PUBLIC ASSISTANCE						
Receives public assistance	1.732	0.549	0.149	0.254	0.844	**0.000*** **
TRUANCY						
Skipped School	2.128	0.755	0.096	0.565	0.945	**0.000*** **
GPA (cum.)						
"B" average	2.285	0.826	0.173	0.485	1.168	**0.000*** **
"C" average	4.370	1.475	0.176	1.126	1.824	**0.000*** **
"D or lower" average	6.620	1.890	0.210	1.475	2.305	**0.000*** **
DELINQUENCY INDEXES						
Nonviolent Behavior	1.093	0.089	0.023	0.044	0.134	**0.000*** **
Violent Behavior	1.308	0.268	0.029	0.212	0.325	**0.000*** **

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

Marginal Effects: Interaction of Race and Social Relationship Quality (QASR)

In order to aid interpretation of the interaction terms, marginal effects were calculated for the model estimates. A margin is a statistic calculated from a fitted model in which some or all the covariates are fixed at a specific value. Marginal effects show the change in the probability of the dependent variable (Y) occurring with a one unit change in the predictor (X) (Williams, 2012). To find the marginal effects at the means (MEMs), the B coefficients were converted to the probability metric by calculating the adjusted predictions at the means. Table 11 shows the marginal effects for all of the variables in the model. In general, the findings in the table of marginal effects mirror the results of the fitted model. For the interaction term (RACE x QASR), a series of linear combinations were then conducted to calculate the change in probability of experiencing the outcome (suspension, expulsion, & arrest) and how that may differ by race (Buis, 2010). The computed difference between these probabilities is subsequently the marginal effects for that model[6].

Again for the relational quality variable, the strong global relations subgroup is set as the reference group for all comparisons. Poor school relations (p<0.001), moderate global relations (p=0.009), and poor teacher relations (p<0.001) groups were all statistically significant. As such, the probability of suspension for a youth with poor school relations is 34% higher than youth strong global relations. Youth with moderately positive global relations have a 7% higher probability of being suspended and youth with

[6] Stata's 'lincom' feature can be used to compute marginal effects and odds ratios for one group relative to another. Besides an estimate of the linear combination of the parameters, 'lincom' also provides the standard error, a confidence interval, and test that the linear combination between the two parameters is equal to zero. See Buis (2010) for more information.

poor teacher relations have a 10% higher probability of being suspended when compared with the strong global relations group and holding all other variables at their mean values.

Examining the other statistically significant predictors, a Black youth's probability for being suspended is 20% higher than that of a White youth (p<0.001). Youth who live in households that receive public assistance are 10% more likely than youth whose households don't receive public assistance (p=0.001). Youth who have had at least one unexcused school absence have a fourteen percent higher probability of being suspended than the reference group (p<0.001). Youth with "B" averages (+10%), "C" averages (+21%), and "D" averages (+31%) all had higher probabilities of being suspended than youth with an "A" average (p<0.001). Finally, for every one unit increase on the nonviolent delinquency (+2%) and violent delinquency (+5%) there was an increase in the probability of suspension (p<0.001).

Table 11: Marginal Effects of OOS Suspension

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY					
Strained Social Relations	0.015	0.075	-0.132	0.163	0.838
Poor School Relations	0.344	0.083	0.181	0.507	**0.000*** **
Moderate Global Relations	0.066	0.025	0.017	0.115	**0.009** **
Poor Teacher Relations Only	0.095	0.027	0.041	0.148	**0.000*** **
RACE/ETHNICITY					
African American, Non-Hispanic	0.196	0.025	0.147	0.246	**0.000*** **
PUBLIC ASSISTANCE					
Receives public assistance	0.103	0.031	0.042	0.164	**0.001*** **
TRUANCY					
Skipped School	0.139	0.019	0.102	0.176	**0.000*** **
GPA (cum.)					
"B" average	0.095	0.018	0.061	0.130	**0.000*** **
"C" average	0.213	0.022	0.170	0.256	**0.000*** **
"D or lower" average	0.307	0.036	0.237	0.378	**0.000*** **
DELINQUENCY INDEXES					
Nonviolent Behavior	0.015	0.004	0.008	0.022	**0.000*** **

Violent Behavior	0.045	0.005	0.035	0.055	**0.000*** **

Table 12 shows the adjusted marginal effects for the QASR x RACE interaction term. The reference group in this model is the strong global relations class. The adjusted marginal effect is the difference in marginal effect size between Black and White youth. The difference in adjusted marginal effect sizes between Black and White youth were statistically significant for the poor school relations group, moderate global relations group, and the poor teacher relations groups. The probability of an average African American youth with strained social relations being suspended when compared to the referent group is seven percentage points higher than an average White youth with a comparable relational profile. The probability of an average Black youth with poor school relations being suspended is twelve percent higher than that of an average White youth a similar relational profile. The probability of a Black youth with moderately positive global relationships being suspended when compared to the referent group is ten percentage points higher than a comparable White youth. Finally, the probability of Black youth with poor teacher relationships being suspended when compared to the referent group is six percent higher than an average White youth with poor teacher relationships. None of these effects were statistically significant.

Table 12: Adjusted Marginal Effects of OOS Suspension by Race and Relational Quality

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
QASR x RACE					
Strained Social Relations x Black	0.073	0.142	-0.205	0.351	0.606
Poor School Relations x Black	0.127	0.138	-0.144	0.398	0.360
Moderate Global Relations x Black	0.095	0.063	-0.028	0.217	0.130
Poor Teacher Relations x Black	0.062	0.064	-0.064	0.188	0.337

Research Question 3b: Is race and the quality of an adolescent's social relationship (QASR) associated with expulsion from school?

Descriptive Characteristics of Expelled Adolescents

Table 14 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe. Overall, approximately five percent of the sample had received an expulsion. The poor school relations group had the highest percentage of individuals expelled (25%) followed by poor teacher relations (10%) and strained social relations (8%). The strong global relations group (3%) had the lowest overall percentage of expelled youth with the moderate global relations group having the second fewest (7%). An *F*-test for independence indicated a significant association between the variable for latent class and expulsion, $F(3.66, 480.07) = 37.1701$ $p<0.001$.

Looking at the dichotomized indicator for race, ten percent of all African American youth in the sample had experienced an expulsion as opposed to just three percent of White students. An *F*-test for independence indicated a significant association between the binary variable for race (Black-White) and expulsion, $F(1, 131) = 51.6751$ $p<0.001$. Nine percent of youth with parents receiving public assistance reported receiving an expulsion while four percent of youth whose families had not received public assistance reported receiving an expulsion. An additional *F*-test for independence indicated a significant association between the variable for poverty and expulsion, $F(1, 131) = 21.0773$ $p<0.001$. Ten percent of youth who have had at least one unexcused school absence reported receiving an expulsion and just two percent of youth without an unexcused absence had been expelled. An *F*-test for independence indicated a significant

association between the binary variable for truancy and expulsion, $F(1, 131) = 115.8024$ $p<0.001$. In regards to academic performance, thirteen percent of youth with a "D" average or lower had experienced an expulsion. Conversely, only one percent of youth with an "A" average experienced an expulsion. Three percent of youth with "B" averages and six percent of youth with "C" averages also received an expulsion. A second *F*-test for independence indicated a significant association between the factor variable for grade point average and expulsion, $F(2.81, 368.17) = 30.4809$ $p<0.001$. Finally, on average, expelled youth scored approximately a 2.4 on the non-violent delinquency index and a three on the violent delinquency indexes. However, youth who had not been expelled had an average score of one on both indexes.

Association Between Adolescent Social Relationship Quality and Expulsion

In order to test whether there is a statistically significant association between the latent QASR variable and the indicator for school expulsion, a chi-square test was conducted. Results of the Chi-square test for independence indicated that there is a statistically significant association between social relationship quality and school expulsion in a sample of adolescents, χ^2 (4, n = 22193855) = 37.2, $p<0.001$.

Model Summary: Quality of Social Relationships, Race, and Expulsion.

A dichotomous factor variable indicating whether a youth had been expelled from school was entered into a binary logit model as the dependent variable. The following items were entered into the model as the independent variables: five-level factor variable classifying relational quality (QASR), a dichotomous indicator of race (Black-White), a dichotomous indicator of poverty status (receipt of public assistance), a dichotomous indicator for truancy (unexcused absences), a four-level factor variable for academic

performance (overall grade point average), and two continuous behavioral controls (non-violent delinquency & violent delinquency index scores). In order to investigate whether the quality of a youth's social relations influence racial differences in expulsion from school an interaction term of 'RACE x QASR' was loaded into the model with the other covariates. The overall model was significant, $F(16, N=5,060) = 23.75$, $p<0.001$, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level (F=0.240) for this model indicating that it is a good fit for these data. Table 13shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

Table 13: Multicollinearity analysis: Expulsion

Independent Variables	Tolerance	VIF
Class	0.8869	1.1275
Public Assistance	0.9588	1.0429
Truancy	0.9346	1.0700
GPA	0.8796	1.1369
Nonviolent Delinquency Index	0.8018	1.2471
Violent Delinquency Index	0.7665	1.3047
Race (Black-White)	0.9480	1.0548

Table 14: Selected Characteristics for Expelled & Not Expelled Adolescents (11-21), Add Health

	Not Expelled				Expelled				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
RELATIONAL QUALITY												
Strained Social Relations	1.90%	0.21%	118	409,373	3.50%	1.45%	10	36,626	2.00%	0.22%	128	445,999
Poor School Relations	1.50%	0.19%	85	323,601	10.00%	2.11%	25	106,300	1.90%	0.21%	110	429,902
Moderate Global Relations	8.70%	0.43%	515	1,847,627	12.70%	1.92%	38	134,711	8.90%	0.41%	553	1,982,339
Poor Teacher Relations	13.90%	0.59%	851	2,940,396	30.70%	2.90%	84	325,330	14.70%	0.61%	935	3,265,726
Strong Global Relations	73.90%	0.70%	4,616	15,611,712	43.20%	3.02%	142	458,178	72.40%	0.74%	4,758	16,069,890
Total	100.00%		6,185	21,132,709	100.00%		299	1,061,146	100.00%		6,484	22,193,855
RACE/ETHNICITY												
White	81.60%	2.57%	3,631	14,117,045	54.80%	6.45%	107	447,327	80.40%	2.74%	3,738	14,564,372
African American	18.40%	2.57%	1,454	3,182,191	45.20%	6.45%	126	368,246	19.60%	2.74%	1,580	3,550,437
Total	100.00%		5,085	17,299,236	100.00%		233	815,573	100.00%		5,318	18,114,809
PUBLIC ASSISTANCE												
No Public Assistance	90.20%	0.86%	5,526	18,843,766	79.60%	3.09%	231	830,698	89.70%	0.89%	5,757	19,674,463
Receives public assistance	9.80%	0.86%	589	2,040,328	20.40%	3.09%	64	212,517	10.30%	0.89%	653	2,252,844
Total	100.00%		6,115	20,884,094	100.00%		295	1,043,214	100.00%		6,410	21,927,308
TRUANCY												
Not Skipped School	73.70%	1.39%	4,457	15,280,590	38.60%	3.72%	114	384,228	72.10%	1.44%	4,571	15,664,818
Skipped School	26.30%	1.39%	1,617	5,463,129	61.40%	3.72%	169	610,638	27.90%	1.44%	1,786	6,073,767
Total	100.00%		6,074	20,743,719	100.00%		283	994,866	100.00%		6,357	21,738,585
GPA (cum.)												
"A "average	16.60%	0.94%	979	3,399,040	5.00%	1.43%	16	47,730	16.10%	0.93%	995	3,446,770
"B" average	42.20%	0.83%	2,557	8,657,138	25.90%	3.62%	75	245,735	41.50%	0.87%	2,632	8,902,874
"C" average	32.80%	0.95%	1,985	6,728,699	43.20%	3.58%	110	409,089	33.30%	0.95%	2,095	7,137,788
"D or lower" average	8.30%	0.55%	483	1,707,922	25.90%	3.90%	69	245,287	9.10%	0.61%	552	1,953,210
Total	100.00%		6,004	20,492,800	100.00%		270	947,842	100.00%		6,274	21,440,641

DELINQUENCY INDEXES								
Nonviolent Behavior	1	0		2.4	0.2		1	0
Violent Behavior	0.9	0		3	0.2		1	0

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Findings: Correlates of Expulsion From School

For all analyses youth who indicated reported having no history of expulsion from school were used as the reference group for the dependent variable. For the factor level predictors, strong global relations (QASR), White adolescents (race), no public assistance (public assistance), no unexcused absences (truancy), and cumulative "A" grade point average (academic performance), were all set as the reference categories in the model. Table 15shows the overall results from the logistic regression analysis of school expulsion on the sociodemographic, school level, and behavioral predictors.

Quality of Social Relations

The findings of the logistic regression indicate that youth with poor school relations (p =.000) and poor teacher relations only (p =.0013) were the only latent class sub-groups with higher odds of being expelled than youth with strong global relations. Youth in the poor school relations class had 798% higher odds of being expelled (OR=8.99) and individuals in the poor teacher relations group had 133% higher odds (OR=0.695) of being expelled than youth with strong global relations, holding all other variables in the model constant. Compared to youth with strong global relations, youth in the strained social relations group had 90% higher odds (OR=1.91), and youth in the moderate global relations had 70% higher odds (OR=1.70) of being expelled than youth with strong global relations. These two differences were not statistically significant, holding all other variables constant.

Socio-Demographics: Race & Public Assistance

The findings of the logistic regression indicated that the odds of a Black youth (OR=4.00) being expelled are 300% higher than those of a White youth, holding all other

variables constant (p<0.001). Findings from the model suggest that youth who live in households with parents who receive public assistance (OR=1.36) have 36% higher odds of being expelled than youth whose parents have not received public assistance (p<0.001), which is not statistically significant holding all other variables in the model constant.

School Level Indicators: Truancy (Unexcused Absence) & Academic Performance (GPA)

The findings from the model found a statistically significant relationship, suggesting that youth who had one or more unexcused absences from school (OR=2.50) have 150% higher odds of being expelled than youth with no unexcused absences (p<0.001). For the variable indicating academic performance, youth with cumulative "A" averages were set as the reference group. The findings of the logistic regression indicate that youth with overall GPA's lower than an "A" average have increasingly higher odds of receiving an expulsion. Youth with "C" (p=0.023) and "D" (p=0.002) averages in particular were found to have statistically significant differences with the "A" average group. The odds of being expelled increase 141% when a youth has a cumulative "C" average (OR=2.41) and 262% when a youth has a "D" or lower (OR=3.63) cumulative GPA.

Behavioral Indicators: Nonviolent & Violent Delinquency

Finally, the results from the logistic regression indicate that the more violent behaviors that a youth exhibits, the more likely they are to receive an expulsion. For every one point increase on the violent delinquency index (OR=1.30), there is a 30% increase in the odds of a youth being expelled, holding all other variables constant

(p<0.001). However, or every one point increase on the non-violent delinquency index (OR=0.992), there is a 1% decrease in the odds of a youth being expelled (p<0.001), which is not statistically significant.

Table 15: Odds of Expulsion by Race and Relational Quality

				95% CI		
	OR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY						
Strained Social Relations	1.909	0.647	0.978	-1.289	2.582	0.510
Poor School Relations	8.989	2.196	0.421	1.362	3.029	***0.000******
Moderate Global Relations	1.704	0.533	0.357	-0.174	1.240	0.138
Poor Teacher Relations Only	2.336	0.848	0.338	0.180	1.517	***0.013****
RACE/ETHNICITY						
African American, Non-Hispanic	4.002	1.387	0.260	0.872	1.901	***0.000******
QASR x RACE						
Strained Social Relations x Black	0.906	-0.099	1.153	-2.380	2.182	0.932
Poor School Relations x Black	0.284	-1.257	0.729	-2.700	0.185	0.087
Moderate Global Relations x Black	1.004	0.004	0.530	-1.045	1.053	0.994
Poor Teacher Relations x Black	0.695	-0.364	0.374	-1.104	0.376	0.332
PUBLIC ASSISTANCE						
Receives public assistance	1.363	0.310	0.249	-0.183	0.802	0.216
TRUANCY						
Skipped School	2.503	0.917	0.181	0.559	1.276	***0.000******
GPA (cum.)						
"B" average	1.518	0.418	0.392	-0.359	1.194	0.289
"C" average	2.412	0.880	0.383	0.123	1.638	***0.023****
"D or lower" average	3.626	1.288	0.399	0.499	2.077	***0.002****
DELINQUENCY INDEXES						
Nonviolent Behavior	0.992	-0.008	0.040	-0.087	0.070	0.831
Violent Behavior	1.299	0.262	0.063	0.138	0.386	***0.000******

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

Marginal Effects: Interaction of Race and Social Relationship Quality (QASR)

Table 16 shows the marginal effects for all of the variables in the model. For the relational quality variable, the strong global relations subgroup is set as the reference group for all comparisons. The poor school relations (p=0.009) and poor teacher relations (p=0.028) groups were both statistically significant. The probability of expulsion for a youth with poor school relations is 9% higher than youth strong global relations. Youth with poor teacher relations have a 2% higher probability of being expelled when compared with the strong global relations group and holding all other variables at their mean values.

Examining the other statistically significant predictors, a Black youth's probability for being expelled is 39% higher than that of a White youth (p<0.001). Youth who have had at least one unexcused school absence have a fourteen percent higher probability of being expelled than the reference group (p<0.001). Youth with "C" averages had a 2% higher probability (p=0,013) and youth with a "D" average had a 3% higher probability (p=0.006) for expulsion than youth with an "A" average. Finally, for every one unit increase on the violent delinquency index score there was a 0.05% increase in the probability of expulsion (p<0.001).

Table 16: Marginal Effects of Expulsion

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY					
Strained Social Relations	0.013	0.023	-0.031	0.058	0.556
Poor School Relations	0.086	0.033	0.021	0.151	***0.009****
Moderate Global Relations	0.011	0.007	-0.004	0.025	0.147
Poor Teacher Relations Only	0.018	0.008	0.002	0.034	***0.028****
RACE/ETHNICITY					
African American	0.039	0.009	0.021	0.057	***0.000*****
PUBLIC ASSISTANCE					
Receives public assistance	0.007	0.006	-0.005	0.019	0.275
TRUANCY					
Skipped School	0.022	0.006	0.011	0.033	***0.000*****
GPA (cum.)					
"B" average	0.006	0.005	-0.004	0.015	0.255
"C" average	0.015	0.006	0.003	0.027	***0.013****
"D or lower" average	0.028	0.010	0.008	0.047	**0.006****
DELINQUENCY INDEXES					
Nonviolent Behavior	0.000	0.001	-0.002	0.001	0.830
Violent Behavior	0.005	0.001	0.002	0.007	***0.000*****

Table 17 shows the adjusted marginal effects for the QASR x RACE interaction term. The reference group in this model is the strong global relations class. The adjusted marginal effect is the difference in marginal effect size between Black and White youth. The probability of an average African American youth with strained social relations being expelled would only be two percentage points lower than an average White youth with a comparable relational profile when both are compared to their referent groups. The probability of an average Black youth with poor school relations being expelled when compared to the referent group is also just two percent higher than that of an average White youth a similar relational profile. The probability of a Black youth with

moderately positive global relationships being expelled when compared to the referent group is again two percent higher than a comparable White youth. Finally, the probability of Black youth with poor teacher relationships being expelled is just one percent higher than an average White youth with poor teacher relationships when both are compared to their referent groups. None of these effects were statistically significant.

Table 17: Adjusted Marginal Effects of Expulsion by Race and Relational Quality

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
QASR x RACE					
Strained Social Relations x Black	0.021	0.051	-0.079	0.120	0.682
Poor School Relations x Black	0.023	0.069	-0.158	0.112	0.743
Moderate Global Relations x Black	0.022	0.029	-0.034	0.079	0.434
Poor Teacher Relations x Black	0.011	0.015	-0.018	0.041	0.452

Research Question 3c: Is race and the quality of an adolescent's social relationship (QASR) associated with juvenile arrest?

Descriptive Characteristics of Arrested Adolescents

Table 19 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe. Overall, approximately five percent of the sample had been arrested as a youth. The poor school relations group had the highest percentage of individuals arrested (14%) followed by poor teacher relations (9%) and moderate global relations (9%). The strong global relations group (4%) had the lowest overall percentage of arrested youth with the strained social relations group having the second fewest (6%). An *F*-test for independence indicated a significant association between the variable for latent class and arrest, $F(3.60, 472.21) = 10.6606$ $p<0.001$.

Looking at the dichotomized indicator for race, seven percent of all African American youth in the sample had experienced an arrest as opposed to five percent of White students. An *F*-test for independence indicated that there was not a statistically significant association between the binary variable for race (Black-White) and arrest, $F(1, 131) = 2.0076$ $p = 0.16$. Ten percent of youth with parents receiving public assistance reported receiving an arrest while five percent of youth whose families had not received public assistance reported receiving an arrest. An additional *F*-test for independence indicated a significant association between the variable for poverty and arrest, $F(1, 131) = 12.5077$ $p = 0.001$. Finally, on average, arrested youth scored approximately a 2.7 on the non-violent delinquency index and a 2.3 on the violent delinquency indexes. Youth who had not been arrested had an average score of one on both indexes.

Association Between Adolescent Social Relationship Quality and Juvenile Arrest

In order to test whether there is a statistically significant association between the latent QASR variable and the indicator for juvenile arrest, a chi-square test was conducted. Results of the Chi-square test for independence indicated that there is a statistically significant association between social relationship quality and juvenile arrest in a sample of adolescents, χ^2 (4, n = 22080294) = 10.7, $p<0.001$.

Model Summary: Quality of Social Relationships, Race, and Juvenile Arrest.

A dichotomous factor variable indicating whether a youth had experienced an arrest was entered into a binary logit model as the dependent variable. The following items were entered into the model as the independent variables: five-level factor variable classifying relational quality (QASR), a dichotomous indicator of race (Black-White), a dichotomous indicator of poverty status (receipt of public assistance), and two continuous behavioral controls (non-violent delinquency & violent delinquency index scores). In order to investigate whether the quality of a youth's social relations influence racial differences in suspension an interaction term of 'RACE x QASR' was loaded into the model with the other covariates. The overall model was significant, F(12, *N*=3,948) = 8.01, p<0.001, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level (F=0.72) for this model indicating that it is a good fit for these data. Table 18 shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

Table 18: Multicollinearity analysis: Juvenile Arrest

Independent Variables	Tolerance	VIF
Class	0.89362343	1.11904

Public Assistance	0.9554691	1.046606
Nonviolent Delinquency Index	0.79846443	1.252404
Violent Delinquency Index	0.77257391	1.294375
Race (Black-White)	0.95408617	1.048123

Table 19: Selected Characteristics for Arrested & Not Arrested Adolescents (11-21), Add Health

	Not Arrested				Arrested				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
RELATIONAL QUALITY												
Strained Social Relations	1.90%	0.26%	85	398,618	2.30%	0.96%	6	26,845	1.90%	0.26%	91	425,464
Poor School Relations	1.80%	0.24%	75	386,287	5.30%	1.62%	11	61,993	2.00%	0.23%	86	448,280
Moderate Global Relations	8.20%	0.52%	360	1,715,428	14.60%	2.81%	30	170,523	8.50%	0.51%	390	1,885,951
Poor Teacher Relations	14.10%	0.66%	646	2,947,986	24.30%	2.74%	53	284,058	14.60%	0.66%	699	3,232,044
Strong Global Relations	73.90%	0.86%	3,477	15,462,571	53.50%	3.98%	125	625,985	72.90%	0.83%	3,602	16,088,556
Total	100.00%		4,643	20,910,890	100.00%		225	1,169,404	100.00%		4,868	22,080,294
RACE/ETHNICITY												
White	80.80%	2.77%	2,729	13,949,331	75.50%	4.72%	122	720,874	80.50%	2.76%	2,851	14,670,204
African American	19.20%	2.77%	1,113	3,311,822	24.50%	4.72%	61	233,694	19.50%	2.76%	1,174	3,545,516
Total	100.00%		3,842	17,261,152	100.00%		183	954,568	100.00%		4,025	18,215,720
PUBLIC ASSISTANCE												
No Public Assistance	91.10%	0.82%	4,177	18,842,326	82.20%	3.75%	188	959,995	90.70%	0.89%	4,365	19,802,320
Receives public assistance	8.90%	0.82%	416	1,830,473	17.80%	3.75%	36	207,225	9.30%	0.89%	452	2,037,698
Total	100.00%		4,593	20,672,798	100.00%		224	1,167,220	100.00%		4,817	21,840,018
DELINQUENCY INDEXES												
Nonviolent Behavior	0.9	0			2.7	0.3			1	0		
Violent Behavior	0.9	0			2.3	0.2			1	0		

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count;
Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Findings: Correlates of Juvenile Arrest

For all analyses youth who indicated reported having no history of arrested from school were used as the reference group for the dependent variable. For the factor level predictors, strong global relations (QASR), White adolescents (race), and no public assistance (public assistance), were all set as the reference categories in the model. Table 20 shows the overall results from the logistic regression analysis of juvenile arrest on the sociodemographic and behavioral predictors.

Quality of Social Relations

The findings of the logistic regression indicate that youth with poor school relations (p=.007) and poor teacher relations (p=.001) were the only latent class sub-groups with higher odds of being arrested than youth with strong global relations. Youth in the poor school relations class had 209% higher odds of being arrested (OR=3.1) than youth with strong global relations while youth poor relations with teachers alone had 116% higher odds of being arrested (OR=2.16), holding all other variables in the model constant. Compared to youth with strong global relations, youth in the strained social relations group had 74% lower odds (OR=0.261) and youth in the moderate global relations had 74% higher odds (OR=1.74) of being arrested. Both of these differences were not statistically significant, holding all other variables constant.

Socio-Demographics: Race & Public Assistance

The findings of the logistic regression indicated that the odds of a Black youth (OR=1.774) being arrested are 77% higher than those of a White youth, holding all other variables constant (p=0.025). Findings from the model also suggest that youth who live in households with parents who receive public assistance (OR=2.06) have 106% higher

odds of being arrested than youth whose parents have not received public assistance, holding all other variables constant (p=0.017)

Behavioral Indicators: Nonviolent & Violent Delinquency

Finally, the results from the logistic regression indicate that the more violent and nonviolent behaviors that a youth exhibits, the more likely they are to receive an arrest. For every one point increase on the violent delinquency index (OR=1.18), there is an 18% increase in the odds of a youth being arrested, holding all other variables constant (p=0.001). Additionally, for every one point increase on the non-violent delinquency index (OR=1.177), there is an 18% increase in the odds of a youth being arrested (p=0.005), holding all other variables constant (p=0.005).

Table 20: Odds of Juvenile Arrest by Race and Relational Quality

				95% CI		
	OR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY						
Strained Social Relations	0.261	-1.343	1.382	-4.078	1.391	0.333
Poor School Relations	3.094	1.129	0.412	0.314	1.945	***0.007****
Moderate Global Relations	1.739	0.553	0.355	-0.149	1.255	0.122
Poor Teacher Relations Only	2.162	0.771	0.220	0.336	1.206	***0.001****
RACE/ETHNICITY						
African American, Non-Hispanic	1.774	0.573	0.253	0.073	1.073	***0.025****
QASR x RACE						
Strained Social Relations x Black	1.326	0.282	1.785	-3.250	3.814	0.875
Poor School Relations x Black	0.019	-3.966	1.212	-6.363	-1.568	***0.001****
Moderate Global Relations x Black	0.750	-0.288	0.590	-1.456	0.879	0.626
Poor Teacher Relations x Black	0.296	-1.218	0.482	-2.172	-0.265	***0.013****
PUBLIC ASSISTANCE						
Receives public assistance	2.060	0.723	0.299	0.132	1.314	***0.017****
DELINQUENCY INDEXES						
Nonviolent Behavior	1.175	0.161	0.045	0.072	0.251	**0.001***
Violent Behavior	1.177	0.163	0.057	0.050	0.276	**0.005**

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

Marginal Effects: Interaction of Race and Social Relationship Quality (QASR)

Table 21shows the marginal effects for all of the variables in the model. For the relational quality variable, the strong global relations subgroup is set as the reference group for all comparisons. The marginal effects for the strained social relations (p=0.032) and poor teacher relations (p=0.019) groups were both statistically significant. As such, the probability of arrest for a youth with strained social relations is 3% lower than youth strong global relations. Conversely, youth with poor teacher relations have a 3% higher probability of being arrested when compared with the strong global relations group and holding all other variables at their mean values.

Examining the other statistically significant predictors only the marginal effects for the indicators of violent and nonviolent delinquency were statistically significant. For every one unit increase on the nonviolent delinquency there was 0.06% increase in the probability of arrest (p=0.001). Finally, for every one unit increase on the violent delinquency index there was a corresponding 0.06% increase in the probability of arrest, holding all other variables at their means (p=0.003).

Table 21: Marginal Effects of Juvenile Arrest

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY					
Strained Social Relations	-0.026	0.012	-0.051	-0.002	**0.032***
Poor School Relations	0.015	0.020	-0.024	0.055	0.443
Moderate Global Relations	0.022	0.016	-0.010	0.054	0.170
Poor Teacher Relations Only	0.025	0.010	0.004	0.045	**0.019***
RACE/ETHNICITY					
African American	0.013	0.009	-0.006	0.031	0.183
PUBLIC ASSISTANCE					
Receives public assistance	0.038	0.020	-0.002	0.077	*0.062*
DELINQUENCY INDEXES					
Nonviolent Behavior	0.006	0.002	0.003	0.010	***0.001****
Violent Behavior	0.006	0.002	0.002	0.011	***0.003***

Table 22 shows the adjusted marginal effects for the QASR x RACE interaction term. The reference group in this model is the strong global relations class. The adjusted marginal effect is the difference in marginal effect size between Black and White youth. The difference in adjusted marginal effect sizes between Black and White youth were statistically significant for the poor school relations group and poor teacher relations groups. The probability of an average Black youth with poor school relations being arrested when compared to the referent group is twelve percentage points lower than that of an average White youth with a similar relational profile (p=0.003). Correspondingly, the probability of Black youth with poor teacher relationships being arrested is five percent lower than an average White youth with poor teacher relationships (p=0.009) when both are compared to their referent groups. Conversely, the probability of an average African American youth with strained social relations being arrested is one percentage point lower than an average White youth with a comparable relational profile (p=0.66) when both are compared to their referent groups. Finally, the probability of a Black youth with moderately positive global relationships being arrested is 0.07% lower than a comparable White youth (p=0.846) when both are compared to their referent groups.

Table 22: Adjusted Marginal Effects of Juvenile Arrest by Race and Relational Quality

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
QASR x RACE					
Strained Social Relations x Black	-0.012	0.028	-0.068	0.043	0.662
Poor School Relations x Black	-0.116	0.040	-0.194	-0.039	***0.003***
Moderate Global Relations x Black	-0.007	0.036	-0.078	0.064	0.846
Poor Teacher Relations x Black	-0.056	0.021	-0.098	-0.014	***0.009***

<u>Research Question 4</u>: What is the association between the quality of social relationships and various indicators of social exclusion (suspension, expulsion, juvenile arrest) in a sample of African American adolescents?
4a: Is the quality of an adolescent's social relationship (QASR) associated with out of school suspension in a sample African American adolescents?

Descriptive Characteristics of Suspended African American Adolescents

Table 24 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe. Overall, approximately forty-seven percent of the sample of African American youth had received an out-of-school suspension. The poor school relations group had the highest percentage of individuals suspended (86%) followed by poor teacher relations (63%) and strained social relations (62%). The strong global relations group (38%) had the lowest overall percentage of suspended youth with the moderate global relations group having the second fewest (60%). An *F*-test for independence indicated a significant association between the variable for latent class and out-of-school suspension, $F(3.31, 433.01) = 15.8858$ $p<0.001$.

Sixty-three percent of African American youth with parents receiving public assistance reported receiving an out-of-school suspension while forty-three percent of youth whose families had not received public assistance reported receiving a suspension. An additional *F*-test for independence indicated a significant association between the variable for poverty and out-of-school suspension, $F(1, 131) = 30.5330$ $p<0.001$. Sixty-seven percent of youth who have had at least one unexcused school absence reported receiving a suspension and thirty-nine percent of youth without an unexcused absence had been suspended. An *F*-test for independence indicated a significant association between the binary variable for truancy and out-of-school suspension, $F(1, 131) =$

51.5345 *p<0.001*. In regards to academic performance, sixty-six percent of youth with a "D" average or lower had experienced an out-of-school suspension. On the other hand, eighteen percent of youth with an "A" average experienced an out-of-school suspension. Thirty-seven percent of youth with "B" averages and fifty-six percent of youth "C" averages received also received a suspension. A second *F*-test for independence indicated a significant association between the factor variable for grade point average and out-of-school suspension, $F(2.03, 266.20) = 19.6574$ *p<0.001*.

Model Summary: Quality of Social Relationships & Suspension of Black Youth

A dichotomous factor variable indicating whether a sub-population of African American youth had experienced an out-of-school suspension was entered into a binary logit model as the dependent variable. The following items were entered into the model as the independent variables: five-level factor variable classifying relational quality (QASR), a dichotomous indicator of poverty status (receipt of public assistance), a dichotomous indicator for truancy (unexcused absences), and a four-level factor variable for academic performance (overall grade point average). The overall model was significant, F(9, *N*=1,494) = 12.82, p<0.001, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level (F=0.28) for this model indicating that it is a good fit for these data[7]. Table 23 shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

[7] Similar to the above racial difference models, the index scores for violent and nonviolent delinquency were originally included in the full model. The H-L goodness of fit test indicated that this full model was not a good fit for the data. As a result, the violent and nonviolent delinquency variables were removed and the model fit was substantially improved

Table 23: Multicollinearity analysis: OOS Suspension

Independent Variables	Tolerance	VIF
Class	0.96682551	1.034313
Public Assistance	0.98673503	1.013443
Truancy	0.9439424	1.059387
GPA	0.92403731	1.082207

Table 24: Selected Characteristics for Suspended & Not Suspended African American Adolescents (11-21), Add Health

	Not Suspended				Suspended				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
RELATIONAL QUALITY												
Strained Social Relations	2.30%	0.55%	21	44,264	4.30%	1.12%	20	70,714	3.20%	0.61%	41	114,978
Poor School Relations	0.80%	0.29%	8	14,962	5.80%	1.17%	25	95,238	3.10%	0.59%	33	110,200
Moderate Global Relations	5.50%	0.96%	48	103,039	9.50%	1.09%	63	156,602	7.30%	0.75%	111	259,641
Poor Teacher Relations Only	13.00%	1.45%	124	244,896	24.80%	2.70%	152	409,488	18.50%	1.41%	276	654,384
Strong Global Relations	78.50%	1.49%	746	1,482,272	55.70%	2.70%	374	922,061	67.90%	1.64%	1,120	2,404,334
Total	100.00%		947	1,889,433	100.00%		634	1,654,103	100.00%		1,581	3,543,536
PUBLIC ASSISTANCE												
No Public Assistance	87.30%	1.37%	836	1,623,766	75.50%	2.20%	497	1,221,373	81.80%	1.57%	1,333	2,845,139
Receives public assistance	12.70%	1.37%	97	236,071	24.50%	2.20%	125	395,579	18.20%	1.57%	222	631,651
Total	100.00%		933	1,859,837	100.00%		622	1,616,952	100.00%		1,555	3,476,789
TRUANCY												
Not Skipped School	82.70%	2.27%	767	1,537,746	60.00%	3.54%	384	965,721	72.20%	2.42%	1,151	2,503,467
Skipped School	17.30%	2.27%	167	320,757	40.00%	3.54%	235	644,137	27.80%	2.42%	402	964,894
Total	100.00%		934	1,858,502	100.00%		619	1,609,858	100.00%		1,553	3,468,360
GPA (cum.)												
"A "average	9.90%	1.46%	119	177,049	2.50%	0.83%	18	39,934	6.40%	0.89%	137	216,984
"B" average	47.60%	2.63%	440	852,128	31.00%	2.69%	194	490,742	39.80%	2.00%	634	1,342,870
"C" average	35.50%	2.68%	293	635,564	50.90%	2.31%	303	806,049	42.70%	1.74%	596	1,441,613
"D or lower" average	7.10%	1.15%	58	126,601	15.70%	2.24%	95	248,129	11.10%	1.51%	153	374,730
Total	100.00%		910	1,791,342	100.00%		610	1,584,855	100.00%		1,520	3,376,197

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Association Between Adolescent Social Relationship Quality and Suspension

To test whether there is a statistically significant association between the latent QASR variable and the indicator for out-of-school suspension in just a sub-sample of African American adolescents, a chi-square test was conducted. Results of the Chi-square test for independence indicated that there is a statistically significant association between social relationship quality and out-of-school suspension in a sample of adolescents, $\chi 2$ (4, n = 3543536) = 15.9, $p<0.001$.

Findings: Correlates of Out of School Suspension of African American Youth

For all analyses African American youth who reported having no history of school suspension were used as the reference group for the dependent variable. For the factor level predictors, strong global relations (QASR), no public assistance (public assistance), no unexcused absences (truancy), and cumulative "A" grade point average (academic performance), were all set as the reference categories in the model. Table 25shows the overall results from the logistic regression analysis of out-of-school suspension on the sociodemographic and school level predictors.

Quality of Social Relations

The findings of the logistic regression indicate that youth with poor school relations (p=.000), moderate global relations (p =.000), and poor teacher relations (p =.001) had higher odds of being suspended than youth with strong global relations. Holding all other variables in the model constant, the odds of youth with poor school relations (OR=7.25) being suspended is 625% higher than youth with strong global relations. Youth with moderate global relations (OR=2.01) have 101% higher odds of suspension than youth with strong global relations. The odds of out of school suspension

increase by 125% when an adolescent only has poor relations with teachers (OR=2.25) compared to having strong global relations, holding all other variables constant. Finally, the odds of suspension are 119% higher for youth with strained social relations than for youth with strong global relations, which is not statistically significant.

Socio-Demographics: Public Assistance

The findings of the logistic regression indicated that youth who live in households with parents who receive public assistance (OR=2.11) have 111% higher odds of being suspended than youth whose parents have not received public assistance ($p<0.001$).

School Level Indicators: Truancy (Unexcused Absence) & Academic Performance (GPA)

The findings from the model suggest that youth who had one or more unexcused absences from school (OR=2.65) have 165% higher odds of being suspended than youth with no unexcused absences ($p<0.001$). For the variable indicating academic performance, youth with cumulative "A" averages were set as the reference group. The findings of the logistic regression indicate that youth with overall GPA's lower than an "A" average have increasingly higher odds of receiving an expulsion. Youth with "B" averages ($p=0.038$), "C" ($p=0.001$) and "D" ($p<0.001$) averages were found to have statistically significant differences with the "A" average group. The odds of being suspended increase 109% when a youth has a "B" average (OR=2.09), 302% when a youth has a cumulative "C" average (OR=4.02) and 358% when a youth has a "D" or lower (OR=4.58) cumulative GPA.

Table 25: Odds of Out of School Suspension for African American Adolescents by Relational Quality

				95% CI		
	OR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY						
Strained Social Relations	2.198	0.787	0.401	-0.006	1.581	0.052
Poor School Relations	7.249	1.981	0.514	0.964	2.998	***0.000******
Moderate Global Relations	2.008	0.697	0.192	0.318	1.077	***0.000******
Poor Teacher Relations Only	2.248	0.810	0.239	0.337	1.283	***0.001******
PUBLIC ASSISTANCE						
Receives public assistance	2.109	0.746	0.176	0.397	1.095	***0.000******
TRUANCY						
Skipped School	2.648	0.974	0.155	0.668	1.279	***0.000******
GPA (cum.)						
"B" average	2.092	0.738	0.351	0.043	1.433	**0.038***
"C" average	4.016	1.390	0.409	0.581	2.199	***0.001******
"D or lower" average	4.584	1.523	0.369	0.794	2.252	***0.000******

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

Marginal Effects: Social Relationship Quality (QASR) and Suspension of Black Youth

In order to aid interpretation, marginal effects were calculated for the model estimates. In general, the findings in the table of marginal effects mirror the results of the fitted model (table 26). For the relational quality variable, the strong global relations subgroup was set as the reference group for all comparisons. Strained social groups (p=0.045), poor school relations (p<0.001), moderate global relations (p<0.001), and poor teacher relations (p=0.001) groups were all statistically significant. The probability of suspension for a Black youth with strained social relation is 19% higher than youth from the reference group (strong global relations), holding all other variables at their means. African American youth with poor school relations have a 43% higher probability of being suspend than Black youth with strong global relations. Black youth with moderately positive global relations have a 17% higher probability of being suspended and youth with poor teacher relations have a 20% higher probability of being suspended when compared with the strong global relations group and holding all other variables at their mean values.

Examining the other statistically significant predictors, Black youth who live in households that receive public assistance are 18% more likely to be suspended than youth whose households don't receive public assistance (p<0.001). Youth who have had at least one unexcused school absence have 24% higher probability of being suspended than the reference group (p<0.001). Youth with "B" averages (+16%), "C" averages (+32%), and "D" averages (+35%) all had higher probabilities of being suspended than youth with an "A" average (p<0.001).

Table 26: Marginal Effects of OOS Suspension for African American Adolescents by Relational Quality

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY					
Strained Social Relations	0.194	0.097	0.004	0.384	**0.045***
Poor School Relations	0.430	0.074	0.285	0.575	***0.000****
Moderate Global Relations	0.172	0.047	0.080	0.265	***0.000****
Poor Teacher Relations Only	0.200	0.057	0.087	0.312	***0.001****
PUBLIC ASSISTANCE					
Receives public assistance	0.184	0.042	0.102	0.266	***0.000****
TRUANCY					
Skipped School	0.238	0.036	0.168	0.309	***0.000****
GPA (cum.)					
"B" average	0.156	0.066	0.027	0.285	***0.018****
"C" average	0.317	0.081	0.158	0.475	***0.000****
"D or lower" average	0.349	0.073	0.206	0.492	***0.000****

Research Question 4b: Is the quality of an adolescent's social relationship (QASR) associated with expulsion from school in a sample African American adolescents?

Descriptive Characteristics of Expelled African American Adolescents

Table 28 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe. Overall, approximately ten percent of the sample of African American youth had received an expulsion. The poor school relations group had the highest percentage of individuals expelled (27%) followed by strained social relations (21%), moderate global relations (16%), and poor teacher relations (16%). The strong global relations group (7%) had the lowest overall percentage of expelled youth. An *F*-test for independence indicated a significant association between the variable for latent class and expulsion, $F(2.73, 357.38) = 5.6975$ $p<0.001$.

Fifteen percent of African American youth with parents receiving public assistance reported receiving an expulsion while ten percent of youth whose families had not received public assistance reported receiving an expulsion. An additional *F*-test for independence indicated a significant association between the variable for poverty and expulsion, $F(1, 131) = 4.1178$ $p<0.001$. Twenty-one percent of youth who have had at least one unexcused school absence reported receiving an expulsion and just six percent of youth without an unexcused absence had been expelled. An *F*-test for independence indicated a significant association between the binary variable for truancy and expulsion, $F(1, 131) = 56.7503$ $p<0.001$. In regards to academic performance, twenty-one percent of Black youth with a "D" average or lower had experienced an expulsion. Conversely, only two percent of youth with an "A" average experienced an expulsion. Eight percent

of youth with "B" averages and ten percent of youth with "C" averages also received an expulsion. A second *F*-test for independence indicated a significant association between the factor variable for grade point average and expulsion, $F(2.55, 334.58) = 6.7837$ $p<0.001$.

Model Summary: Quality of Social Relationships & Expulsion of African American Youth

A dichotomous factor variable indicating whether a sub-population of African American youth had been expelled from school was entered into a binary logit model as the dependent variable. The following items were entered into the model as the independent variables: five-level factor variable classifying relational quality (QASR), a dichotomous indicator of poverty status (receipt of public assistance), a dichotomous indicator for truancy (unexcused absences), and a four-level factor variable for academic performance (overall grade point average). The overall model was significant, $F(9, N=1{,}494) = 8.26$, $p<0.001$, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level ($F=0.69$) for this model indicating that it is a good fit for these data[8]. Table 27 shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

Table 27: Multicollinearity analysis: OOS Suspension

Independent Variables	Tolerance	VIF
Class	0.97392684	1.026771
Public Assistance	0.99149863	1.008574
Truancy	0.94575258	1.057359
GPA	0.92936456	1.076004

[8] Similar to the above racial difference models, the index scores for violent and nonviolent delinquency were originally included in the full model. The H-L goodness of fit test indicated that this full model was not a good fit for the data. As a result, the violent and nonviolent delinquency variables were removed and the model fit was substantially improved

Table 28: Selected Characteristics for Expelled & Not Expelled African American Adolescents (11-21), Add Health

	Not Expelled				Expelled				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
RELATIONAL QUALITY												
Strained Social Relations	2.80%	0.60%	34	88,684	6.40%	3.67%	6	23,472	3.20%	0.60%	40	112,156
Poor School Relations	2.50%	0.60%	25	80,508	8.10%	2.73%	8	29,692	3.10%	0.58%	33	110,200
Moderate Global Relations	6.80%	0.75%	99	216,261	11.50%	3.33%	11	42,322	7.30%	0.75%	110	258,583
Poor Teacher Relations Only	17.30%	1.37%	242	550,244	28.30%	4.09%	34	104,140	18.40%	1.40%	276	654,384
Strong Global Relations	70.60%	1.48%	1,054	2,246,494	45.80%	4.49%	67	168,620	68.00%	1.61%	1,121	2,415,114
Total	100.00%		1,454	3,182,191	100.00%		126	368,246	100.00%		1,580	3,550,437
PUBLIC ASSISTANCE												
No Public Assistance	82.40%	1.82%	1,240	2,571,011	74.00%	3.73%	91	270,248	81.60%	1.70%	1,331	2,841,259
Receives public assistance	17.60%	1.82%	189	547,665	26.00%	3.73%	34	94,766	18.40%	1.70%	223	642,432
Total	100.00%		1,429	3,118,676	100.00%		125	365,015	100.00%		1,554	3,483,691
TRUANCY												
Not Skipped School	75.60%	2.15%	1,098	2,356,115	41.70%	6.11%	53	147,351	72.20%	2.42%	1,151	2,503,467
Skipped School	24.40%	2.15%	333	758,950	58.30%	6.11%	69	205,944	27.80%	2.42%	402	964,894
Total	100.00%		1,431	3,115,065	100.00%		122	353,295	100.00%		1,553	3,468,360
GPA (cum.)												
"A "average	7.00%	0.89%	135	212,561	1.30%	0.96%	2	4,422	6.40%	0.89%	137	216,984
"B" average	40.70%	1.89%	593	1,234,918	31.70%	5.60%	41	107,952	39.80%	2.00%	634	1,342,870
"C" average	42.50%	1.74%	548	1,291,206	44.20%	5.14%	48	150,408	42.70%	1.74%	596	1,441,613
"D or lower" average	9.80%	1.17%	127	297,287	22.80%	6.41%	26	77,443	11.10%	1.51%	153	374,730
Total	100.00%		1,403	3,035,971	100.00%		117	340,226	100.00%		1,520	3,376,197

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Association Between Adolescent Social Relationship Quality and Expulsion

In order to test whether there is a statistically significant association between the latent QASR variable and the indicator for school expulsion in a sub-sample of just African American Adolescents, a chi-square test was conducted. Results of the Chi-square test for independence indicated that there is a statistically significant association between social relationship quality and school expulsion in a sample of African American adolescents, $\chi 2$ (4, n = 3550437) = 5.7, p = 0.0012.

Findings: Correlates of Expulsion From School & African American Youth

For all analyses African American youth who reported having no history of expulsion from school were used as the reference group for the dependent variable. For the factor level predictors, strong global relations (QASR), no public assistance (public assistance), no unexcused absences (truancy), and cumulative "A" grade point average (academic performance), were all set as the reference categories in the model. Table 29 shows the overall results from the logistic regression analysis of expulsion from school on the sociodemographic and school level predictors.

Quality of Social Relations

The findings of the logistic regression indicate that African American youth with poor school relations (p =.04) and poor relationships with their teachers both had higher odds of being expelled than youth with strong global relations. Youth in the poor school relations class had 233% higher odds of being expelled than youth with strong global relations (OR=3.33), holding all other variables in the model constant ($p<0.001$). Additionally, Black youth with poor relationships with their teachers only had 132% higher odds of being expelled than Black youth with strong global relations (OR=2.32).

Compared to African American youth with strong global relations, Black youth in the strained social relations group had 233% higher odds (OR=3.33), and youth in the moderate global relations had 93% higher odds (OR=1.93) of being expelled. Both of these results were not statistically significant, holding all other variables constant.

Socio-Demographics: Race & Public Assistance

The findings of the logistic regression indicated that Black youth who live in households with parents who receive public assistance (OR=1.50) have 50% higher odds of being expelled than youth whose parents have not received public assistance (p=0.09), which is not statistically significant holding all other variables in the model constant.

School Level Indicators: Truancy (Unexcused Absence) & Academic Performance (GPA)

The findings from the model suggest that African American youth who had one or more unexcused absences from school (OR=3.44) have 244% higher odds of being expelled than Black youth with no unexcused absences (p<0.001). For the variable indicating academic performance, youth with cumulative "A" averages were set as the reference group. The findings of the logistic regression indicate that youth with "D or lower" averages (p=0.023) had 397% higher odds of expulsion than African American youth with cumulative "A" grape point averages (OR=4.97).

Table 29: Odds of Expulsion for African American Adolescents by Relational Quality

				95% CI		
	OR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY						
Strained Social Relations	3.330	1.203	0.645	-0.072	2.478	0.064
Poor School Relations	3.325	1.202	0.575	0.064	2.339	**0.039***
Moderate Global Relations	1.929	0.657	0.377	-0.090	1.403	0.084
Poor Teacher Relations Only	2.322	0.842	0.212	0.423	1.262	***0.000****
PUBLIC ASSISTANCE						
Receives public assistance	1.501	0.406	0.238	-0.065	0.878	0.091
TRUANCY						
Skipped School	3.436	1.234	0.201	0.836	1.633	***0.000****
GPA (cum.)						
"B" average	2.998	1.098	0.768	-0.422	2.618	0.155
"C" average	3.137	1.143	0.681	-0.204	2.490	0.095
"D or lower" average	4.970	1.603	0.695	0.228	2.979	**0.023***

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

Marginal Effects: Social Relationship Quality (QASR) & Expulsion of Black Youth

Table 30 shows the marginal effects for all of the variables in the model. For the relational quality variable, only the marginal effects for the poor teacher relations (p=0.02) group was statistically significant. The probability of expulsion for a youth with just poor relationships with teachers is 7% higher than that of Black youth strong global relations, holding all other variables at their means. Examining the other statistically significant predictors, a Black youth who has had at least one unexcused school absence has an 11% higher probability of being expelled than the reference group (p<0.001). Finally, Black youth with "C" averages had a 5% higher probability (p=0.03) and youth with a "D" average had a 9% higher probability (p=0.004) for expulsion than Black youth with a cumulative "A" average.

Table 30: Marginal Effects of Expulsion for African American Adolescents by Relational Quality

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY					
Strained Social Relations	0.114409	0.083234	-0.04873	0.277544	0.169
Poor School Relations	0.114203	0.071981	-0.02688	0.255284	0.113
Moderate Global Relations	0.049206	0.032121	-0.01375	0.112161	0.126
Poor Teacher Relations Only	0.068505	0.02947	0.010746	0.126264	**0.02***
PUBLIC ASSISTANCE					
Receives public assistance	0.032256	0.019843	-0.00664	0.071148	0.104
TRUANCY					
Skipped School	0.112408	0.018379	0.076386	0.148429	***0.000****
GPA (cum.)					
"B" average	0.049617	0.029109	-0.00744	0.106668	0.088
"C" average	0.052874	0.024522	0.004811	0.100937	**0.031***
"D or lower" average	0.093868	0.033018	0.029153	0.158582	***0.004****

Research Question 4c: Is the quality of an adolescent's social relationship (QASR) associated with juvenile arrest in a sample African American adolescents?

Descriptive Characteristics of Arrested African American Adolescents

Table 32 presents all variables in the analysis as well as measures of central tendency, the standard error of the rate, and the weighted and un-weighted observations for the estimates and total universe. Overall, approximately seven percent of the sample of African American adolescents had been arrested as a youth. The moderate global relations group had the highest percentage of individuals arrested (11%) followed by strained social relations (9%), poor teacher relations only (7%) and strong global relations (7%). Surprisingly, the poor school relations group (1%) had the lowest overall percentage of arrested youth. An *F*-test for independence indicated a significant association between the variable for latent class and arrest, $F(3.42, 448.36) = 1.0506$ $p<0.001$.

Fifteen percent of African American youth with parents receiving public assistance reported receiving an arrest while five percent of youth whose families had not received public assistance reported receiving an arrest. An additional *F*-test for independence indicated a significant association between the variable for poverty and arrest, $F(1, 131) = 8.5440$ $p = 0.001$. Finally, on average, African American youth who had been arrested scored approximately a 1.7 on the non-violent delinquency index and a 1.9 on the violent delinquency indexes. Youth who had not been arrested had an average score of 0.8 on the nonviolent delinquency index and 1.2 on the violent delinquency index.

Model Summary: Quality of Social Relationships & Juvenile Arrest of Black Adolescents

A dichotomous factor variable indicating whether an African American youth had experienced an arrest was entered into a binary logit model as the dependent variable. The following items were entered into the model as the independent variables: five-level factor variable classifying relational quality (QASR), a dichotomous indicator of race (Black-White), a dichotomous indicator of poverty status (receipt of public assistance), and two continuous behavioral controls (non-violent delinquency & violent delinquency index scores). The overall model was significant, F(7, *N*=1,142) = 3.71, p=0.001, and the F-statistic for the Hosmer-Lemeshow goodness-of-fit test is not significant at the 5% level (F=0.27) for this model indicating that it is a good fit for these data. Table 31 shows the tolerance and variance inflation factors for each predictor in the model which indicate that there are no problems with collinearity with the various covariates in the model.

Table 31: Multicollinearity analysis: Juvenile Arrest (African American Adolescents)

Independent Variables	Tolerance	VIF
Class	0.93442319	1.070179
Public Assistance	0.98168736	1.018654
Nonviolent Delinquency Index	0.75554692	1.323545
Violent Delinquency Index	0.74476641	1.342703

Table 32: Selected Characteristics for Arrested & Not Arrested African American Adolescents (11-21), Add Health

	Not Arrested				Arrested				Total Universe			
	Estimates				Estimates				Estimates			
	Rate	SE	Obs	Count	Rate	SE	Obs	Count	Rate	SE	Obs	Count
RELATIONAL QUALITY												
Strained Social Relations	3.10%	0.72%	29	103,578	4.60%	2.92%	3	10,817	3.20%	0.70%	32	114,395
Poor School Relations	3.50%	0.74%	26	114,162	0.50%	0.49%	1	1,111	3.30%	0.67%	27	115,273
Moderate Global Relations	6.40%	0.87%	67	213,161	10.80%	4.23%	6	25,304	6.70%	0.89%	73	238,465
Poor Teacher Relations Only	18.20%	1.56%	193	600,882	14.70%	4.92%	10	34,246	17.90%	1.54%	203	635,128
Strong Global Relations	68.80%	1.87%	797	2,275,621	69.40%	7.20%	41	162,216	68.80%	1.87%	838	2,437,837
Total	100.00%		1,112	3,307,404	100.00%		61	233,694	100.00%		1,173	3,541,098
PUBLIC ASSISTANCE												
No Public Assistance	83.00%	1.65%	950	2,700,736	58.10%	11.74%	44	134,567	81.30%	2.17%	994	2,835,303
Receives public assistance	17.00%	1.65%	145	553,943	41.90%	11.74%	16	96,943	18.70%	2.17%	161	650,887
Total	100.00%		1,095	3,254,679	100.00%		60	231,511	100.00%		1,155	3,486,189
DELINQUENCY INDEXES												
Nonviolent Behavior	0.8	0.1			1.7	0.5			0.9	0.1		
Violent Behavior	1.2	0.1			1.9	0.3			1.3	0.1		

Notes: Rate: Weighted Column %; SE: Standard Error computed using Taylor Series; Obs: unweighted observation count; Count: Weighted count; Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Association Between Adolescent Social Relationship Quality and Juvenile Arrest

In order to test whether there is a statistically significant association between the latent QASR variable and the indicator for juvenile arrest in a sub-sample of African American adolescents, a chi-square test was conducted. Results of the Chi-square test for independence indicated that there is no statistically significant association between social relationship quality and juvenile arrest in a sample of African American adolescents, $\chi 2$ (4, n = 3541098) = 1.05, p = 0.3751.

Findings: Correlates of Juvenile Arrest & African American Youth

For all analyses Black youth who indicated reported having no history of being arrested from school were used as the reference group for the dependent variable. For the factor level predictors, strong global relations (QASR) and no public assistance (public assistance) were set as the reference categories in the model. Table 33shows the overall results from the logistic regression analysis of juvenile arrest on the sociodemographic and behavioral predictors.

Quality of Social Relations

The findings of the logistic regression indicate that youth with poor school relations (*p*=.024) were the only latent class sub-group with a statistically significant result. Youth in the poor school relations class had 93% lower odds of being arrested (OR=-0.07) than youth with strong global relations, holding all other variables in the model constant. Compared to youth with strong global relations, youth in the strained social relations group had 41% lower odds (OR=0.593), youth in the moderate global relations had 42% higher odds (OR=1.42), and youth with poor relations with teachers

alone had 28% lower odds of being arrested (OR=0.76). All of which were not statistically significant, holding all other variables constant.

Socio-Demographics: Public Assistance

The findings of the logistic regression suggest that African American youth who live in households with parents who receive public assistance (OR=3.7) have 267% higher odds of being arrested than youth whose parents have not received public assistance, holding all other variables constant (p=0.006).

Behavioral Indicators: Nonviolent & Violent Delinquency

Finally, the results from the logistic regression did not indicate that there is a statistically significant relationship between violent and nonviolent behaviors and arrest in this sample of Black youth. For every one point increase on the violent delinquency index (OR=1.07), there is a 7.3% increase in the odds of a youth being arrested, holding all other variables constant (p=0.552). Additionally, for every one point increase on the non-violent delinquency index (OR=1.136), there is a 13.6% increase in the odds of a youth being arrested (p=0.137), holding all other variables constant (p=0.005).

Marginal Effects: Social Relationship Quality (QASR) and Arrest of Black Youth

Table 34 shows the marginal effects for all of the variables in the model. For the relational quality variable, the strong global relations subgroup is set as the reference group for all comparisons. The marginal effects for the poor school relations (p<0.001) group remained statistically significant. As such, the probability of arrest for a youth with poor relationships at school is 5% lower than a youth with strong global relations, holding all other variables at their mean values.

Examining the other statistically significant predictors only the marginal effect for the indicator of poverty (receives public assistance) was statistically significant. Hence, an African American youth who lived in a household with a parent who received some form of public assistance had a 10% higher probability of arrest as a juvenile than a Black youth whose family did not receive any public assistance.

Table 33: Marginal Effects of Juvenile Arrest by Race and Relational Quality

			95% CI		
	Est.	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY					
Strained Social Relations	-0.024	0.038	-0.099	0.051	0.530
Poor School Relations	-0.057	0.014	-0.084	-0.030	***0.000******
Moderate Global Relations	0.023	0.041	-0.057	0.104	0.566
Poor Teacher Relations Only	-0.017	0.019	-0.054	0.021	0.389
PUBLIC ASSISTANCE					
Receives public assistance	0.097	0.048	0.003	0.192	**0.043***
DELINQUENCY INDEXES					
Nonviolent Behavior	0.006	0.004	-0.002	0.015	0.151
Violent Behavior	0.004	0.006	-0.008	0.015	0.547

Table 34: Odds of Juvenile Arrest by Race and Relational Quality

				95% CI		
	OR	*B*	*S.E.*	*LCI*	*UCI*	*P-Value*
RELATIONAL QUALITY						
Strained Social Relations	0.593	-0.523	1.035	-2.570	1.525	0.614
Poor School Relations	0.066	-2.717	1.192	-5.075	-0.359	***0.024****
Moderate Global Relations	1.420	0.351	0.553	-0.744	1.445	0.527
Poor Teacher Relations Only	0.716	-0.334	0.417	-1.159	0.491	0.425
PUBLIC ASSISTANCE						
Receives public assistance	3.676	1.302	0.464	0.383	2.221	***0.006****
DELINQUENCY INDEXES						
Nonviolent Behavior	1.136	0.127	0.085	-0.041	0.296	0.137
Violent Behavior	1.073	0.070	0.118	-0.164	0.304	0.552

Reference group for all regression comparisons is the Strong Global Relations Class. Source: National Longitudinal Study of Adolescent to Adult Health (Add Health). Estimates and standard error account for probability of selection, stratification, and clustering. Standard errors are calculated using Taylor Series with Stata version 13.

CHAPTER 6: DISCUSSION & IMPLICATIONS

The Quality of Adolescent Social Relationships (Key Findings)

The results of the LCA revealed a five class solution that distinguished between youth with strained social relations, poor school relations, poor teacher relations only, moderate global relations, and strong global relationships. The class with individuals reporting strong global relationships was by far the largest group and made up 73% of the sample. Participants in this group had high likelihoods of having positive relationships teachers, classmates, friends, adults, and their parents. The 'Poor Teacher Relations' class was the next largest sub-group and made up 14% of the study sample. Respondents in this sub-group had a relatively high likelihood of having trouble getting along with their teachers and generally only had a moderate belief in their teachers' level of care for their well-being. An interesting characteristic about this group is the fact that they had a high likelihood of having positive relationships with all other individuals included in the model. The third largest group revealed a subset of adolescents that have somewhat moderately positive relationships across their social environments. Youth from this sub-group may perceive their teachers and other adults in their lives as having moderate concerns about their well-being. Of note in this group are the indications that these young people may be somewhat ambivalent about their relationships with adults other than their parents. The next largest group was the 'Strained Social Relations' sub-group. Youth in this sub-group were more likely to indicate that teachers, friends, and other adults did not care about them. Respondents in this sub-group also had the highest probability of indicating that their parents did not care about them, though there was still a 61% likelihood that individuals in this group would feel that their parents cared about them considerably. The final sub-group was comprised of youth who had trouble getting

along with teachers and classmates while also suggesting that their teachers did not care about them. Youth in this 'Poor School Relations' subgroup seemed to have very negative experiences in their school environment despite relatively strong positive relationships with their friends and parents. This group made up approximately 1.7% of the study sample.

Overall, it is not surprising that student-teacher relationships are fundamentally important to a young person's development and educators are universally encouraged to strive to forge positive relationships with their pupils in order to leverage better behavior and improved academic outcomes (Baker, Grant, & Morlock, 2008). That youth with 'Poor Teacher Relations Only' was the next largest subgroup supports literature that suggests that adolescents may tend to have more strained relationships with teachers, adults, and parents (Gaylord-Harden et al., 2009). As such, strained teacher relations may be a common interactional issue with adolescents.

In regards to race, the findings of the multinomial logistic regression revealed that African American youth generally have an increased likelihood for having poorer social relationships than their White peers. When compared with youth with universally positive social relationships, African American youth had a higher risk for being in the strained social relations, poor teacher relations, and poor school relations groups than the referent group of White youth. Considering the existing disproportionate levels of school suspension of Black youth in the U.S. it is unsurprising that Black youth would have a higher likelihood of having a negative relationship with their teachers. These findings also support those of Farrell, Ampy, & Meyer (1998) in that Black youth

seemingly have a higher likelihood of experiencing poorer relationships with their school peers, friends, and other adults.

Adolescent females tended to be less likely to have poorer social relationships than adolescent males. As can be seem from the model, young women have a considerably lower likelihood than males for being in any of the relational groups when compared to the strong global relations groups. Existing research has supported this finding with a number of studies indicating young women tend to benefit from and have more positive social relationships (Roorda et al., 2011; Hughes et al., 2012). ***Findings also seem to suggest that as a young person ages they are more likely to have poorer social relationships.*** This is evidenced by the results of the model that indicate an increased risk for an adolescent being in the strained social relations and moderate global relations groups as well as a decreased risk of being in the poor teacher relations only group when compared with youth from the strong global relations group. Interestingly, the school-based relational sub-groups produced findings that suggest student-teacher relationships may improve as a youth ages. Per the findings, youth were less likely to be in the 'Poor Teacher Relations' group with an increase in age. Youth were also less likely to be in the 'Poor School Relations' group but this finding was not statistically significant. These findings seem to be contraindicative of research that suggests youth have poorer relationships as they age (Hafen, Ruzek, Gregory, Allen, & Mikami, 2015).

Finally, youth from families that receive some form of public assistance are considerably more likely to be in groups with some form of strained social relationship when compared with youth from families not receiving public assistance. When compared with youth with universally positive relationships, all other sub-groups were

more likely to come from families with at least one parent receiving public assistance. All but one of these results was statistically significant (Moderate Global Relations). There is little literature that speaks to what factors may contribute to low-income youth having a higher risk for poorer relationships. There is some evidence that suggests that youth in poorer communities may have adversarial or negative relationships with teachers (Croninger & Lee, 2001; Stanton-Salazar, 1997). As Stanton-Salazar (1997) has argued, factors such as power and racial/cultural differences of adults may influence the relational quality of under-resourced youth in institutional settings. Low-income communities are also more likely to have higher incidences of violent criminal activity which may compromise a young person's opportunities to build interpersonal bonds and attachments.

Hypothesis 1:

Adolescent relationship quality will be associated with social exclusion (out-of-school suspension, expulsion, and juvenile arrest) in a sample of adolescents.

Adolescent relationship quality was found to have a statistically significant association with out-of-school suspension, expulsion, and juvenile arrest. This finding supports the premise of the first hypothesis as well as the theorized conception of general social exclusion. The findings suggest that the quality of an adolescent's relationships across their social environment may have an influence on their likelihood for institutional forms of social exclusion. The overall chi-square test of association seemingly captures the notion that there is some basic relationship between relational quality and the three indicators of social exclusion utilized in this study. In examining the other results, a number of key findings are evident.

First, youth with strained school-based relations and moderate global relations were more likely to experience an out-of-school suspension. In particular, youth with

poor relations with both teachers and students had the largest effect size of the three statistically significant groups. These findings also support the existing literature that suggests that if a student has a poor relationship with their teacher then they are at an increased risk for being suspended (Majd, 2011; Browne, 2005). While unsurprising, the finding that the coupling of poor teacher and classmate relations may lead to an increased probability of suspension than simply having a poor relationship with teachers adds greater context to our understanding of the importance of relationships in school outcomes. Youth with conflictual or strained relationships with both peers and teachers will conceivably be more frequently targeted for behavioral issues and subsequent office referrals in the school environment. These effects were also the same for the moderate global relations group which was also characterized moderate relationships with teachers. Finally, the results also show that youth exhibiting more delinquent behaviors, have poorer grade point averages and attendance, and come from families that receive public assistance are all more likely to experience an out-of-school suspension.

Similar to out-of-school suspension, only youth with poor school based relationships were found to have a higher probability for being expelled than youth with universally positive relationships. Beyond that, youth with at least one unexcused absence and a cumulative grade point average of "C" or lower also had a higher probability of expulsion than youth no unexcused absences or an "A" average. Because existing school zero tolerance policies require the expulsion of students who brandish weapons or exhibit violent behaviors, it is not surprising that the indicator for violent behavior was shown to have a statistically significant relationship with school expulsions.

Findings for the juvenile arrest model indicate that in general youth with strained relationships at school were found to have a statistically significant relationship with juvenile arrest after controlling for SES and violent and nonviolent delinquency. As such, this finding suggests that conflictual or strained relationships with teachers or other students in school settings may increase the likelihood of contact with the juvenile justice system, regardless of any violent or nonviolent delinquent tendencies on the part of a youth. This finding supports the existing literature that points to the rise in school zero-tolerance policies that establish formal ties between schools and the juvenile justice system. Youth who may engage in conflicts or arguments with classmates or teachers are much more likely to be censured by whatever school disciplinary systems are in place. During the era of zero-tolerance, schools have shown a tendency to refer more students to the criminal justice at greater numbers. Accordingly, there has been a considerable increase in police presence in the form of 'school resource officers' (SRO) on school campuses across the nation. As such, the fact that the findings indicate a statistically significant association between school-based relational strains and juvenile arrest is not altogether surprising.

Results also indicated that youth with strained social relations have a lower probability for juvenile arrest than youth with strong global relations. In examining the marginal effects of the juvenile arrest model, there is a notable and surprising statistically significant difference between the strained social relations and strong global relation groups. The direction of this effect is also reflected by the value for the beta coefficient as well as the odds ratio. It is somewhat unclear as to why youth with strained relationships with adults, friends, and teachers will be less likely to be arrested than youth

with strong positive relationships with everyone in their social environment. Perhaps youth in this group may have fewer overall social relationships and are subsequently less likely to interact with delinquent or antisocial peers. The items used in this analysis only provide an indicator of a young person's perceptions of the quality of their relationships. As such, it is conceivable that youth may have positive opinions about relationships with delinquent or antisocial peers who are involved in behaviors that may bring them in contact with the criminal justice system. The marginal effect for the 'Poor Teacher Relations' group maintained its statistical significance with youth in this group having a slightly higher probability for arrest as a juvenile. Finally, the results of this model also supports existing literature that suggests that a young person may be more likely to experience a juvenile arrest if they come from low-income backgrounds or exhibit more violent and nonviolent delinquent behaviors (Rekker et al., 2015; Males & Brown, 2013; Sampson, 2012).

Hypothesis 2:

The association between adolescent relationship quality and social exclusion (out-of-school suspension, expulsion, and juvenile arrest) will be stronger among African American youth as compared to White youth in the sample.

The second hypothesis of this study theorized that the association between adolescent relationship quality and social exclusion (out-of-school suspension, expulsion, and juvenile arrest) will have a stronger effect among African American youth as compared to White youth in the sample. A key element of this study was the investigation of what factors may contribute to racial differences in suspension. When compared with youth with universally positive relationships, African American youth in this dataset were generally more likely than comparable White youth to experience a

suspension event when controlling for socioeconomic status, unexcused absences, academic performance, and delinquent behaviors. As such, this finding adds to the already large body of evidence that suggests that African American youth face a greater burden of risk in regards to school push-out.

However, the results do not seem to indicate that relationship quality contributes to racial disparities in out of school suspension. Overall, the adjusted marginal effects for the 'Race x QASR' interaction revealed that Black youth of all relational profile types have a slightly higher likelihood of being suspended than comparable White youth when compared with youth with strong global relations. However, none of these differences were found to be statistically significant.

In regards to expulsion, Black youth of all relational profile types were found to have a higher probability of being expelled than White youth when controlling for socioeconomic status, unexcused absences, academic performance, and delinquency. This again supports the existing literature and administrative data that indicates that African American youth are at a greater risk for expulsion from their school. Similar to the findings for suspension, the adjusted marginal effects for the 'Race x QASR' interaction revealed that Black youth of all relational profile types have a statistically insignificant but slightly higher likelihood of being expelled than comparable White youth when compared with youth with strong global relations.

The adjusted marginal effects for the 'Race x QASR' interaction revealed that Black youth with poor relationships with teachers and classmates have a statistically significant lower likelihood of being arrested than comparable White youth when compared with youth with universally strong global relations. While this finding is

somewhat surprising it simply indicates that the size of the effect is larger for White youth with comparable profiles. Thus, the effects of poor school relationships on juvenile arrest may be greater for White youth than Black youth. This is seemingly due to a larger percentage of arrested White youth came from the 'Poor School Relations' and 'Poor Teacher Relations' groups. At the same time, there is a slightly larger percentage of Black youth with 'Strong Global Relations' and a history of arrest as juveniles. Considering the literature that indicates Black youth are much more likely to come into contact with juvenile justice system it is somewhat unclear as to why White youth with school-based relational profiles had higher likelihoods for arrest. As such, this is a result that would seem to be in need of further investigation.

The findings of this study failed to support the hypothesis that racial disparities in suspension, expulsion, and arrest were driven by the overall quality of an adolescent's social relationships. As prior research and the result so f this study show, African American youth generally have poorer relationships with teachers and school peers when compared with White youth. Per the premise of social exclusion theory, it would stand to reason that this would also contribute to a higher risk of exclusion than White youth. While the overall association between relational quality and exclusion is statistically significant, it seems as a Black youth's overall relational quality does not make them more likely for suspension and expulsion than White youth. In fact, according to the results indicated by the arrest model it seems that the quality of a White adolescent's relationships may pose a greater risk for arrest than Black youth.

Hypothesis 3:

Adolescent relationship quality will be associated with social exclusion (out-of-school suspension, expulsion, and juvenile arrest) in a sub-sample of African American adolescents.

The third hypothesis of this study theorized that an adolescent's relationship quality will be associated with social exclusion (out-of-school suspension, expulsion, and juvenile arrest) in a sub-sample of African American adolescents. Specifically, the research question looked to examine what factors may contribute to social exclusion within a sample of solely African American youth. The findings of this study partially supported the premise of this third hypothesis. ***A statistically significant association was found between the variable for adolescent relationship quality and the indicators for suspension and expulsion in a sub-sample of Black youth. On the other hand, a chi-square test for independence did not indicate a statistically significant relationship between QASR and juvenile arrest in the sub-sample of Black youth***. Similar to the results for the first hypothesis, the results of the analysis seem to support the suppositions of social exclusion theory. Looking solely at a sub-sample of Black youth, the basic chi-square result suggests that the pattern of association evident in the larger sample may also be partially true for Black youth specifically.

Within the sample of African American respondents, youth with strained social relations, poor school relations, and moderately positive global relationships were all found to be at an increased risk for out of school suspension when compared with Black youth with strong positive relationships throughout their social environment. Like the findings for the entire sample, Black youth with poor or strained relationships with both teachers and school peers were found to have a 43% higher probability (the

highest probability) for suspension when compared to youth with universally positive relationships. All other groups had a 17-20% higher probability for suspension than the reference group, holding all other variables constant. ***Black youth with poor relationships with teachers alone were also at an increased risk for expulsion (7% higher probability) when compared to Black youth with universally positive relationships***. Additionally, as shown in prior literature, the indicators for socioeconomic status, unexcused absence, and academic performance unsurprisingly showed that having at least one unexcused absence, a cumulative grade point average lower than an "A" average, and living in a household with a parent receiving public assistance all increased the probability of an African American youth experiencing an out of school suspension. Black youth with at least one unexcused absence and cumulative grade point averages of "C" or lower were also found to have a higher likelihood for expulsion.

Again, the results seem to suggest that having a poor relationships with a teacher substantially increases a young person's risk for school exclusion even if a young person enjoys positive relationships in all other parts of their lives. Typically it is assumed that a student's behavioral problems in a school environment are due to factors such as stressors in theirs social environment (home, neighborhood) or intrinsic personality traits that manifest as antisocial behavior. However, in this study it seems that elements of a young person's school environment may be the sole driver of conflict in their lives and consequently their main pathway to school exclusion. Implicit to this finding is the question of what role social power may play in a young person's relationship with their teachers. As suggested by social exclusion theory, unequal power relationships are the key drivers in social exclusion. As such, these findings may imply that poor relationships

with educators is a key risk factor in school pushout, even if a young person maintains positive relationships in all other aspects of their lives. Considering the known consequences of school suspension and expulsion for African American youth, this is potentially an important finding of this study.

In examining the final juvenile arrest model for the African American only subsample, only Black youth with poor school relations were found to have a higher probability for experiencing an arrest as a juvenile when compared with Black youth with universally positive relationships. Despite the results of the overall chi-square test, the results of the arrest model mirror the results of the prior findings and suggest that school relationships may indeed be a contributing factor to a young person's entry into the juvenile justice system. Interestingly, youth with higher scores on the violent and nonviolent behavior indexes did not have a higher probability for juvenile arrest. This result is somewhat surprising considering it differs from the result of the juvenile arrest model for the full sample. This result could potentially suggest that African American youth face the same risk for arrest regardless of the number of delinquent behaviors they may exhibit in school. On the other hand, as table 32 shows, the largest percentage of Black youth with an arrest were in the 'Strong Global Relationships' sub-group. As such, this result may be because African American youth in the 'Strong Global Relationships' sub-group may be more likely to endorse some delinquent peer relationships as positive and caring in nature (Haggerty et al., 2013; Loeber, 1990).

Implications

Based on the findings of this study, the proposed theory of social exclusion seems to be conceptually valid. Specifically, this study confirmed that the quality of an

adolescent's social relationships are of fundamental importance to their risk for detrimental social outcomes such as institutional social exclusion. This is especially true for the relationships that a young person maintains in an educational setting. This study provides more context on what factors contribute to what's been dubbed the "school to prison" pipeline. The findings of this study add to the growing chorus of education reformers and activists who are clamoring for new and creative alternative forms of discipline in schools. According to the findings of this study, relationship focused interventions that attempt to reduce disciplinary issues by focusing on enhancing teacher-student interactions may be an ideal method for reducing exclusionary discipline (Skiba & Losen, 2016).

Implications for Social Work Policy

The findings of this study suggest that poor relationships in the school environment are an important risk factor for the three forms of institutional social exclusion examined in this study (suspension, expulsion, and arrest). As such, school policies should emphasize relationally based approaches to supporting students as a means to reducing school pushout. One promising relationship-based alterative to exclusionary forms of school discipline is the use of proactive and reactive (restorative justice) restorative practices (RP) in school and classroom environments. Proactive restorative practices utilize formal and informal processes to build and maintain healthy relationships within a school community (IIRP, 2016). Reactive restorative discipline practices aim to mend social relationships that may have been fractured by some form of relational infraction within the school environment (Gregory et al., 2015). Restorative practices typically take the form of restorative circles (for community building &

healing), affective communication "statements" (feelings-based communication norms), fair process (inclusion of students in decision making), and other informal and formal practices (IIRP, 2016; Gregory et al., 2015). Recent research has shown that high schools utilizing restorative practices saw declines in student suspensions (Gregory et al., 2015; Gonzalez, 2014; Simson, 2012). Gregory et al. (2015) in particular investigated whether the usage of restorative practices in the classroom was associated with the quality of teacher-student relationships. Gregory et al. (2015) found that the more consistently restorative practices were implemented in the classroom the more student-teacher relationships were characterized as respectful. High levels of RP implementation were also shown to contribute to fewer discipline referrals for African American and Latinx students (Gregory et al., 2015).

Implications for Social Work Practice

In regards to social work practice, it is essential that schools find more opportunities to both empower and increase the number of social work professionals in the school environment. School social workers can also play an integral role in the development of alternative forms of discipline that are trauma centered and developmentally sound. School social workers play an integral role in providing social and emotional support to students and families. However, it has been noted by a number of sources that many schools are woefully understaffed by support staff such as school social workers and school psychologists (Belsha, 2016; Yuen & Williams, 2016). As such, many school social workers are typically overwhelmed by their growing caseloads which often require considerable administrative duties and managing unforeseen student crises. Because of the underinvestment in school support staff, schools are missing out

on the many unique skills that a social worker could bring to a school's disciplinary processes. Social workers have the requisite skill to conduct trainings for school staff on key topics such as trauma-informed practice, adolescent development, restorative practices, conflict management, and other key topics that are crucial to developing alternative approaches to exclusionary discipline. Including school social workers in disciplinary hearings could also assist school administrators in identifying underlying psychosocial factors that could assist in developing appropriate and proportional responses to student misbehavior in school environments. Ultimately, the results of this study seem to suggest that school based relationships are integral factors in institutional forms of social exclusion. As such, the introduction of relationship-focused interventions and the inclusion of social workers in disciplinary decisions are potentially two ideal solutions to fostering healthy school environments with strong supportive relationships.

Limitations

There are a number of limitations to this dissertation. First, though the Add Health's overall sample size and rigorous design aid in generalizability, it should be noted that the data utilized in all analyses was collected a little over two decades prior. As such, caution should be exercised in reviewing these findings. While the data used in this analysis is older, it is somewhat mitigated by the fact that the disproportionate suspension, expulsion, and arrest of Black youth has unfortunately been a stable and noted phenomenon from the mid-1970's to present day (Gregory, Skiba, & Noguera, 2010; Edelman, Beck, & Smith, 1975).

Another limitation of this study is its usage of single item measures of relational quality. In most instances, measures of relationship quality are multi-item scales that

attempt to assess different aspects of relationship quality. For instance, Sentse & Laird (2010) distinguish between acceptance, warmth, support, and conflict as distinct affective dimensions of social relationships. In their study, they utilized the fourteen item Children's Report of Parental Behavior in order to measure parent-child relationship experiences (Sentse & Laird, 2010). Others have differentiated between multiple types of social support as indicators of relationship quality. Malecki & Demaray (2006) for instance utilized a 60-item scale called Child and Adolescent Social Support Scale in order to measure emotional, informational, appraisal, and instrumental forms of support. Due to design limitations of the Add Health, this study was not able to utilize more sophisticated multi-item measures of relationship quality.

Future research may want to examine/explore additional mediating variables that offer insight into links between relationships and exclusionary outcomes. For instance, internalizing behaviors such as low self-esteem or depression may be key mediating variables between relationship quality and exclusionary outcomes. For instance, in a meta-analytic review of literature on interpersonal social exclusion, Blackhart et al. (2009) found that interpersonal rejection was found to cause a general shift towards negative emotional states. Social exclusion has also been found to increase aggression and risk taking while decreasing intelligent thought and prosocial behavior (Twenge & Baumeister, 2005). All of these factors could conceivably be contributory factors to worsening relationships in social environments and thus accelerate the process of social exclusion.

This study did not provide any findings that might speak to the influence of strained parental relationships on social exclusion. Unfortunately, the findings of this

analysis did not reveal a class of youth who experienced relational strains with their parents. As noted in chapter 2, the quality of the relational ties between an adolescent and their parents is one of the most important factors in their overall development. The fact that that 96% of the sample reported having positive caring relationships with their parents makes it difficult to consider to what extent conflictual or strained parent relations may have on exclusionary outcomes. Particularly in relation to an adolescent's other social relationships.

Conclusion

The results of this study add to the growing body of literature on what's referred to as the school to prison pipeline and racial disproportionalities in school suspension, expulsion, and juvenile arrest. This study aimed to explore the association between adolescent social relationship quality and three forms of social exclusion: out of school suspension, juvenile arrest, and school expulsion. A latent class analysis revealed an interpretable five-class solution in terms of adolescent social relational quality. Youth were classified into five relational sub-groups: (1) strained social relations, (2) moderate global relations, (3) poor school relations, (4) poor teacher relations only, and (5) positive global relations. Per the premise of social exclusion theory, results indicated that there is an overall association between relationship quality and the three forms of social exclusion. Relationship profiles with strained school-based relationships were found to have an increased likelihood for all forms of exclusion. These findings were found in both the full sample as well as a sub-sample of African American youth. The hypothesis that an adolescent's relationship profile is a key factor in racial disproportionalities in suspension, expulsion, and arrest was not supported. Overall, the findings of this study

serve to reinforce the importance of the bond between educators and students for student outcomes. School expulsion, suspension, and arrest have been associated with long term detrimental outcomes such as school dropout (Kirk & Sampson, 2013), increased unemployment (Western & Beckett, 1999), grade retention (Skiba, Arrendonda, & Rausch, 2014), and continued engagement with the adult criminal justice system (Aizer & Doyle, 2015). For social workers, an increased understanding of the importance of school-based relationships for exclusionary outcomes can serve them in their work as key frontline support staff in school systems and other educational settings.

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APPENDICES

Appendix A: Add Health Survey Items

Relational Quality Items

Teacher Conflict

How often have you had trouble…getting along with your teachers?

- 0=never
- 1=just a few times
- 2=about once a week
- 3=almost everyday
- 4=everyday
- 6=refused
- 7=legitimate skip
- 8=don't know

Peer Conflict

How often did you have trouble…getting along with other students?

- 0=never
- 1=just a few times
- 2=about once a week
- 3=almost everyday
- 4=everyday
- 6=refused
- 7=legitimate skip
- 8=don't know

Parent Relational Strain

How much do you feel that your parents care about you?

- 1=not at all
- 2=very little
- 3=somewhat
- 4=quite a bit
- 5=very much
- 6=does not apply
- 96=refused
- 98=don't know

Friend Relational Strain

How much do you feel that your friends care about you?

- 1=not at all
- 2=very little

- 3=somewhat
- 4=quite a bit
- 5=very much
- 6=does not apply
- 96=refused
- 98=don't know

Adult Relational Strain

How much do you feel that adults care about you?

- 1=not at all
- 2=very little
- 3=somewhat
- 4=quite a bit
- 5=very much
- 6=does not apply
- 96=refused
- 98=don't know

Teacher Relational Strain

How much do you feel that your teachers care about you?

- 1=not at all
- 2=very little
- 3=somewhat
- 4=quite a bit
- 5=very much
- 6=does not apply
- 96=refused
- 98=don't know

Social Exclusion Items

Suspension & Expulsion

Have you ever received an out-of-school suspension from school?
Have you ever been expelled from school?

- 0=no
- 1=yes
- 6=refused
- 8=don't know
- !=missing

Juvenile Arrest

How many times were you arrested before you were 18

- Null=times arrested range 1 to 30
- 96=refused

- 97=legitimate skip
- 98=don't know
- 99=not applicable
- !=missing

Control Variable Items

Socioeconomic Status

Does she (Resident Mother) receive public assistance, such as welfare?
Does he (Resident Father) receive public assistance, such as welfare?

- 0=no
- 1=yes
- 6=refused
- 7=legitimate skip
- 8=don't know
- 9=not applicable

Academic Achievement

What was your grade in English or language arts? (MOST RECENT GRADING PERIOD)
What was your grade in mathematics? (MOST RECENT GRADING PERIOD)
What was your grade in history or social studies? (MOST RECENT GRADING PERIOD)
What was your grade in science? (MOST RECENT GRADING PERIOD)

- 1=A
- 2=B
- 3=C
- 4=D or lower
- 5=didn't take this subject
- 6=took the subject, but it wasn't graded this way
- 96 =refused
- 97=legitimate skip
- 98=don't know
- 99=not applicable

Truancy

How many times {HAVE YOU SKIPPED/DID YOU SKIP} school for a full day without an excuse?

- range 0-99 times
- 996=refused
- 997=legitimate skip
- 998=don't know
- 999=not applicable
- !=missing

Violent Delinquency

In the past 12 months, how often did you...get into a serious fight?
In the past 12 months, how often did you...hurt someone badly enough to need bandages or care from a doctor or nurse?
In the past 12 months, how often did you...use or threaten to use a weapon to get something from someone?
In the past 12 months, how often did you...take part in a fight where a group of your friends was against another group?

- Never
- 1 or 2 times
- 3 or 4 times
- 5 or more times
- Refused
- Don't Know
- N/A

Non-Violent Delinquency

In the past 12 months, how often did you...Deliberately damage property that didn't belong to you?
In the past 12 months, how often did you...Take something from a store without paying for it?
In the past 12 months, how often did you...Steal something worth more than $50?
In the past 12 months, how often did you...Go into a house or building to steal something?
In the past 12 months, how often did you...Steal something worth less than $50?

- Never
- 1 or 2 times
- 3 or 4 times
- 5 or more times
- Refused
- Don't Know
- Skip