MITIGATING DELINQUENCY THROUGH ACADEMIC INTERVENTION: AN EMPIRICAL TEST OF SOCIAL CONTROL THEORY

By

Thaddeus Lateef Johnson

Vic W. Bumphus
Associate Professor of Criminal Justice
(Committee Chair)

Tammy Garland
Associate Professor of Criminal Justice
(Committee Member)

Seong min Park
Assistant Professor of Criminal Justice
(Committee Member)

MITIGATING DELINQUENCY THROUGH ACADEMIC INTERVENTION: AN EMPIRICAL TEST OF SOCIAL CONTROL THEORY

By

Thaddeus Lateef Johnson

A Thesis Submitted to the Faculty of the University of Tennessee
at Chattanooga in Partial Fulfillment of the Requirements of the
Degree of Master of Science in Criminal Justice

The University of Tennessee at Chattanooga
Chattanooga, Tennessee

May 2016

ABSTRACT

Using school and program records for 236 ninth grade students involved in the GEAR UP program, a partial test of Hirschi's social control theory (1969) was conducted to investigate the effect of academic performance and social bonds on problem behavior. Rarely tested in at-risk, minority student groups, the adolescents sampled in this research attended schools zoned for predominantly disadvantaged minority communities. Findings demonstrate that grade point average, attendance, gender, and participation in GEAR UP summer activities significantly impact student behavior. The results have implications for broadening the context of social control theory and reducing school delinquency.

DEDICATION

This manuscript is dedicated to my wife, Natasha Johnson, my mother, Regina Johnson, my father, Galvin Johnson, Jr., and my brother, Galvin Johnson, III for your continued encouragement and love. I am a reflection of your efforts and investment. I thank God for each of you every day.

Additionally, I would like to dedicate this research to all the youth who look like me. I know that enduring the pressures of urban life and being discounted by society is difficult, but be strong, be courageous, be encouraged, and never lose faith. I never envisioned that I would attend and complete graduate school. If I can do it, so can you.

ACKNOWLEDGEMENTS

This research would have been impossible without the support and guidance of my thesis committee. First, I would like to thank my mentor and committee chair, Dr. Vic W. Bumphus for your belief in me and my vision. I truly appreciate your expertise and investment in my academic, personal, and professional development. Second, I would to extend my indebted gratitude to Dr. Seong min Park. This research was greatly enriched by your knowledge and statistical mastery. Your patience and willingness to assist me in this endeavor greatly enhanced this experience. Third, I would like to thank Dr. Tammy Garland for your unyielding support, guidance, and advocacy. Lastly, and certainly not least, I would like to thank my wife, secondary education consultant, and best friend, Natasha N. Johnson for your overwhelming support, patience, encouragement, and commitment to our individual and collective goals. You have provided me with the strength, courage, inspiration, and motivation needed to fulfill my destiny.

I would also like to thank the Criminal Justice Department for accepting me and believing in me. Every member of the staff and faculty has been instrumental in my academic journey and I will never forget your kindness, support, and faith in me.

Finally, I would like to extend my deepest gratitude to Dr. Hunter Huckabay of the GEAR UP program and Dr. Keith White of the Public Education Foundation (PEF) in Chattanooga, TN. Without your cooperation and assistance, this research would not be possible. Entrusting me with the data allowed this study to highlight the need for interventions in one of the most vulnerable and challenging populations in the public school system.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Juvenile delinquency has customarily been regarded as a criminal justice issue; however, as juvenile crime has continued to affect families and communities across America, an interdisciplinary approach has gained credibility as a means to address delinquent behavior. Current crime statistics have indicated lower incidences of overall criminality, but America's fear of crime remains. Proliferated levels of fear are the result of conjoining illusions of increased criminality with news and social media depictions of youth running rampant in American schools and neighborhoods. It must also be noted that juvenile crime statistics are not as reliable as adult statistics because most states do not subscribe to a uniformed reporting system in regards to juvenile criminality. Nevertheless, many experts propose that juvenile crime has experienced a downward trend as well. Several states including New York, Virginia, and Florida have a standardized system for reporting juvenile crime, and statistics have indicated decreases in both violence and overall juvenile criminality.

Fear of crime in the U.S. may appear to be exaggerated since crime statistics signify otherwise, but there are substantiated reasons for concern. Juvenile crime statistics can be misleading, and it is imperative that the full scope of these statistics is understood. In many jurisdictions, official records regarding juvenile criminality may be underrepresented because a large number of these crimes are not reported to law enforcement. Therefore, delinquency may be more prevalent than available data indicate.

Traditionally, the juvenile justice system has functioned as a reactive institution that controls delinquent youth through incarceration and various other means of sanctioning. Social control has also been the foundation of the system's prevention philosophy since pre-delinquent youth are controlled through similar measures. When addressing the problem of delinquency, the system's practice of housing incarcerated youth in residential facilities, particularly those arrested for nonviolent acts, has resulted in more harm than benefit (Gatti, Tremblay, & Vitaro, 2009; Keeley, 2006; McPherson & Sedlak, 2010; Mendel, 2011). Despite the fact that controlling youth after an infraction may deliver a tangible and highly visible response to crime, a preventative approach may provide greater benefit to juvenile offenders due to the risk factors associated with incarceration.

Instead of simply responding to crime, effective containment of juvenile delinquency requires the exploration of options other than incarceration that address misconduct through proactive measures. Hawkins and Weis (1985) proposed that adolescent-based crime prevention can be categorized into two distinct classifications: early intervention and primary prevention. Accordingly, Hawkins and Weis (1985) rendered concise conceptualizations of these categories by positing:

> Early intervention seeks to identify pre-delinquents or youths who are high risks for delinquency and to correct their behavioral tendencies or criminogenic circumstances before delinquency results. In contrast, primary prevention does not seek to "correct" individuals who are identified as on the path to delinquency. Rather, it attempts to preclude the initial occurrence of delinquency, primarily at organizational, institutional, social structural, and cultural levels. Thus, it also has been called preclusive prevention (p. 74).

By incorporating both philosophies of crime prevention into programs dedicated to targeting at-risk adolescents, the actual rate of juvenile crime can be positively affected. In order to effectively mitigate juvenile delinquency, it is imperative to design prevention models that

service students in the locations where the greatest potential for delinquency occurs. Generally, offenders characteristically mirror their victims and the same is particularly true for middle-school students. An overwhelming number of juvenile crimes are committed in schools or areas adjacent to the school (Anderson & Hughes, 2009; Gibson, Miller, & Schreck, 2003; Lauritsen & White, 2012; Puzzanchera & Sickmund, 2014). Puzzanchera and Sickmund (2014) concluded that during school days violent juvenile victimization occurred most often in the hours following school and declined substantially after the early evening hours. Therefore, in order to design an effective prevention model, intervention programming should be incorporated into the fabric of the school environment and provide services both during school hours and after.

Problem Statement

The school's involvement in cultivating the lives of students is essential to the prosocial development of adolescent pupils because pre-adulthood is the peak period for engagement in deviant behavior and potential subsequent delinquency. This phase of development is critical since youth will encounter unsupervised exposure to newfound environmental and social circumstances. Darling (2005) discussed this exposure by denoting adolescence youth are subjected to new risks, changing relationships with families and friends, and less time under supervision; therefore, adolescence is a critical stage in development and a logical place for intervention. It is more difficult for at-risk students to navigate the path to adulthood, and social factors such as neighborhood disorganization, disjointed households, and low socioeconomic status may reflect greater proclivity toward delinquent behavior (Chung & Steinberg, 2006; Cohen, Fabio, Loeber, & Tu, 2011; Elliott et al., 1996). As a result, at-risk students require additional attention at school.

Combating juvenile delinquency in the at-risk student population requires targeting the occurrence of deviant behaviors and redirecting the perspectives of these students through curriculum specifically crafted for academic success. It is necessary for both in-school and after-school curricula to be complementary while highlighting prosocial models of behavior. Family, community, and neighborhood influences have a profound effect on the lives of at-risk students; however, addressing the needs of these students and preparing them for life beyond school through academic interventions can positively affect future behaviors. Consequently, at-risk students are from poor households in socially disorganized communities and their grades reflect the strains of the environment (Cole, Poulin, & Schinke, 2000). The correlation between academic underachievement and asocial behaviors is empirically supported (Brewer et al., 2000; Elias et al., 2003; Hinshaw, 1992), and academic intervention is needed to shift the trajectories of these students.

In order to study the impact of mentorship on academic achievement and subsequent behaviors, the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) program sponsored by the University of Tennessee at Chattanooga (UTC) was evaluated. The main objective of the GEAR UP program is to increase the college enrollment rate of students deemed at-risk by reducing the academic performance gap between at-risk students and their counterparts. Several factors including substandard academic development, inadequate commitment to the school and community, and meager access to support, advisement, and college preparation has resulted in only 18% of students from at-risk schools continuing to college. This is a stark comparison to 51% of students from the remaining Hamilton County schools advancing to college (Tennessee Department of Education, 2010). The GEAR UP program does not necessarily aim to mitigate delinquency or asocial behaviors in at-risk youth,

but seeks to modify students' perspectives and academic habits that increase the probability of college enrollment for this population. Behavioral benefits are implied in the curriculum; however, the GEAR UP program presents a prime opportunity to explore the relationship between academic performance and asocial behaviors along with the effect of mentorship on both factors.

Currently, the program services three schools categorized as high risk in Chattanooga, TN. Students involved in the GEAR UP program were first introduced to the intervention model in 2011 during 6th and 7th grade. This same cohort of students is currently in 9th and 10th grade, and the program is in the fourth year of a seven-year cycle. Students involved in the GEAR UP program will continue to progress in the program through their 12th grade year in 2018 for current 9th graders and through the first year of college for current 10th graders. Since this is the midway point for the GEAR UP program, this is the optimal time to assess the effectiveness.

Several programming dynamics have been integrated to provide comprehensive academic support to these students. The program includes the participation of teaching assistants during school hours along with counselors, mentors, tutors, and interventionists who facilitate after-school programming. Additionally, the GEAR UP program has incorporated its standards into the culture of the school by providing training to educators and administrators regarding testing and curriculum for at-risk students.

Research Questions

This study investigates the extent to which curriculum emphasizing academic bonds/achievement, by providing access to extracurricular programming, can reduce the occurrence of asocial behavior in the at-risk student population. Travis Hirschi's social control

theory has provided the theoretical framework for similar studies and is employed as the theoretical perspective here. Bonding to school and intervention programs is particularly beneficial in student groups with elevated risk factors (Abbott, Hawkins, & O'Donnell, 1995; Catalano, Fleming, Haggerty, Hawkins, & Oesterle, 2004). This study extends this body of work by applying social control theory in the analysis of a predominately minority student population deemed as being at risk of academic failure. Data from several sources have identified that students who are committed to school and involved in positive extracurricular activities are more likely to experience academic success (Bryan et al., 2012; Eklund, Freidenfelt Liljeberg, Fritz, & Klinteberg, 2011; Hirschi, 1969; Maddox & Prinz, 2003). Scholars connote that the enhancement of academic performance is significant in mitigating delinquency and students that experience scholastic accomplishment retain a lower probability of negative behavioral outcomes (Erickson, Hoffmann, & Spence, 2013; Katsiyannis, Ryan, Spann, & Zhang, 2008; Sprott, 2004; Zamora, 2005). This research attempts a partial test of control theory concentrating on two specific bonds: involvement and commitment. Five central research questions are considered and presented below:

1. Does involvement in specific GEAR UP program activities (i.e., mentorship) mitigate levels of asocial or serious school delinquency controlling for other relevant factors?
2. Does commitment to school, as measured by a higher level of academic achievement (GPA), mitigate levels of asocial or serious school delinquency controlling for other relevant factors?
3. Does commitment to school, as measured by a higher number of course credits earned, mitigate levels of asocial or serious school delinquency controlling for other relevant factors?
4. Does involvement in school, as measured by lower incidences of absences, mitigate levels of asocial or serious school delinquency?
5. Does higher achievement in specific school curriculum (i.e., math grade) mitigate levels of asocial or serious school delinquency?

Behavioral trajectories in at-risk student groups were estimated by examining the influence of academic performance, and bonds to school and the GEAR UP program on asocial and serious delinquent behavior. Specifically, the correlations between the number of absences, grade point average, and individual elements of the program were explored to evaluate the mitigating effects of said variables on asocial school behavior. Regression analysis was used to investigate interactions between selected exogenous and endogenous variables such as grade point averages (GPA), math performance, English performance, course credits, attendance, gender, socioeconomic status, household structure, after-school programming, in-school assistance, mentorship hours, post-secondary preparation, rigorous academic training, and rule violations to investigate the abovementioned relationship. This study was conducted with the school records of 9th grade students enrolled in schools servicing predominately at-risk student populations.

Significance of the Study

The social, economic, and political costs of crime continue to negatively impact society, and the practice of constructing more correctional facilities in conjunction with harsher sentencing has failed to produce the rehabilitative change integral to circumventing the cyclical nature of criminality. A fresh approach emphasizing prevention through educational intervention is needed to mitigate the costs of crime. Empirical research indicates that poor academic scholarship is a significant determinant of deviance and this is particularly true in the at-risk student population (Crump, Haynie, Saylor, & Simons-Morton, 1999; Maddox & Prinz, 2003; Zamora, 2005). Khatiwada, McLaughlin, Palma, and Sum (2009) conducted research that compared the incarceration rates of high school dropouts to those of high school graduates. The

findings from this study suggested high school dropouts possessed a higher probability of incarceration. Accordingly, 10% of high school dropouts were incarcerated in comparison to 3% of high school graduates. Not only is academic underachievement significantly associated with imprisonment, but academic accomplishment is also linked to significantly decreasing the likelihood of criminality. Khatiwada and colleagues concluded (after a synthesis of extant research) that individuals who completed a bachelor's degree had a lower probability of incarceration than those otherwise situated.

These abovementioned findings demonstrate the need for academic intervention in the high-risk student population along with preparation for post-secondary educational opportunities. The number of at-risk adolescents in the nation's school systems is steadily increasing and these students possess a greater propensity to prematurely end their secondary education while being more susceptible to criminality than other students (McDill & Natriello, 1998). Therefore, even though it may be more beneficial to intervene in the lives of these students during early childhood and primary school, adolescence is arguably the most critical phase in preventing the initiation of criminality. It is important that intervention programming be incorporated into the lives of these students to prevent a blossoming population of future delinquents and offenders.

Juvenile delinquency is an issue that directly impacts the future of the criminal justice system. Presently, prisons and other correctional facilities are dealing with overcrowding due to burgeoning numbers of offenders being incarcerated. Overpopulation in these facilities is resultant of "get tough on crime" and "war on drugs" policies employed by the justice system. Due to this imbalance in policy and ensuing dispositions, an imbalance of justice has occurred. The considerable workload of the courts along with the exploding correctional population has resulted in the imposition of justice that allows untreated or partially treated offenders to

prematurely reenter society. These policies have not been the most efficient or effective; however, shifting the focus to treatment and prevention in place of crime control may render promising results. Simply housing adult criminals without a blueprint for circumventing criminality in the next generation could further aggravate the crime problem while facilitating a ready supply of future offenders.

CHAPTER II

LITERATURE REVIEW

Asocial Behavior and Delinquency

When defining asocial and delinquent behavior, some scholars prefer differentiation between the two sets of behaviors; however, this study conceptualizes both sets of behaviors as conduct contrary to school and societal norms. This may include acts of vandalism, larceny, sexual harassment, drug use, lying, bullying, truancy, and other acts of nonconformity along with befriending delinquent peers. Behaviors inconsistent with societal values present troubling implications, and Moffitt (1993) rendered revelatory insight concerning the association between asocial behaviors and the initiation of adolescent delinquency. The relationship between these factors has been empirically established and asocial behaviors are precursory to delinquency (Alati et al., 2011; Gorman-Smith, Loeber, & Tolan, 2000). Fergusson and Horwood (1995) discovered strong associations between early misconduct and delinquency, and suggested earlier behavioral issues are predictive of delinquent behavior.

Even though the current study focuses on asocial behaviors during adolescence, it must be noted that involvement in misconduct usually occurs prior to middle school. Hence, the longer the duration of involvement in nonconformist behavior substantially increases the potential for delinquent outcomes (Patterson & Yoerger, 1999). Because of the newly found freedom in pre-adulthood and more exposure to non-familial relationships, this period of transition is critically important with respect to addressing asocial behaviors. Detachment from supervision and other

positive bonds during adolescence may influence the onset of delinquency which does not decline for most individuals until early adulthood (Moffitt, 1993).

While the majority of juveniles that transition to delinquency mature and then desist, variations in this trend have been observed in minority youth from at-risk populations. Minority youth, particularly male adolescents, participate in offending that persists for longer periods in comparison to youth from more privileged communities (Cohen et al., 2011; Gannon-Rowley, Morenoff, & Sampson, 2002; Krivo & Peterson, 1996; Piquero, 2008). At-risk adolescents in disorganized neighborhoods experience more frequent exposure to negative and consequential influences than their counterparts. Studies have also noted that prior arrests and convictions as a juvenile increases the likelihood of adult criminality (Brame, Bushway, & Paternoster, 1999; LeBlanc et al., 1992; Thornberry, 2005). African-American and Hispanic youth are arrested and placed in confinement more frequently than whites, and this fact further illustrates the complexity of the perils faced by at-risk adolescents. Hence, intervention is imperative in the at-risk population due to their propensity to evolve from delinquency to adult criminality caused by their vulnerability to negative socioeconomic and environmental factors.

The Influence of Academic Achievement on Asocial Behaviors

The association between academic achievement and asocial behaviors is an issue that has sparked much debate amongst educators and scholars regarding the temporal order of these indicators. Many scholars have maintained that asocial and maladaptive behaviors are significant derivatives of academic underachievement. Likewise, this study posits the same association. This is congruous with results of research conducted by Boland, Chard, Good, Horner, and McIntosh (2006) that indicated academic deficiencies precede problem behavior. In many instances,

antisocial behavior occurs as either a self-protective measure to safeguard the student's perceived status or as a form of externalizing the need for academic intervention. Students engaging in asocial conduct also experience various issues associated with scholastic underachievement. Brady and Mann (1988) disclosed underachieving students also suffer from self-esteem deficits, problems in language skills, and interpersonal difficulties.

Due to the precarious nature of development during adolescence, effective intervention is imperative for this population of students in response to their predisposition to criminality. These students are more susceptible to misconduct and violations of law since asocial behaviors are causally related to the onset of juvenile delinquency. Empirical evidence presented by Hinshaw (1992) demonstrated scholastic issues were directly linked to antisocial behaviors which can lead to delinquency in adolescents. This is the norm for underachieving youth regardless of the setting; however, the exhibition of asocial behavior, particularly within the school setting, is often the result of academic deficiencies.

Several indicators have been recognized as contributing to juvenile crime, but an overwhelming number of studies have indicated the importance of educational achievement in ameliorating behavioral issues that potentially lead to criminality. Numerous studies by researchers, including findings by Dishion and Loeber (1983) connoted substandard academic performance significantly enhances the prediction of adolescent delinquency. Khatiwada et al. (2009) discovered that 40% of all incarcerated 16- to 24-year olds in the United States are high school dropouts (p. 10). This statistic further highlights the connection between academic achievement and delinquency along with the need for academic-based interventions.

Implementing strategies that focus on the improvement of academic performance in at-risk student populations has the potential to significantly reduce the chances of adolescent

criminality. The marriage of curricula specifically designed for academically and socially imperiled youth in conjunction with increasing their access to situations compatible with academic accomplishment is crucial for effective intervention. Hawkins' and Weiss' social development model is the basis for this formula of intervention. Hawkins and Weis (1985) suggested providing a greater proportion of students with opportunities to experience success in school should hold promise for preventing delinquency (p. 86).

Effective Academic Mentorship and Intervention

Mentoring programs have yielded various results in regards to academic and behavioral improvement. Whether mentorship is formal or informal, intervention cannot rely on generic and ambiguous curriculum. Consequently, various programs have failed to produce measurable change because of the reliance on unfocused strategies. When generic, inconsistent, and unfocused mentorship is utilized, the effects of such programs are restricted. Roberts (2000) found the support offered by mentoring centers to be limited and remedial in the sense of benefitting students considered as at-risk. The majority of these programs provided inequitable assistance that serviced a minimal portion of the student population. Not to mention, in many instances, programming for mentorship has offered generic curriculum support that is incongruent with the disciplines being studied by students (Roberts, 2000). Individualized programming designed specifically for at-risk students that directly correlates with classroom and testing assessment is necessary for the improvement of grades and test scores.

Effective mentorship not only improves academic performance, but also modifies perspectives and behaviors in at-risk student populations. An imperiled student's trajectory can be transformed to one of promise when the focal point of mentoring is goal-oriented, scholastic

performance that emphasizes academic attachment and bonding (Davis, Karcher, & Powell, 2002). McDill and Natriello (1998) authored a standardized definition of the term at-risk which stresses the need for educational intervention by positing:

> Students from low-socioeconomic backgrounds, from minority groups, or whose parents are not directly involved in their education, are at-risk for educational failure-either by failing to learn while in school or by dropping out of school altogether. Over the last decade there has been a growing realization that students from minority backgrounds, low-income families, or both—those students most likely to be "at-risk''-are rapidly assuming an unprecedented share of the student population (p. 320).

Bower et al. (2009) disclosed that although mentoring programs were specifically designed for at-risk students, poor academic achievement as a precursor to delinquency transcends socioeconomic status and race. Nevertheless, at-risk adolescents possess a greater risk of exhibiting conduct that increases the likelihood of delinquency. Due to the cyclical nature of academic shortcomings within disadvantaged communities (Gofen, 2009; Halpern, 1990), preparing students for post-secondary learning should be a leading objective of mentoring programs. The provision of formal educational mentorship, inclusive of informal social coaching, may yield holistic results, capable of mitigating environmental and demographic factors that contribute to lower academic performance.

Targeting At-Risk Students

As noted, academic underachievement has the capacity to influence behaviors of adolescents regardless of socio-demographic factors; however, one would be remiss to assume a heterogeneous population of students requires the same level or type of intervention. Occurrences of low academic performance and school dropout rates are not proportionate throughout the adolescent population. Bry, Holt, and Johnson (2008) discovered black adolescents are one and a half times more likely to be high school dropouts than their white

counterparts (p. 290). Likewise, black students are not the only minorities in need of focused mentorship. The rate of Hispanic adolescents failing to complete high school is alarmingly high. Alt, Chapman, and Kaufman asserted that Hispanic students drop out of school approximately four times more often than white students (as cited in Bry et al., 2008).

As standalone statistics, these rates are disturbing, but including economic status in the at-risk equation yields an even more disheartening outlook. Adolescents that come from families whose incomes are in the lowest percentile are six times more likely to drop out compared to those in the top percentile (Alt, Chapman, & Kaufman, 2004). For this reason, minority students residing in low-income communities are systemically more predisposed to academic underachievement and resulting prosocial deficiencies.

The meager graduation rates and high percentages of dropouts among the disadvantaged population explicate the importance of increasing scholastic performance in at-risk students. Mentorship prioritizing academic achievement has the potential for improving graduation rates and the ratio of graduates that continue to college. In order to increase retention and graduation rates, educators and mentors must focus primarily on school-related factors while being cognizant of environmental and socioeconomic variables which affect learning (Coates, Sanders, & Vietze, 2002).

Creating Academic Bonds

Mentorship programming should foster and solidify bonds between the school and student by providing the uniformity, consistency, and support that is often absent in at-risk neighborhoods. Earlier studies illustrated positive attachment is causally associated with prosocial outcomes while the absence of attachment is relationally connected to antisocial

outcomes (Abbott, Battin-Pearson, Guo, Hawkins, & Hill, 2001; Abdullah, Elias, Gaik, & Uli, 2010; Bryan et al., 2012; Catalano et al., 2004). Traditionally, mentoring programs have relied heavily on the relationship between the mentor and mentee to ensure consistency; however, it is essential for mentorship to depend more on the program's framework instead of placing priority on the individual mentor's relationship with students. Connection to the curriculum is imperative since cultivating consistency can be challenging on account of programs experiencing turnover in staffing. Also, differences in mentors' levels of effectiveness often introduce inconsistencies (Cooper, DuBois, Holloway, & Valentine, 2002). Rhodes (2004) connoted mentoring as an intergenerational bond of mutual commitment, respect, identification, and loyalty; however, high turnover rates of staff inhibit the formation of intimate individual ties. Some estimates have suggested staff turnover in mentoring programs is as high as 40%. In order to combat inconsistencies in personnel and effectiveness, strategies implemented by programs must focus on the establishment of academic and occupational goals which supersede relationships with mentors.

Attachment to mentors, investment in curriculum, and a healthy academic environment is integral to the cultivation of the students' cognitions. Once these students experience success academically, their perceived competency increases, which renders the blueprint for bonding. As noted earlier, adolescents that perform poorly in school also suffer from low self-esteem among other issues. The empowerment derived from developing students' confidence in their cognitive skills is elemental to school bonding and behavioral improvements. Grossman, Resch, and Rhodes (2000) indicated that mentoring outcomes are contingent on changes in students' cognitions and mentorship cannot affect grades without the development of self-efficacy.

Bonding to school has the facility to increase positive developmental experiences, decrease negative developmental experiences, and buffer the effects of the at-risk status (Catalano et al., 2004). Moreover, it can be concluded that the promotion of healthy development and the prevention of asocial behaviors are derivatives of fostering academic bonds. Mitigating asocial behaviors during adolescence is requisite in preventing juvenile delinquency. Nonetheless, a major roadblock to positive development is elevated levels of social disorganization within disadvantaged communities which demonstrate the need for positive bonds in the lives of at-risk students.

Social disorganization in these neighborhoods creates a disconnection between the principles of the school or mentoring program and the student's community. Educational personnel may attempt to bridge this gap; however, time is better spent connecting students to the curriculum and positive environment fostered within the school. Relationships with mentors and educators are impactful and can lessen the negative influences associated with disadvantaged communities. DuBois and Rhodes (2006) suggested that relationships with teachers, guidance counselors, and mentors may facilitate the most change in at-risk students. Moreover, adolescents who are mentored by a non-familial adult are more likely to graduate from high school and engage in positive and constructive behaviors.

School bonding is elemental in scholastic improvement due to its positive influence on students' risk levels and their developmental trajectories (Abbott et al., 2001). Attachment to educational programming is not in itself the answer to the academic perils experienced by at-risk students, but is quintessential to cultivating the students' trust in their analytical skills. Once students have accepted the socialization standards of the school or program, the bonds of

attachment, commitment, and belief are solidified and students are prepared to learn the science of goal-setting (Catalano et al., 2004).

Goal Setting

Establishing unrealistic goals in unattainable timeframes not only aggravates the strain already experienced by at-risk youth, but failure stemming from poorly planned curriculum and goal setting has the potential to further exacerbate academic and behavioral issues. Students tend to perform better when goals are definitive and precise. This specificity also allows educators to provide individualized feedback to students. Creating specific and attainable goals do not inhibit students' ability to think analytically; however, learning the science of accomplishment will greatly benefit at-risk adolescents. Subsequently, when goals are specific and individualized, increased levels of motivation are fostered because the goals are viewed as challenging, but still attainable (Latham & Locke, 2002).

In order to foster a positive educational culture, students must experience winning through the accomplishment of goals. During adolescence, students possess elevated levels of sensitivity concerning their image, and resultantly, students from at-risk communities are acutely aware of their societal status. These students are not necessarily considered winners in society and are aware of this perception. As a result, many times this population of students feel particular pathways and avenues are closed to them. Mickelson (1990) studied the achievement paradox of black adolescents and discovered attitudes regarding scholarship is often the by-product of perceptions of occluded mobility, discrimination, and lowered expectations for the future. Consequently, their response is to solidify a self-enhancing reputation through non-

academic and asocial means which increases the likelihood of delinquency (Carroll, Durkin, Hattie, & Houghton, 2001).

In order to combat antisocial responses and to create a culture of achievement, goals should be challenging and designed to cater to the current skill level of students, instead of the educator's expectation of skill and proficiency. As previously noted, measurable attainment is important in at-risk adolescents due to their perceived status in society. Therefore, a primary purpose of academic intervention is not just limited to academic success, but to foster resiliency in the achievement of goals.

Intervention in which the establishment of goals provides the framework for academic success is necessary in rerouting the mentality of youth predisposed to delinquency. Carroll, Durkin, Hattie, and Houghton (1997) posited at-risk adolescents that exhibit behavioral problems place priority in goals related to their social image while prosocial youth focused more on goals related to their academic status. This illustrates that goals can influence behavior because both delinquent and non-delinquent youth possess goals; however, the redirection of goals has the capacity to redirect behaviors. Empirical data rendered by Latham and Locke (1990) supported the notion that goals influence behavior. These scholars articulated the goal-setting theory based on the premise that conscious goals regulate human behavior. Moreover, before the learning process can commence, it is imperative that educators be cognizant of the desires of the student.

Students engaged in the process of goal attainment benefit from the discipline or self-regulation required to successfully meet their desired goals. Gollwitzer, Honig, and Oettingen (2000) proposed successful goal attainment is a bi-level process in which transition occurs and the adolescent's aspirations become a binding goal. Once a binding goal is set, students must then attain the goal. This commitment to attaining goals is necessary in improving academic and

behavioral performance. Latham and Locke (1990) emphasized the importance of commitment in enhanced performance by asserting attainment without commitment will not render improvement academically or behaviorally. This highlights the importance of bonding because it is needed to increase accountability in the student. Moreover, commitment that binds students to goals is difficult to cultivate when there are minimal levels of accountability.

Self-regulation is enhanced by goals through their effects on motivation, learning, and self-efficacy (Schunk & Zimmerman, 1997). Students, and people in general, are motivated to apply the appropriate amount of effort needed to complete required tasks. During the process of goal-attainment, behaviors are modified because students' attention is diverted to the tasks, behaviors, and possible outcomes. Latham and Locke (2002) discussed the ability of goals to assist students in concentrating on tasks, pinpointing and applying applicable strategies, and tracking the progression of their goals. Again, the benefits of goal-setting are greatly enhanced when the goals are specific and unambiguous.

Dosage Effect of Mentoring

Many studies concur that effective and individualized academic intervention has the potential to improve adolescent behavior (Brigman & Campbell, 2003; Fish, Kilian, & Maniago, 2006; Kilian & Kilian, 2011); however, the amount of exposure to mentorship needed to affect behavior is less clear. In an ideal situation, all students would receive optimum exposure, but that luxury is denied by the economics of life and time. A more pragmatic approach focuses on the minimum amount of exposure required to benefit students. It is important that at-risk adolescents are at least subjected to the most minimally sufficient dosage of mentorship because short-lived or interrupted intervention may yield negative effects (Grossman & Rhodes, 2002). Similarly,

the risk levels of students must be considered in determining the adequate amount of exposure to mentorship. This perspective also emphasizes the importance of not relying on ambiguous and overly broad curriculum as the framework for mentorship since each at-risk student requires a different type and amount of intervention (Crusto et al., 2005). Understandably, students at greater risk require more exposure to programming.

Higher levels of commitment on the behalf of the student enhance the effects of mentorship on academic achievement. As these adolescents experience increased attachment to goals and curriculum, the inclusion of focused mentorship should render positive effects on their behavior. Gordon (1995) discussed these effects in his examination of black middle-school students from disorganized communities. It was discovered that youth from disadvantaged neighborhoods that displayed academic proficiency were more involved in extracurricular activities than their counterparts. Gordon's findings echoed the tenets of Hirschi's control theory which proposed that more time youth spent participating in prosocial activities resulted in less time available for misbehavior. Increased participation within the classroom is also associated with behavioral benefits. Opportunities for misbehavior are often reduced consistent with higher levels of involvement in the classroom. Heward (2003) indicated that educators who required students to actively participate in the learning process increased the likelihood of prosocial behavior within the classroom, and thusly, reinforced the culture of conformity.

CHAPTER III

THEORETICAL FRAMEWORK

The theoretical perspective of the current study emphasizes the tenets of Hirschi's social control theory. Criminologist Travis Hirschi introduced social control theory that postulated the importance of bonds in the prevention of delinquency. Hirschi (1969) proposed the antidote to delinquency could be located in the bonds individuals form to prosocial values, people, and institutions. Furthermore, these bonds control behaviors even when opportunities of criminality and deviance are presented; however, when these bonds are broken or attenuated, the odds of delinquency increase. Included in Hirschi's control theory are four interrelated connections that define the framework of relational bonds. These bonds are attachment, commitment, involvement, and belief in prosocial standards.

Hirschi (1969) understood the importance of bonds to the family in extenuating delinquency; however, due to disorganization in disadvantaged communities and households, the attachment to educational institutions is integral in modifying behaviors. Sprinthall and Sprinthall (1987) reinforced Hirschi's position by suggesting positive attachment during early adolescence is critical since this stage of development includes transitions that affect youth in a myriad of ways socially, emotionally, mentally, and physically. During this period, adolescents are particularly susceptible to emotional challenges and usually seek support from others. When weakened family or prosocial bonds are present, it is imperative for the school to provide the needed support. Again, attachment to school personnel and investment in curriculum buffers

asocial behaviors, but in order to sustain behavioral improvement through scholastic achievement, the inclusion of the remaining principles of Hirschi's control theory are paramount.

Along with attachment to school personnel, commitment to prosocial relationships is quintessential to bonding. When juveniles are committed to these relationships, they refrain from engaging in activities that could potentially jeopardize these positive associations. Adolescents are particularly sensitive to their perceived status and displaying behaviors contrary to the standards of prosocial relationships cause shame. Due to the established bond, getting caught committing a crime or act of deviance presents the negative consequence of disappointing and losing the respect of their teachers, mentors, and prosocial peers (Hirschi, 1969).

The component of involvement in the control formula is necessary because the more involved students are in their education and program-sponsored activities, the less likely they are to engage in antisocial endeavors. This is the basis for providing students with an array of activities outside of the traditional classroom setting. An effective mentoring program is one that prioritizes academic success without negating the need for positive extracurricular activities. Hirschi (1969) recognized opportunities are available for juveniles to participate in delinquent acts before and after traditional and extracurricular activities; however, involvement in programming decreases the opportunity for such acts. Even though mentors and educators are aware of this fact, they can only personally affect the behavior of students within the confines of their respective institutions.

The last element of the control theory is belief. Belief references the degree to which one complies with the principles associated with conformist behaviors. That is, when prosocial values are important to an individual, the likelihood that a person would participate in criminal activities decreases exponentially. Hirschi (1969) highlighted the link between attitudes and

behavior, but this association does not necessarily reflect the cause of criminality and delinquency. These attitudes may not unequivocally motivate people to commit crime, but prosocial attitudes constrain people from committing the crimes they otherwise would have in the absence of such social bonds.

Since the publication of Hirschi's seminal work, multiple studies testing social control theory have consistently shown the buffering effect of bonding on delinquency (Caspi, Moffitt, Silva, & Wright, 1999; Li, 2004; Maddox & Prinz, 2003; Ozbay & Ozcan, 2006). Junger-Tas (1992) concluded that bonds to school held stronger correlations to delinquency than parental bonds. In a study of high school students, Bryan et al. (2012) asserted that bonds to school and other prosocial institutions are significant protective factors against school failure and asocial behavior. Although, social control theory was introduced nearly fifty years ago, when tested, continues to demonstrate academic and behavioral benefits that often transcend socio-demographic differences (Eisele, Thomson, & Zand, 2009; Eklund et al., 2011; Lasley & Rosenbaum, 1990).

CHAPTER IV

METHODS

Data

The data for this study was derived from the school records of ninth grade students involved in the GEAR UP program in Chattanooga, TN during the 2013-2014 school year (August 2013 to June 2014). These students attended one of three high schools that were zoned for the communities with poor socioeconomic status and serviced predominately minority groups. In this study, these students are identified as being at risk for educational failure, and research found that this failure was largely due to disorganization within their communities, learning disabilities, behavioral issues, and other social factors that jeopardize their educational trajectories (Bry et al., 2008). Students identified as being at risk also possess elevated chances of becoming delinquent through their proclivity for engaging in asocial behavior (Boland et al., 2006).

The GEAR UP program rendered interventions for students who were recognized to retain a high risk of academic failure, and the records of all ninth grade students in the GEAR UP program were examined to investigate the influence of academic achievement on asocial school behavior. This study identified various independent variables deemed integral to the onset of asocial behavior that subsequently resulted in delinquency in previous studies (Fergusson & Horwood, 1995; Li, 2004; Maddox & Prinz, 2003; Patterson & Yoerger, 1999).

The data employed in the study was collected by the Public Education Foundation (PEF) in Chattanooga, TN. The PEF is the evaluation and assessment affiliate of the Hamilton County Department of Education (HCDE). Students' demographic information, attendance, grades, test scores, suspensions, expulsions, and infraction records were included in the data. Information regarding students' participation hours was also introduced to this study to estimate the effect of mentoring amount. A total of 267 students joined the GEAR UP program in 2013; however, 31 student records were excluded from the study due to missing grade point average (GPA). Therefore, the final sample includes 236 ninth grade students in the current study.

Measures

Dependent Variables

As noted earlier, students that engage in asocial behavior are more susceptible to the onset of delinquency, and research has indicated that as the seriousness and longevity of students' involvement in asocial behavior increases, the likelihood of juvenile criminality also increases (Abdullah et al., 2010; Bechtold, Cauffman, Monahan, & Vanderhei, 2014). In order to estimate determinants of asocial school behavior and school delinquency, two dependent variables, *asocial school behavior* and *school suspension*, are employed. *Asocial school behavior* is defined as violations of rules established by the schools and the HCDE, which occurred on school properties, school buses, and at school-sponsored activities. This includes both major and minor rule violations such as fighting, forgery of official documents, dress code violations, disrespect to staff, indecent language, and other rule infractions. *Asocial school behavior* is dummy-coded with two attributes, no (0) and yes (1). Students without any rule violations listed in their school records are coded as "no," and others with rule violations are coded as "yes."

School suspension refers to students being suspended for egregious and/or habitual school code infractions that occurred on school properties, school buses, and at school-sponsored activities. The HCDE considered these rule violations as being more serious in nature (Hamilton County Department of Education, 2014) and included delinquent acts such as vandalism, larceny, sexual harassment, sexual assault, drug/alcohol possession, bullying, truancy, aggravated assaults, nonsexual harassment, threats, possession of weapons, and other major rule violations. Suspended students, due to the separation from prosocial school bonds, are more susceptible to the onset of serious delinquency resulting from the reinforcement of negative values existent in disadvantaged neighborhoods (Bechtold et al., 2014; Costenbader & Markson, 1998; Fabelo, 2011). *School suspension* is dummy coded, no (0) and yes (1). Students without any documented suspensions are indicated as not engaging in serious school delinquency and students with documented suspensions are indicated as participating in serious school delinquency.

Independent Variables

This study introduces a total of eighteen independent variables that were commonly employed in previous research regarding the effects of academic achievement and mentorship on the modification of asocial behavior in adolescents (Brainerd & Reyna, 2007; Coates et al., 2002; Cohen et al., 2011; Greenbaum, Massey, & Yampolskaya, 2006; Grossman et al., 2000; Shane, 2005). The independent variables are *afterschool intervention*, *in-school assistance*, *academic intervention*, *financial aid preparation*, *mentorship*, *summer involvement, parental involvement*, *college exposure*, *school involvement, school commitment, academic achievement, math performance, English performance, household type, socioeconomic status, gender, race,* and

age. Similar to previous studies designed to represent elements of social control theory in an educational context (Bryan et al., 2012; Catalano et al., 2004; Ozbay & Ozcan, 2006), these variables are categorized into three types: bonding, academic performance, and individual-level risk.

Bonding.

Bonding variables estimate relationships or connections that espouse students to prosocial people and/or institutions (Morrison & O'Farrell, 2003). Multiple scholars including Hawkins, Monahan, and Oesterle (2010) asserted that these connections influence positive behavioral and academic outcomes through the establishment of a student's "stake" in conforming to the norms and values of the school (p. 3). According to the social control theory, socialization, facilitated through prosocial bonds, fosters self-control and reduces the inclination to engage in asocial behavior (Hirschi, 1969). Thus, bonding is integral in preventing the onset of juvenile delinquency (Caspi et al., 1999), due to its buffering effect on risks (i.e. academic failure) in student groups (Abbott et al., 2005). Likewise, Libbey (2004) posited that as a negative predictor of asocial behavior, school bonding is an appropriate target for intervention. The current study investigates the effects of bonds to the GEAR UP program and school on student behavior. Each student in the GEAR UP program had the opportunity to participate in intervention activities including after-school programming, in-school curriculum assistance, academic planning, financial aid advisement, and comprehensive mentorship. The program also provided training for the parents of students regarding college preparation and the availability of educational resources.

There are ten bonding variables. First, *afterschool intervention*, refers to the amount of participation in after-school activities offered by the GEAR UP program and is measured as the total number of after-school activity hours that sampled students received during the 2013-2014 school year.

The variable, *in-school assistance,* is defined as student participation in math, language arts, science, and other school-related coursework interventions delivered by GEAR UP staffs at school. *In-school assistance,* measured as a continuous variable, indicates the total number of coursework assistance hours which students received in the aforementioned subject areas.

The GEAR UP program conducted academic planning and advisement sessions to assist students in fulfilling academic requirements. The program also provided rigorous academic training through supplemental coursework sessions designed to decrease the need for remedial classes at the college level. Student participation hours in these sessions were summated and employed as the variable, *academic intervention.*

Financial aid preparation is a continuous variable measured as the sum of hours students attended financial aid counseling sessions in preparation for post-secondary education. The variable, *mentorship*, defined as mentorship through an ongoing supportive relationship with a trained, caring adult or older student, is estimated by totaling all mentorship and supportive service hours rendered to each student.

The GEAR UP program, in an effort to increase college awareness/preparedness, provided students with an opportunity to visit a post-secondary institution. The variable, *college exposure,* measured as a dichotomous variable, denotes whether students participated in college visits during the school year (1) or not (0).

Summer involvement, measured as a dichotomous variable, indicates whether or not students participated in academic enrichment sessions rendered by the GEAR UP program during the summer (June 2013 to August 2013) prior to the start of the school year. Students that did not attend these sessions are identified as not involved (0) and students who attended are identified as being involved (1).

While the aforesaid variables are introduced to estimate student bonds to the GEAR UP program, the variable*, parental involvement* is introduced to measure parent participation in educational activities designed specifically for the parents of students in the GEAR UP program. Various studies found that parental involvement in school and intervention programming is positively associated with prosocial behavior and academic achievement in student groups (Bates et al., 2004; Gibson & Jefferson, 2006; Hill & Taylor, 2004; Marschall, 2006). During these sessions, parents received information on college preparation, college admissions requirements, student coursework, post-secondary financing, and educational resources. The variable, *parental involvement*, is dummy coded with the attributes not involved (0) and involved (1).

School involvement, is introduced as a continuous variable in this study. During the 2013-2014 academic year, schools were in session for a total of 168 days.[1] *School involvement* is measured as the total number of absences for each student and is employed as a measure of students' bonds to school.

In order to graduate from high school, students must complete 22 course credits (Tennessee Department of Education, 2015). The accruement of these credits commences in the 9th grade and is attained through the end of the 12th grade. During these four grade levels, students are expected to earn an average of five to six credits per school year. Thus, the last

[1] Classes are normally in session for 180 days; however, school closings due to inclement weather reduced this number (Hamilton County Department of Education, 2014).

bonding variable, *school commitment*, measured as a dichotomous variable, denotes whether or not students earned the expected amount of credits. Students earning less than five credits during the school year are classified as not committed (0) and students with five or more credits are classified as being committed (1).

Academic performance.

The independent variables, *academic achievement, math performance*, and *English performance* are used to estimate the scholastic performance of students. *Academic achievement* is defined as a student's grade point average (GPA), based on a 4.0 scale, at the completion of the 2013-2014 school year with higher GPA's indicating better academic performance.

Students attending HCDE schools are required to complete two semesters of math and one mandatory English class during ninth grade. In the current study, the average of both numeric grades in math courses was computed to determine the math grade for the year. The HCDE considers students to be academically proficient when a final grade of 85 (out of 100) or above is earned in a subject area. With this standard, *math performance* is measured as a dichotomous variable, indicating whether or not students were proficient in math. *English performance,* determined by the final numeric grade at the end of the course, is measured as a dichotomous variable indicating student proficiency in English class. Students with final scores below 85 are identified as not proficient (0) and students scoring 85 or better are identified as being proficient (1).

Individual-level risk.

Individual-level risk characteristics have consistently shown an effect on academic/behavioral outcomes (Boulerice, Pagani, Vitaro, & Tremblay, 1999; Cohen et al., 2011; Elder, Merten, & Wickrama, 2005). Characteristics such as household structure, gender, race/ethnicity, age, and socioeconomic status are integral in the development of educational deficiencies and delinquency in at-risk youth groups (Abdullah et al., 2010; Bower et al., 2009; Cohen et al., 2011; Elliott et al., 1996). Numerous studies concerning the impact of household structure indicated that youth living in single parent homes are more likely to participate in asocial behavior and more serious delinquency while experiencing less success academically than their counterparts (Apel & Kaukinen, 2008; Bain, Boersma, & Chapman, 1983; Brown & Demuth, 2004).

Household structure is denoted by using the variable, *household type*. *Household type* is defined as residing in a home with one parent or two parents, and homes with one parent as the head are dummy coded single-headed household (0) and homes with two parents are coded two-headed household (1). *Household type* is drawn from records provided by the PEF, and students' records either listed one or two adult names for each student as the parent(s). *Gender* is dummy coded male (0) and female (1). The schools attended by students in the GEAR UP program serviced a predominately African-American population. To reflect this demographic composition, the variable, *race,* is dichotomized into black (0) and non-black (1). *Age*, is the student's age in years at the end of the 2013-2014 school year.

Socioeconomic status (*SEStatus*) is measured as a dichotomous variable with the attributes lower class upper (0) and lower class lower (1). As noted earlier, students in the GEAR UP program attended schools zoned for communities with poor socioeconomic status, and

previous studies found that students from families with incomes in the lowest percentile were more likely to experience academic failure and behavioral problems (Alt et al., 2004; Catalano, Hemphill, Herrenkohl, Plenty, & Toumbourou, 2014; McLoyd, 1998). In this study, students were classified into two groups to estimate whether differences in household income levels, within the lower class, influenced the probability of asocial and delinquent school behavior. *SEStatus* is used to estimate the percentage of households in students' neighborhoods with annual incomes 50% below the poverty level[2]. This study gathered neighborhood poverty level information from the website, city-data.com and zip codes of students' residences were used to indicate their socioeconomic status. Students who lived in neighborhoods with less than 20% of households earning annual incomes 50% under of the poverty threshold are classified as lower class-upper and others in neighborhoods with more than 20% of households earning annual incomes under 50% of the poverty level are classified as lower class-lower.

Data Preparation

In preparation for preliminary and logistic regression analyses, data were inspected for potential outlier problems and missing values. After eliminating outliers, it was discovered that six independent variables which included *school involvement*, *household type*, *SEStatus*, *English performance*, *math performance*, and *school commitment* had missing values. A missing data analysis was performed to verify the extent of missingness and a summary of these findings is presented in Table 1.

[2] The federal government calculates the poverty level based on household size and this threshold is updated annually by the U.S. Census Bureau (DeNavas-Walt, Proctor, & Smith, 2014). Poverty level information gathered in the current study is based on these guidelines.

Table 1: Variable Summary of Missing Cases

Variable	*Values Missing*	*Percent Missing*
School involvement	1	0.42
Household type	12	5.08
SEStatus	17	7.20
English performance	16	6.78
Math performance	19	8.05
School commitment	8	3.39

Considering the patterns of missingness, data were determined to be missing completely at random (MCAR). Data are MCAR when the pattern of missing values are not dependent on the data values, and in this study, an insignificant value (p= .83) produced from Little's MCAR[3] test confirmed this conclusion. Although MCAR missingness is ignorable and allows for other methods such as listwise deletion to handle missing data (Allison, 2001; Graham, 2012), disregarding or excluding data increases the risks of biased and/or insignificant results (Olsen & Schafer, 1998; Pallant, 2007; Wagner, 2011).

In order to address missing data without sacrificing statistical power, multiple imputation (MI) is recommended for MCAR (Allison, 2001; Graham, 2012). Multiple imputation (MI) is a statistical method commonly performed with SPSS and other statistical software to compensate for missing data in a manner resulting in valid statistical inference (Figueredo, McKnight, McKnight, & Sidani, 2007; Graham, 2012). Due to the relatively small percentage of missing data[4] and arbitrary patterns of missingness in the current study, the implementation of multiple

[3] The null hypothesis of Little's MCAR test is the data are missing completely at random (Little, 1988). Since the result of this test is not significant (p> .05), the null hypothesis is not rejected indicating data are MCAR.
[4] As is the case in this study, MI results are most accurate when there is less than 10% missing data (Royston, 2004).

imputation with the Markov Chain Monte Carlo (MCMC)[5] approach is appropriate (Allison, 2002; Graham, 2009). Utilizing MI for this type of missingness is advantageous because it renders unbiased parameter estimates (Graham, 2009). Additionally, unlike other methods used to address missing data (i.e. mean value replacement, listwise deletion, etc.), accurate representation of missing data uncertainty, computed through a simulation-based procedure, is provided in MI by replacing missing values with a set of plausible values based on their predictability distribution (Graham, 2009; Olsen & Schafer, 1998). For these reasons, MI is recommended for handling missing data (Abraham & Russell, 2004; Allison, 2002; Figueredo et al., 2007; Graham & Schafer, 2002).

As suggested, five imputed datasets which include pooled estimates for coefficients were generated during the imputation process (Maydeu-Olivares & Millsap, 2009). Missing data accounted for was less than 10% in the current study and multiple scholars have concurred that five imputed datasets are sufficient for small amounts of missing data (Allison, 2003; Graham, 2009; Graham & Schafer, 2002; Rubin & Schenker, 1986). The pooled estimates across the imputed datasets were used for further analyses.

Statistical Analysis

The logistic regression method is employed in the current study. Logistic regression analysis examines the influence of various independent variables (interval or categorical) on dummy dependent variable(s). The objective of this type of analysis is to find the most parsimonious model that correctly predicts the probability of the dependent variable(s). A major

[5] Markov Chain Monte Carlo (MCMC) method is recommended for data with arbitrary missingness (monotonic or non-monotonic) and models with categorical variables (Azur, Frangakis, Leaf, & Stuart, 2011; Figueredo et al., 2007; Graham, 2009).

advantage of logistic regression is its robustness to violations of normality, and due to the asymmetrical distribution of school rule infractions in student groups, skewedness is a common concern in studies of this nature (Boland et al., 2006).

Logistic regression is well suited to estimate the likelihood of the non-reference event of dependent variables. Hence, a logistic model is fitted to this data to examine the relationship between a set of conditions and the probability of student involvement in asocial and delinquent school behavior. When a logistic regression is calculated, (*b*) values are generated to represent values for the regression equation used for predicting the dependent variable from the independent variables. By exponentiating (*b*), an odds ratio is created and this measure quantifies the size of effect of independent variables on the odds of membership in the non-reference group. This conversion of (*b*) to *exp* (*b*) is the preferred effect size measure for comparing independent variables in logistic regression.

CHAPTER V

FINDINGS

The current study analyzed the influence of social bonding, academic performance, and individual-level risk variables in the prediction of asocial school behavior and delinquency among middle-school students. Statistical analyses of descriptive statistics, frequency distributions, and correlational data were conducted along with logistic regression to assess these relationships and predict group membership. All analyses were performed with Statistical Package for the Social Science v22 (SPSS) and the results are discussed in the following sections.

Descriptive Statistics and Frequency Distributions

First, the descriptive statistics of variables were examined and presented in Table 2. Of the 236 sampled students, it was found that 144 students (61%) engaged in some forms of asocial school behavior, and almost half (49.2%) were suspended due to involvement in serious school delinquency. The descriptive analysis of the bonding variables revealed that on average, the GEAR UP program delivered 3.6 hours of after-school intervention (*SD*= 9.25), 52.1 hours of in-school assistance (*SD*= 48.12), 8.5 hours of academic intervention (*SD*= 13.91), almost an hour (*M*= 0.9, *SD*= 1.36) of financial aid preparation, and 64.2 hours of mentorship (*SD*= 57.58) to each student. This study also found that 47.9% of students participated in at least one field trip to a college campus, 14.4% of parents completed parental training sessions, and one-fifth of

students were involved in summer enrichment sessions. Table 2 also shows that students missed an average of nearly 16 days (*M*= 15.9, *SD*= 17.87) from school and most (93.4%) were committed to school.

With regards to academic performance, the mean GPA was 2.496 (*SD*= .95). Students' performance in math class indicated 41.9% of students were proficient, while 54.1% of them were proficient in English class.

The analysis of individual-level risk variables demonstrated that 54.5% of students resided in single-parent households. African-Americans (89.8%) was the predominant racial group and the average age of students was 15.9 years (*SD*= .71). Females (52.5%) comprised a larger segment of the sample and about two-thirds of students (65.8%) lived in neighborhoods in which the majority of households earned annual incomes below half of the poverty threshold.

Table 2: Descriptive Statistics of Dependent and Independent Variables for 9th Graders

Variable	N	% (valid)	Mean	SD
Dependent Variables				
Asocial School Behavior				
No*	92	39.0		
Yes	144	61.0		
School Delinquency				
No*	120	50.8		
Yes	116	49.2		
Independent Variables				
Bonding Measures				
After-School Intervention			3.642	9.245
In-School Assistance			52.070	48.118
Academic Intervention			8.516	13.907
Financial Aid Preparation			0.919	1.356
Mentorship			64.186	57.579
College Exposure				
Not Exposed*	123	52.1		
Exposed	113	47.9		
Parental Involvement				
Not Involved*	202	85.6		
Involved	34	14.4		
Summer Involvement				
Not Involved*	188	79.7		
Involved	48	20.3		
School Involvement			15.902	17.870
School Commitment				
Not Committed*	15	6.6		
Committed	213	93.4		
Academic Performance Measures				
Academic Achievement			2.496	0.948
Math Performance				
Not Proficient*	126	58.1		
Proficient	91	41.9		
English Performance				
Not Proficient*	101	45.9		
Proficient	119	54.1		
Individual-level Risk Measures				
Household Structure				
Single-Headed*	122	54.5		
Two-Headed	102	45.5		
Race/Ethnicity				
African-American*	212	89.8		
Caucasian	14	5.9		
Hispanic	9	3.8		
Other	1	0.4		
Age			15.509	0.711
Gender				
Male*	112	47.5		
Female	124	52.5		
Socioeconomic Status				
Lower class upper*	75	34.2		
Lower class lower	144	65.8		
N=236				

ABBREVIATION: SD= Standard Deviation
*= Reference Category

Bivariate Analysis

In the next analysis, zero-order correlations between independent variables and dependent variables were examined prior to conducting logistic regression. A Pearson correlation matrix of variables was performed per dependent variable to check for statistically significant relationships between variables and screen for multicollinearity. Depicted in Tables 3 and 3A, these matrices indicate the presence of multiple significant correlations and the satisfaction of the multicollinearity assumption as no correlation exceeded (r= .70).

Correlations were first conducted on the dependent variable, *asocial school behavior*, and eight independent variables including *academic achievement*, *gender*, *race*, *school involvement*, *financial aid assistance*, *summer involvement*, *math performance*, and *English performance* were significantly related. These correlations were found to be weak to moderate in strength. *Academic achievement* (r= -.462, p< .01), *gender* (r= -.238, p< .01), and *race* (r= -.177, p< .01) held inverse correlations with *asocial school behavior* indicating that students with higher GPA's were significantly associated with lower chances of asocial behavior, whereas males and African-Americans were more likely to violate school rules. Other significant correlations showed positive directionality including the association with *school involvement* (r= .255, p< .01) which indicated that students with fewer absences were less likely to engage in asocial behavior. Positive associations with *financial aid assistance* (r= .095, p< .01), *summer involvement* (r= .059, p< .05), *math performance* (r=.170, p< .01), and *English performance* (r= .253, p< .01) were contrary to the expectation given that better academic performance and increased participation in school or program-sponsored activities are widely regarded as protective factors against asocial behavior (Gottfredson, Najaka, & Wilson, 2001; Kilian &

Kilian, 2011; Linke, Strambler, & Ward, 2013; Maddox & Prinz, 2003; Roby, 2004). These findings indicated that increased participation in financial aid information sessions was associated with greater chances of asocial behavior. Further, students who attended summer enrichment sessions were more likely to violate school rules, as well as those who were proficient in either math or English class.

With regard to the dependent variable, *school suspension*, the correlation matrix indicates that thirteen of the eighteen independent variables including *academic achievement*, *academic intervention*, *school commitment*, *college exposure*, *household type*, *gender*, *race*, *school involvement*, *in-school assistance*, *financial aid preparation*, *summer involvement*, *math performance*, and *English performance* held significant correlations ranging from weak to strong in strength. Seven of the aforesaid variables, which included *academic achievement* (r= -.510, p< .01),*academic intervention* (r= -.071, p< .01), *school commitment* (r= -.056, p< .05), *college exposure* (r= -.076, p< .01), *household type* (r= -.069, p< .01), *gender* (r= -.255, p< .01), and *race* (r= -.134, p< .01) were inversely correlated with *school suspension*. These results indicated higher GPA's and increased participation in academic intervention activities significantly reduced students' likelihood of being suspended. Those who earned five or more course credits along with students who participated in a college visit were less likely to be suspended. Likewise, a lower likelihood of suspension was significantly associated with students from two-parent households, female students, and non-African-American students.

Other significant correlations showed positive directionality. *School involvement* (r= .352, p< .01), a measure school attendance, indicated that the likelihood of suspension was significantly raised as the number of absences increased. Paralleling the results found with the previous dependent variable, several variables including *in-school assistance* (r= .058, p< .05)

and *financial aid preparation* ($r = .091$, $p < .01$) held unexpected positive correlations demonstrating that increased participation in these activities increased the likelihood of suspension. Other unanticipated positive associations included *summer involvement* ($r = .055$, $p < .05$), *math performance* ($r = .276$, $p < .01$), and *English performance* ($r = .308$, $p < .01$) which indicated that students who participated in summer sessions, as well as those classified as being proficient in either math or English class, retained a greater likelihood of being suspended from school.

Table 3:

Bivariate Correlations of Independent Variables and Asocial School Behavior

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
X1 *Asocial School Behavior*																			
X2 *After-School Intervention*	-.016																		
X3 *In-School Assistance*	.042	.321**																	
X4 *Academic Intervention*	-.033	.663**	.156**																
X5 *Financial Aid Preparation*	.095**	.026	.103**	.152**															
X6 *Mentorship*	.045	-.048	-.024	.028	.006														
X7 *College Exposure*	-.017	-.038	.036	.199**	.533**	.184**													
X8 *Summer Involvement*	.059*	-.034	.064*	.085**	.089**	.318**	.316**												
X9 *Parental Involvement*	-.018	.083**	-.012	.003	.011	.092**	-.079**	.062*											
X10 *School Involvement*	.255**	.015	-.065*	-.045	-.038	.044	-.181**	-.054*	.142**										
X11 *School Commitment*	-.015	-.033	.060*	.040	.003	.017	.049	.089**	-.101**	-.229**									
X12 *Academic Achievement*	-.462**	-.023	.083**	.120**	-.044	.012	.174**	.071**	-.096**	-.576**	.176**								
X13 *Math Performance*	.170**	.086**	-.073**	-.006	.029	-.105**	-.147**	-.099**	.124**	.283**	-.112**	-.567**							
X14 *English Performance*	.253**	-.026	-.027	-.122**	.041	-.058*	-.199**	-.168**	.039	.288**	-.097**	-.575**	.519**						
X15 *Household Type*	-.050	-.072**	.073**	-.026	.079**	.001	.135**	.024	-.106**	-.090**	.022	.036	-.113**	-.063*					
X16 *Gender*	-.238**	-.078**	.051	-.002	-.060*	-.058*	.028	.122**	.003	-.053*	.199**	.257**	-.201**	-.198**	.102**				
X17 *Race*	-.177**	.010	.040	.049	-.119**	.035	-.172**	-.131**	-.013	.150**	.019	.067*	-.105**	-.023	-.046	.083**			
X18 *Age*	.010	.018	-.053*	.062*	-.097**	.093**	-.065*	-.051	.148**	.073**	-.020	-.065*	.096**	.017	-.015	-.025	.046		
X19 *SEStatus*	.019	.072**	-.058*	.070**	.065*	.033	.115**	.153**	.060*	-.086**	-.026	.026	-.046	.078**	.063*	-.008	-.171**	-.050	

**p< .05; **p< .01 (2-tailed)*

Table 3A:

Bivariate Correlations of Independent Variables and School Suspension

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
X1 *Asocial School Behavior*																			
X2 *After-School Intervention*	-.011																		
X3 *In-School Assistance*	.058*	.321**																	
X4 *Academic Intervention*	-.071**	.663**	.156**																
X5 *Financial Aid Preparation*	.091**	.026	.103**	.152**															
X6 *Mentorship*	.046	-.048	-.024	.028	.006														
X7 *College Exposure*	-.076**	-.038	.036	.199**	.533**	.184**													
X8 *Summer Involvement*	.055*	-.034	.064*	.085**	.089**	.318**	.316**												
X9 *Parental Involvement*	.017	.083**	-.012	.003	.011	.092**	-.079**	.062*											
X10 *School Involvement*	.352**	.015	-.065*	-.045	-.038	.044	-.181**	-.054*	.142**										
X11 *School Commitment*	-.056*	-.033	.060*	.040	.003	.017	.049	.089**	-.101**	-.229**									
X12 *Academic Achievement*	-.510**	-.023	.083**	.120**	-.044	.012	.174**	.071**	-.096**	-.576**	.176**								
X13 *Math Performance*	.276**	.086**	-.073**	-.006	.029	-.105**	-.147**	-.099**	.124**	.283**	-.112**	-.567**							
X14 *English Performance*	.308**	-.026	-.027	-.122**	.041	-.058*	-.199**	-.168**	.039	.288**	-.097**	-.575**	.519**						
X15 *Household Type*	-.069**	-.072**	.073**	-.026	.079**	.001	.135**	.024	-.106**	-.090**	.022	.036	-.113**	-.063*					
X16 *Gender*	-.255**	-.078**	.051	-.002	-.060*	-.058*	.028	.122**	.003	-.053*	.199**	.257**	-.201**	-.198**	.102**				
X17 *Race*	-.134**	.010	.040	.049	-.119**	.035	-.172**	-.131**	-.013	.150**	.019	.067*	-.105**	-.023	-.046	.083**			
X18 *Age*	.048	.018	-.053*	.062*	-.097**	.093**	-.065*	-.051	.148**	.073**	-.020	-.065*	.096**	.017	-.015	-.025	.046		
X19 *SEStatus*	-.048	.072**	-.058*	070**	.065*	.033	.115**	.153**	.060*	-.086**	-.026	.026	-.046	.078**	.063*	-.008	-.171**	-.050	

**p< .05; **p< .01 (2-tailed)*

Logistic Regression Analysis

Goodness of Fit

In regression models, chi-square tests are used to provide statistical evidence of the presence of relationship between the dependent variable and independent variables. The chi-square test, Hosmer and Lemeshow (H-L), is employed in the current study to evaluate the predictive capacity of logistic models. Considered to be more robust than other chi-square tests (Baker, Ponton, & Rovai, 2013; Hjort & Hosmer, 2002; Hosmer & Lemeshow, 2004), the H-L test is the preferred goodness of fit measure for binary logistic models (Garson, 2011). For a model to be classified as well-fitted, an H-L test statistic ($p > .05$) is the standard, which indicates the model prediction is not significantly different from observed values.

A logistic regression was conducted with each categorical dependent variable to obtain the predictive odds of membership in the non-reference group. In order to evaluate whether academic performance, bonds with school, and participation in GEAR UP program activities significantly impact both asocial behavior and delinquency in student groups, two logistic models are presented in the current study. Model 1 includes the dependent variable, *asocial school behavior,* and *school suspension* is included in Model 2. This differentiation is paramount since strong associations between early misconduct and delinquent behavior have been empirically supported (Alati et al., 2011). Further, asocial behavior is precursory to delinquency (Moffitt, 1993) and understanding the mediating effect of these bonds on each type of behavior is the primary purpose of this study. Presented in Tables 4 and 4A, the H-L test statistic[6] generated

[6] Pooled estimates of chi-square test statistics are not available for MI in SPSS. Instead, SPSS generated a chi-square statistic for each imputed dataset in both models. It is acceptable to use an averaged test statistic for reporting

for Model 1 (χ^2 (8) = 4.345, p= .806) and Model 2 (χ^2 (8) = 13.416, p= .240) is non-significant (p> .05) demonstrating that estimates fit the data at an acceptable level. The Nagelkerke R^2 statistic for Model 1 and Model 2 is .404 and .465 respectively denoting that 40.4% of variance is explained with Model 1 and 46.5% with Model 2. Also, the prediction success of Model 1 is 76.18% and 78.56% for Model 2, which is an improvement over null models (61% and 50.8% respectively).

Multivariate Analysis

A binary logistic regression was performed for Model 1 and Model 2 in which all variables were entered simultaneously. Results from Model 1 (see Table 4) show that three variables including *academic achievement*, *race*, and *gender* significantly influence student participation in asocial behavior at school, when holding all other variables constant. The first variable, *academic achievement* (χ^2 (1) = 20.188, p< .01), significantly contributes in predicting rule violations by students as those with better GPA's are less likely to violate school rules. In other words, for each unit increase in GPA, there is an associated 77% decrease in the odds of student participation in asocial behavior. *Race* (χ^2 (1) = 4.647, p< .05), is significant indicating that African-American students are nearly four times more likely to violate school rules than others. Lastly, *gender* (χ^2 (1) = 5.026, p< .05), is significant indicating that female students are 120% more likely than their male counterparts to engage in asocial behavior at school.

Controlling for all other variables, Model 2 (see Table 4A) indicates that three variables including *academic achievement*, *school involvement*, and *gender* significantly contribute in the prediction of school suspension. Consistent with literature presented earlier, *academic*

---

significance in imputed models (Allison, 2000; Patrician, 2002). In this study, the mean H-L test statistic for imputed datasets was computed to estimate goodness of fit.

achievement (χ^2 (1) = 13.519, p< .001), a significant predictor of school suspension, indicates that students with better GPA's are less likely to be suspended from school due to delinquent behavior. That is, a one unit increase in GPA, reduces the odds of suspension by approximately 67%. *School involvement* (χ^2 (1) = 7.747, p< .01) is significant indicating that each day missed from school increases the odds of suspension by 5.6%. As for the variable, *gender* (χ^2 (1) = 6.760, p< .05), results indicate that female students are 149% more likely to be suspended than male students. It is important to note that although several bonding variables were significantly associated with *school suspension* at the bivariate level, only marginal evidence of influence is found with the sole bonding variable, *summer involvement* (χ^2 (1) = 3.832, p< .05) in logistic regression. At this level, students who attend summer enrichment sessions are nearly 64% less likely to be suspended than others.

Table 4:

Logistic Regression Analysis for Model 1

(N= 236)	Pooled						Original					
Variables	β	S.E.	Wald	df	Sig.	Exp (β)	β	S.E.	Wald	df	Sig.	Exp (β)
Academic Achievement	-1.488	.341	20.188	1	.000**	.226	-1.454	.341	15.085	1	.000**	.226
Math Performance	.936	.488	4.672	1	.058	2.550	1.079	.510	4.479	1	.034*	2.943
English Performance	-.060	.434	.048	1	.891	.942	.036	.481	.006	1	.940	1.037
After-School Intervention	-.032	.026	1.511	1	.219	.968	-.034	.026	1.605	1	.205	.966
In-School Assistance	.005	.004	1.930	1	.176	1.005	.005	.004	1.309	1	.253	1.005
Academic Intervention	.017	.017	.975	1	.325	1.017	.021	.017	1.516	1	.218	1.022
Financial Aid Preparation	.092	.156	.346	1	.558	1.096	.014	.170	.007	1	.934	1.014
Mentorship	.001	.003	.087	1	.769	1.001	.000	.004	.004	1	.947	1.000
College Exposure	.140	.466	.090	1	.764	1.150	.343	.499	.472	1	.492	1.409
Parental Involvement	.518	.494	1.111	1	.294	1.679	.320	.542	.349	1	.555	1.377
Summer Involvement	-.503	.487	1.082	1	.302	.605	-.525	.519	1.023	1	.312	.591
School Involvement	.022	.018	1.539	1	.216	1.022	.005	.004	1.309	1	.253	1.005
School Commitment	-.550	.888	.518	1	.536	.577	17.788	14572.986	.000	1	.999	3095726.85
Household Structure	.295	.347	.769	1	.395	1.343	.446	.379	1.385	1	.239	1.562
Race	-1.488	.644	4.647	1	.032*	3.988	1.216	.681	3.188	1	.074	3.373
Age	.018	.247	.006	1	.943	1.018	-.135	.265	.259	1	.611	.874
Gender	.789	.353	5.026	1	.025*	2.202	1.050	.389	7.294	1	.007**	2.858
Socioeconomic Status	-.073	.395	.180	1	.853	.930	-.115	.400	.082	1	.774	.892
Constant	1.155	4.077	.081	1	.777	3.174	3.356	4.425	.575	1	.448	28.680
*$p < .05$; **$p < .01$												
Nagelkerke R^2	.		.404						.398			
Hosmer-Lemeshow χ^2			.806						.762			

Table 4A:

Logistic Regression Analysis for Model 2

(N= 236)	Pooled						Original					
Variables	β	S.E.	Wald	df	Sig.	Exp (β)	β	S.E.	Wald	df	Sig.	Exp (β)
Academic Achievement	-1.109	.308	13.519	1	.000**	.330	-1.423	.383	13.817	1	.000**	.241
Math Performance	.268	.475	.552	1	.573	1.308	.297	.514	.333	1	.564	1.346
English Performance	-.193	.438	.288	1	.659	.824	.218	.493	.196	1	.658	1.244
After-School Intervention	.003	.043	.010	1	.940	1.003	-.010	.046	.051	1	.821	.990
In-School Assistance	.006	.004	2.394	1	.126	1.006	.005	.004	1.295	1	.255	1.005
Academic Intervention	-.025	.037	.471	1	.494	.975	.012	.040	.093	1	.760	.988
Financial Aid Preparation	.239	.166	2.080	1	.150	1.270	.119	.190	.394	1	.530	1.127
Mentorship	.001	.003	.101	1	.751	1.001	.001	.004	.053	1	.818	1.001
College Exposure	.485	.468	1.076	1	.300	1.625	.591	.536	1.214	1	.271	1.806
Parental Involvement	.490	.499	.972	1	.326	1.632	.270	.572	.224	1	.636	1.311
Summer Involvement	-1.020	.526	3.832	1	.052	.361	-1.008	.590	2.914	1	.088	.365
School Involvement	.054	.020	7.747	1	.006**	1.056	.065	.024	7.633	1	.006**	1.005
School Commitment	-.711	.938	.893	1	.450	.491	17.720	13535.724	.000	1	.999	9649085.73
Household Structure	.293	.355	.736	1	.409	1.340	.406	.409	.985	1	.321	1.501
Race	1.337	.747	3.211	1	.073	3.807	1.174	.814	2.082	1	.149	3.236
Age	.018	.247	.185	1	.943	1.018	-.081	.291	.083	1	.773	.920
Gender	.912	.353	6.760	1	.010*	2.490	1.145	.403	8.082	1	.004**	3.143
Socioeconomic Status	.246	.397	.607	1	.537	1.278	.354	.418	.716	1	.398	1.425
Constant	-1.701	4.117	.171	1	.680	.183	1.723	4.716	.134	1	.715	5.603

*$p < .05$; **$p < .01$*

Nagelkerke R^2	.	.465		.516
Hosmer-Lemeshow χ^2		.240		.524

CHAPTER VI

DISCUSSION

Framed within prior research and theory, the current study attempted a partial test of Hirschi's social control theory concentrating on two specific bonds: involvement and commitment. Recall the five central research questions that guided this inquiry attempted to answer if (1) involvement in specific GEAR UP program activities mitigates levels of asocial or serious school delinquency, (2) increased academic achievement lessens student engagement in asocial or delinquent school behavior, (3) higher number of course credits earned mitigates levels of asocial or delinquent school behavior, (4) higher achievement in specific school curriculum (i.e., math grade) mitigates levels of asocial or serious school delinquency, and (5) lower incidences of absences buffer asocial or delinquent school behavior in student groups. Prior tests of social control theory indicate increased bonding to school and other prosocial institutions mediates delinquency and maladaptive behaviors (Abbott et al., 2005; Bry et al., 2008; Bryan et al., 2012; Cheng, 2012; Crump et al., 1999; Kilian & Kilian, 2011); however, these studies have limitations, which in turn, provided the impetus for this research.

The rationale for this study centers on those limitations which demonstrate: (1) the need to examine the application of social control theory in at-risk, minority student groups, (2) the need to investigate the behavioral impact of the GEAR UP program, (3) the need to examine the relationship between academic achievement and behavioral outcomes in at-risk, minority student

groups, (4) the need to investigate the combined effect of academic achievement and intervention on behavioral outcomes in at-risk, minority student groups, and (5) the need for literature that intimately reflects perspectives associated with the African-American experience. This chapter will first, discuss the aforesaid research questions and other significant findings along with empirical and theoretical conclusions. Secondly, limitations of the present study and suggestions for future research will be presented. Thirdly, policy and practice implications deriving from this study will be discussed.

Applying Social Control Theory in Minority Student Groups

Hirschi (1969) purported that social control theory applied equally to all racial groups, and the exploration of differences in delinquency for African-Americans and other minority groups was nugatory. This aspect of social control theory has drawn criticisms and prompted scholars, including Allison, Cullen, Mathers, McClure, and Unnever (2009) to revisit the Richmond Youth Project survey instrument used by Hirschi in his initial study. After the reanalysis of Hirschi's original data, it was determined that differences in racial perceptions and experiences did influence the effects of bonding in African-American youth (Allison et al., 2009). More specifically, these scholars discovered that perceived racism was a significant predictor of delinquency, and racial animus experienced by black youth challenges the effects of social bonds while predisposing them to criminality (Allison et al., 2009). Although inquiries regarding racial differences in delinquency have expanded recently (Agnew, 2006; Gabbidon & Unnever, 2011; Lee & Lotz, 1999), extant research remains sparse. Further examination is needed to fully understand the interaction between these racial differences and bonding along with their combined effect on delinquency (Bost, 2008; Jenkins, 1995). In an attempt to bridge

this gap in literature, the current study's focus on the impact of bonds to the GEAR UP program and school on behavior in an at-risk, minority student population provides the ideal opportunity to do so.

Behavioral Impact of the GEAR UP Program

Since the predominant goal of the GEAR UP program centers on increasing college enrollment rates for disadvantaged students (Bausmith & France, 2012; Huerta, Lozano, & Watt, 2007), much of extant research has investigated the extent to which student participation in the program influences academic performance outcomes such as GPA and standardized test scores (Cates & Schaefle, 2011; Domina, 2009; Huerta et al., 2007). While proximal goals of the program include reducing problem behavior and truancy, few studies have examined its effect on student behavior (Greenbaum et al., 2006). Further, there is a paucity of research explaining which components of the GEAR UP program augment positive behavioral outcomes (Greenbaum et al., 2006). This study attempts to expand this corpus of work by disaggregating the GEAR UP program and identifying which intervention activities, if any, influence students' school behavior.

In response to the first research question, the current results indicate that when all other factors are controlled, singly, most of the GEAR UP program activities fail to significantly influence student behavior. The one activity that shows the most promise for mitigating school delinquency, and thusly, warrants further analysis is student involvement in summer enrichment programming. Students who attend these sessions are nearly 64% less likely to engage in serious school delinquency than others.

As prior research has shown that the implementation of the GEAR UP program contributes to positive behavioral outcomes (Koskey & Sondergeld, 2011), this research is neoteric as it examines the impact of each intervention activity on student behavior. Literature of this nature is uncommon; however, several studies have investigated the effect of comparable school-based intervention programming on student behavior in at-risk, minority student groups. Even though positive behavioral outcomes have been associated with such programs (Hirsch, Pagano, & Roffman, 2001), most were found to be fundamentally supportive of middle-class, Caucasian values and expectations (Blair & Payne, 2005). As a result of these competing values and cultural discordance, minority students are adversely impacted. The racially insensitive design of these programs has proven ineffective in modifying student behaviors and thusly, created a vacuum which has contributed to an inflated number of disciplinary referrals and suspensions for this group (Michael, Nardo, Peterson, & Skiba, 2000; Tobin & Vincent, 2010). This could provide partial explanation of the elevated number of reported rule violations and suspensions for sampled students in the present study (61% and 49.2% respectively).

Another explanation for the lack of significant behavioral impact resulting from GEAR UP program activities may be the institution of zero-tolerance policies in schools. The HCDE along with numerous other school systems across the nation have adopted said policies that often result in an overrepresentation of minorities being suspended and/or referred for disciplinary issues (Fenning & Rose, 2007). Contrary to the goals of the GEAR UP program, these policies foster student disengagement and distrust of program and school personnel (Brotherton, 1996; Celinska & Hirschfield, 2011). Throughout the remainder of this chapter, the lack of culturally applicable programming along with the current punitive climate in schools may provide explanation of departures from precedents established in earlier studies.

Impact of Academic Achievement and School Bonds on Behavioral Outcomes

Academic Achievement

The relationship between academic achievement and student behavior is empirically supported as positive behavioral outcomes are associated with better scholastic performance (Brigman & Campbell, 2003; Catalano et al., 2004; Sugai & Tobin, 1999; Zamora, 2005). In this study, the measure of academic achievement was GPA. Earlier studies, particularly those regarding the GEAR UP program, estimated academic performance by analyzing standardized test scores (Bausmith & France, 2012). While test scores quantify students' academic performance, unlike GPA, a racial disparity in performance that disadvantages minority students is reflected in these tests (Billington et al., 2012; Schmitt, 2012; Wilds & Wilson, 1998). Not only is GPA a more objective and accurate measure of school performance (Aronson, Good, & Inzlicht, 2003), it is also indicative of other characteristics such as effort, conformity, and motivation (Frisbie, Griswold, & Stiggins, 1989; Noble & Sawyer, 2002). Further, Bean (1980) posited that GPA more accurately reflects the material covered in class and commitment to coursework. In other words, GPA is not merely a measure of academic performance, but also functions as an indicator of students' commitment to school.

In regard to the second research question, academic achievement is a strong predictor of student behavior as those students with better GPA's are less likely to engage in both asocial and delinquent school behavior. In line with prior literature, students with higher GPA's demonstrate greater levels of commitment to school (Erickson et al., 2013; Jenkins, 1995; Katsiyannis et al., 2008; Sprott, 2004). Likewise, Laub and Sampson (1995) concluded that a higher GPA not only reduces problem behavior, but is integral in determining life-course offending trajectories.

The next research question concerns the accrual of course credits as an indicator of student commitment. Similar to GPA, course-credits dually serve as a measure of academic performance and school commitment (Christenson, Evelo, Hurley, & Sinclair, 1998; Christenson, Lehr, & Morse, 2004). Allensworth and Easton (2005) found that course credits are a significant predictor of high school completion and literature introduced in chapter two denotes that high-school drop-outs retain greater chances of incarceration (Khatiwada, McLaughlin, Palma, et al., 2009). In response to this question, course credits did not significantly impact student behavior. It may appear that this finding dispels this component of social control theory, but perhaps this study did not capture the influence of course credits as the class subject, attempted credits, nor level (i.e. remedial) were considered. To date, research has failed to specifically examine the predictive capacity of credits earned regarding student behavior; however, Allensworth and Easton (2005) suggested that future studies should focus on the effect of credits earned in core courses (i.e. math, science, English, and social studies) on student behavior, retention, and scholastic performance.

The fourth research question evaluated whether higher achievement in either math or English class inversely impacts asocial school behavior or delinquency. Across both models, results of the logistic regression analyses indicate that performance in these courses are insignificant in the prediction of asocial school behavior and suspensions. These findings are divergent from previous research concerning the mitigating effect of academic achievement on problem behavior (Boland et al., 2006; Christenson et al., 1998; Dishion & Loeber, 1983; Gottfredson et al., 2001; Hinshaw, 1992; LeBlanc et al., 1992). In the current study, students' scores in math and English class were employed as a measure of scholastic performance for two distinct reasons: (1) better performing students tend to invest more time and energy in pursuit of

academic-related goals (Payne & Welch, 2015) and (2) classroom performance is regarded as both an indicator of academic achievement and commitment (Loeber & Maguin, 1996). Furthermore, Lizotte, Krohn, Porter, Smith, and Thornberry (2003) argued that student commitment to school and achievement in the classroom reduce the chances of delinquency across all student groups. The failure to find class performance relationships with both models may indicate that this study did not seize the concept of academic performance. It is possible that this non-significant finding is due to thresholds or cutoff points not being used to determine the optimal scores related to the likelihood of asocial school behavior and suspension. For example, in a study evaluating methods used to measure students' academic performance, ACT (2013) suggested the grouping of students' grades into domains (high, middle, and low).

With the exception of GPA, there is no universally accepted measure to assess academic performance. To remedy to this issue, Kazdin (2005) proposed that due to variations in student development, culture, gender, and etc., a "gold standard" for measuring academic performance is non-existent, and multiple measures should be employed to evaluate student performance. This may potentially explain inconsistencies in outcomes related to the three academic performance measures (GPA, math grade, and English grade) used in this study.

Attendance

The final research question pertains to the relationship between school absenteeism and problem behavior. Findings from the regression analyses demonstrate that when all other factors are constant, absences significantly contribute in the prediction of school suspension; however, absenteeism failed as a predictor of asocial school behavior. Though research examining the influence of school attendance on student behavior has revealed that chronically absent students

tend to exhibit asocial behavior (Rothman, 2001; Schoeneberger, 2012), some scholars attribute more serious school delinquency to persistent absenteeism (Baker, Nugent, & Sigmon, 2001). Inasmuch as attendance greatly impacts the scholastic and behavioral trajectories of students (Jenkins, 1995), there is a lack of consensus regarding the most comprehensive measurement of student attendance. Despite the fact that attendance has been recognized as a contributor in academic performance and linked to asocial behavior in educational literature (Alexander, Entwisle, & Horsey, 1997; Roby, 2004; Schoeneberger, 2012), studies in the social sciences (Abbott et al., 2001; Hawkins & Weis, 1985; Jenkins, 1997), including Hirschi's (1969) initial study of social control have considered non-attendance as problem behavior. In light of these varying conclusions, this study proposes that absenteeism represents the weakening of the school bond.

The mixed results across the models indicate the possibility that the variable employed in this study was not fully comprehensive and that perhaps constructing a measurement inclusive of the average daily attendance (ADA) rate and/or cutoff points could capture the influence of attendance on both asocial behavior and delinquency. Daily attendance rates are commonly used as a measure of attendance in educational research (Epstein & Sheldon, 2002; Morrow, 1986; Sheldon, 2007) and a variable that incorporates both ADA and cutoffs could isolate the student group most at risk for asocial behavior and delinquency (Chaput, Little, & Weiss, 2004). For instance, in an investigation of the effects of chronic absenteeism on students, Chang and Romero (2008) found that students who missed ten percent or more of the school year were impacted socially, academically, and behaviorally.

Other Significant Findings

The remaining variable that significantly contributes in the prediction of asocial behavior and school suspension is gender. Across both models, results from logistic regression indicate that when all other factors are constant, female students are more likely to engage in asocial behavior and school delinquency. Initially, this finding appears to be inconsistent with prior research since boys have customarily been considered more delinquent than girls; however, research suggests that the gender gap in delinquency has declined in recent years (Abramoske-James, Kempf-Leonard, & Tracy, 2009; Hawkins, 2010; Prothrow-Stith & Spivak, 2005). While this trend is consistent across all racial groups, newer studies have shown that with the exception of black male students, African-American girls are issued more disciplinary referrals and suspensions than others (Blake, Butler, Darensbourg, & Lewis, 2011; Crenshaw, Ocen, & Nanda, 2015). Perhaps the convergence of zero-tolerance policies and the lack of cultural synchrony between teachers and students may explain higher levels of risk for rule violations and suspension retained by black girls. The implications of this finding and others along with recommendations for future research will be discussed later in this chapter.

Limitations and Directions for Future Research

Despite the fact that the current study adds to juvenile delinquency and criminological literature by applying social control theory to an at-risk, minority student population, it is not without limitations. As with any retrospective analysis, an implicit limitation is the fact that it depicts a "snapshot in time" that may not reflect prior or future events. For instance, at the time of this study, the sampled cohort of students involved in the GEAR UP program was in the fourth year (2014-2015) of a seven-year intervention cycle; however, records for this analysis

reflect data from the previous year (2013-2014). Current findings indicate that of all the activities offered through the program, only participation in summer enrichment sessions significantly influences student behavior. Yet, in a national study of the GEAR UP program, Bausmith and France (2012) found that generally it takes several years to effectively implement a new program, and an accurate estimate of program fidelity and impact may not be available before that time. Thus, it is possible that the full effect of the program on behavioral outcomes may not be statistically observable until later. Perhaps a longitudinal research design that builds on the findings of this study may contribute in understanding the long-term predictive value of the current models.

A significant limitation derives from the failure to test social control theory in gender-specific models. There is a considerable dearth of literature concerning gender differences in delinquency, particularly, in minority student groups. Historically, girls have been considered less delinquent than boys; however, inquiries of female delinquency have been less frequent and thus, less understood (Lee & Smith-Adcock, 2005; Nishioka et al., 2001). Similar to most criminological theories, hypothesis testing for social control theory, for the most part, has been conducted with male samples and indiscriminately applied to females (Eisele et al., 2009). Akin to this study's investigation of the racial applicability of social control theory, future studies should test the gender applicability of this theory in a diverse female sample versus a comparable group of males. Furthermore, while school bonds have been accepted as a factor in girls' delinquency (Crump et al., 1999), the impact of these bonds on delinquent behavior in female student groups remains unsettled (Lee & Smith-Adcock, 2005). Since each gender and race retain levels of intragroup heterogeneity, future studies of juvenile delinquency should move beyond the presumption of homogeneity, particularly in African-American female student

groups. Inquiries of this nature will be integral in understanding girls' delinquency and whether social bonds influence girls' and boys' behavior differently.

Another limitation of the current study is the inability to control for cultural factors that may potentially distort teachers' and administrators' perceptions of behaviors in minority student groups. In the U.S., African-American students are subjected to disciplinary and exclusionary practices more frequently than other groups (Fenning & Rose, 2007; Payne & Welch, 2010; Peterson, Skiba, & Williams, 1997). Does this mean that black students are more disruptive and delinquent than others? Or could this overrepresentation be evidence of embedded systemic bias? Michael et al. (2000) suggested that the answers to the aforesaid questions are not clear; nonetheless, although no evidence exists to support the notion that black youth are more delinquent than others, they find themselves being disciplined for less serious and more subjective reasons (Michael, Nardo, Peterson, & Skiba, 2002). Therefore, to better understand minority delinquency, future inquiries should attempt to identify the common characteristics that predict the likelihood of punitive sanctioning in these groups.

In addition, the institution of zero-tolerance policies in schools, similar to those employed by HCDE, has exacerbated racial disparities in school discipline (Bachman, Goodkind, Wallace, & Wallace, 2008; Gottfredson et al., 2001; Michael et al., 2002). Several scholars, including Payne and Welch (2010) asserted that a cultural clash between students and school staff is a contributing factor in this overrepresentation. For example, in an analysis of teachers' perceptions of minority student behavior, Curran, Tomlinson-Clarke, and Weinstein (2004) found that a substantial number of Caucasian educators indicated that while they often perceived spirited discussions between black students as being suggestive of aggressive behaviors, these students considered their engagements as normal communication. This clash is most salient

when the racial disparities between students and teachers are explored. Considering that nearly 50% of students in America's school systems belong to a minority group, only 18% of the teachers are minorities (Bireda & Chait, 2011). In the school district included in this research (HCDE), 32% of the students were identified as African-American, whereas 10% of teachers reflect this demographic[7] (Tennessee Department of Education, 2010). Due to this cultural gap, prior research contends that teacher bias, and not the actual behavior of black students is related to disproportionate sanctioning (Blake et al., 2011; Michael et al., 2002). This bias is indicative of the broader context of discrimination in the U.S. as African-Americans are generally stereotyped as dangerous and threatening[8] (Welch, 2007). Conjointly, studies concentrating on race-related perceptions of threat found that school staff perceived minority students as more disruptive, more disrespectful, and more insubordinate than others (Blake et al., 2011; Cole & Vavrus, 2002; Morris, 2007); resulting in the overreliance on punitive measures. In light of these findings, future research should include a more racially diverse sample and variables quantifying the racial perceptions of teachers and administrators while accounting for zero-tolerance policies to determine their effect on disciplinary decisions. The inclusion of such variables in future research could provide indubitable information concerning racial differences in bonding, discipline, and delinquency.

The next way in which the current study may be limited is that only single measures of rule infractions and suspensions were examined and not the types of violations that led to sanctions. Closely related to the previously discussed limitation, it may be possible that the over-sanctioning of black students may derive from the lack of cultural synchrony in schools. In this

[7] In the current study, approximately 90% of the sample was identified as African-American; however, the demographic of the teachers at the three schools included in the study is unknown.
[8] Oftentimes, stereotypes and biases concerning minorities cause the general public to criminalize entire groups based on the behavior of certain individuals or media depictions (Quinney, 1980).

study, girls are more likely to be reprimanded and suspended than boys, and prior research has attributed this to teachers' subconscious biases which are central to their misinterpretation of black girls' behavior (Morris, 2007). That is, while teacher inexperience, lack of cultural synchrony, and improper classroom management may contribute to teachers' overreliance on discipline (Fenning & Rose, 2007), it is likely that widespread prejudice results in harsher discipline for this group as their behavior is interpreted as being incongruous with traditional standards of femininity (Collins, 2004). Paralleling the effects of judicial paternalism on the harsher adjudication of female juveniles for status offenses (Chesney-Lind, 1989; Godsoe, 2014), black girls are punished more severely for minor infractions such as defiance, disruptive behavior, disrespect, profanity, and fighting relative to their racial representation in the schools (Costenbader & Markson, 1998; Ferron, Knoff, & Mendez, 2002). Also, in a study of racial and gender disparities in school discipline, Grant (1984) found that because black girls were perceived as rude, flippant, and precocious, this group was considered by school officials as requiring greater social control. It is also possible the GEAR UP program activities, individually, did not appear to consistently exert significant influence on student behavior due to these biases. Therefore, in order to present a clearer picture of school delinquency among black girls, future studies may benefit from refining the measures of problem behavior along with including variables that account for the racial perceptions of school staff. It is likely that the addition of such qualitative components and/or quantitative indicators of the attitudes and perceptions of teachers and administrators would have significantly strengthened the current study, and increased the amount of variance explained.

A closely related limitation corresponds with the inability to measure students' attitudes and perceptions which resulted in an incomplete test of Hirschi's (1969) social control theory.

Official school and program records were used to conduct a partial test of social control theory focusing on the bonds of commitment and involvement. Perhaps, by combining the results of this study with additional data including student interviews or questionnaires, future studies could potentially estimate the effect of remaining bonds (attachment and belief) on student behavior. Moreover, adding variables of this nature not included in the current models may improve the predictive strength of future studies.

The final limitation concerns the generalizability of the current research. The dataset used for this study only contained student records from three schools within a single school district and did not focus on differences in problem behavior and bonding across rural, urban, and suburban school districts. Although this study has the potential for national generalization, perhaps it is more relevant to mid-size, urban populations with similar demographic characteristics. Future research should attempt to replicate the findings of this study on large and preferably national samples of students identified as being at risk for school failure and behavioral issues.

Implications

Results from the current study provided overall support for Travis Hirschi's (1969) theoretical model regarding social control. As previously discussed, a major limitation of social control theory's initial test was the failure to investigate its applicability across races. By moving beyond Hirschi's presumption of racial homogeneity and examining the impact of social bonds in a predominantly disadvantaged, African-American student group, the current study attempts to enhance and extend the limited body of research that is available to practitioners, researchers,

and policy makers involved in developing and managing school-based intervention programs for students at risk of academic failure and behavioral problems.

Since funding for intervention programs is normally based on the improvement of students' test scores and grades, extant research is generally limited to the evaluation of academic outcomes stemming from program involvement, while behavioral outcomes remain tacit (Bausmith & France, 2012; Greenbaum et al., 2006; Huerta et al., 2007). In contrast, this novel study examined the effects of academic performance and social bonds on student behavior to strengthen strategies designed to reduce delinquency in one of the most vulnerable and challenging populations in the public school system. Related to the need for effective interventions in at-risk student groups, a major implication of the current study is that greater commitment to school and higher levels of involvement in both school and the GEAR UP program significantly reduce the chances of asocial school behavior and suspension. Accordingly, program and school administrators should establish initiatives that emphasize the convergence of better academic achievement (GPA), increased attendance, and participation in intervention activities since the current findings suggest that the interaction of these elements mediates school delinquency and in turn, may provide a viable framework for reducing maladaptive behaviors in the at-risk student population.

This study was the initial step in the assessment of behavioral outcomes for students who participate in the GEAR UP program. The vast majority of the literature on intervention programs and more specifically, the GEAR UP program, examined the overall influence of the entire program, instead of dismantling the program and analyzing the effect of each intervention module on student outcomes. By disaggregating the GEAR UP program, this study provides nuanced insight concerning the impact of each activity on student behavior. At this time, the

current findings reveal that the one activity that significantly influences student behavior is participation in summer enrichment sessions. With only 20% of students attending those sessions, program and school administrators should focus on increasing participation as involvement in summer enrichment considerably reduces the likelihood of suspension. Although more research is needed to determine if behavioral gains continue to accrue over time, this study validates the benefit of the GEAR UP program and overall worth of academic interventions in the campaign against juvenile delinquency.

Another implication derives from the high percentage of students suspended in the current study. Findings indicate that policies are needed to reduce the number of suspensions issued for African-American students in America's schools. In a national study of racial disparities in school discipline, the average rate of suspensions for all students was nearly 11%, yet over half of black students in major urban locations were suspended (Losen & Skiba, 2010). Consistent with these findings, nearly 50% of students in this study were suspended with black girls retaining the highest risk of suspension; illustrating an overreliance on exclusionary practices directed at minority students. Such practices place students at greater risk of dropping out, contribute to the school to prison pipeline, and rival the effects of school and intervention program bonds on behavioral outcomes (Heitzeg, 2009). Considering that research has not shown a deterrent effect associated with suspensions (Peterson et al., 1997), officials should institute disciplinary alternatives that refrain from attenuating the bond between students, schools, and intervention staffs such as counseling, conflict mediation, and community service to eliminate unwanted behaviors and maximize student exposure to prosocial models of behavior (Crenshaw et al., 2015).

The rationale for the last implication centers on the need for race-sensitive analyses of gender disparities in school discipline. Recall, nearly 90% of the students sampled in this study were African-American and results demonstrate that girls are more likely to be reprimanded for rule violations and/or suspended than others. This trend is not isolated to the locale of the current study, but has been observed nationally, particularly, in major urban areas[9] (Blake et al., 2011). Disciplinary disparities experienced by black girls are mostly unnoticed in the prevailing discourse concerning punitive practices in the public school system, resulting in underdeveloped policies that ensure fair and impartial treatment regardless of gender and race (Crenshaw et al., 2015). Hence, it is essential that studies concentrating on the underlying causes of these disparities are conducted in order to identify the dynamics associated with these gaps. Perhaps findings from such studies will act as an impetus for the implementation of alternative disciplinary policies framed within cultural sensitivity and synchrony. For instance, Monroe (2005) found that culturally synchronous pedagogy not only has scholastic implications, but benefits students socially, emotionally, and behaviorally. Further, policies and services should not solely be directed towards the equitable treatment of students as explanations of delinquency vary according to race and gender (Abbott et al., 2007). It is possible that by addressing these disparities and instituting gender/race specific modules of intervention, policymakers and administrators may be able to mitigate this groups' exposure to disciplinary referrals and exclusionary discipline.

[9] This is of particular importance as research indicates that approximately 70% of the minority population in the U.S. reside in urban areas, whereas a large number of Caucasian households have migrated to suburban communities (Wilson, 2012).

CHAPTER VII

CONCLUSION

By testing the application of Hirschi's (1969) social control theory in a predominantly disadvantaged, minority student group, the current study added to both criminological and educational literature. This study examined the impact of academic achievement and bonds to school and the GEAR UP program on student behavior. Although an incomplete test of social control theory was conducted, as this study focused solely on the bonds of commitment and involvement, voids in literature concerning social control theory as well as the effect of the GEAR UP program on student behavioral outcomes were addressed.

As the number of minority students at risk of academic failure and problem behavior continues to rise in the public school system, research-based interventions designed specifically for this population that focus on the augmentation of academic performance and positive behavioral outcomes are needed. Findings from the current study demonstrate that GPA, attendance, gender, and involvement in GEAR UP program activities are significant predictors of school delinquency. Currents results not only provide empirical support for interventions geared toward increasing scholastic performance and school attendance, but also isolated the group at greatest risk of problem behavior and school suspension, African-American girls. Thusly, it is evident that schools servicing this particular student population should consider implementing such initiatives in conjunction with the promotion of student participation in the GEAR UP program or other comparable school-based interventions. Initiatives of this nature could function

as a panacea for school delinquency, and in turn, contribute to the prevention and reduction in juvenile delinquency in general.

REFERENCES

Abbott, R. D., Ayers, C. D., Bright, C. L., Hawkins, J. D., Van Dorn, R. A., & Williams, J. H. (2007). Understanding race and gender differences in delinquent acts and alcohol and marijuana use: A developmental analysis of initiation. *Social Work Research, 31*(2), 71-81.

Abbott, R. D., Battin-Pearson, S., Guo, J., Hawkins, J. D., & Hill, K. (2001). Long-term effects of the Seattle Social Development Intervention on school bonding trajectories. *Applied Developmental Science, 5*(4), 225-236.

Abbott, R. D., Brown, E. C., Catalano, R. F., Cortes, R. R., Fleming, C. B., Haggerty, K. P., & Park, J. (2005). Mediator effects in the social development model: an examination of constituent theories. *Criminal Behaviour and Mental Health, 15*(4), 221-235.

Abbott, R. D., Hawkins, J. D., & O'Donnell, J. (1995). Predicting serious delinquency and substance use among aggressive boys. *Journal of Consulting and Clinical Psychology, 63*(4), 529-537.

Abdullah, M. C., Elias, H., Gaik, L. P., & Uli, J. (2010). Development of antisocial behaviour. *Social and Behavioral Sciences, 7*(2), 383-388.

Abraham, W. T., & Russell, D. W. (2004). Missing data: A review of current methods and applications in epidemiological research. *Current Opinion in Psychiatry, 17*(4), 315-321.

Abramoske-James, S., Kempf-Leonard, K., & Tracy, P. E. (2009). Gender differences in delinquency and juvenile justice processing evidence from national data. *Crime & Delinquency, 55*(2), 171-215.

ACT. (2013). Student and teacher reported behavioral measures: Do they agree?. *ACT Research and Policy*. Iowa City, IA.

Agnew, R. (2006). *Pressured into crime: An overview of general strain theory*: Oxford University Press, USA.

Alati, R., Bor, W., Cerruto, M., Dean, A., Hayatbakhsh, M. R., McGee, T. R., Williams, G. M. (2011). Antisocial behaviour across the life course: An examination of the effects of early onset desistence and early onset persistent antisocial behaviour in adulthood. *Australian Journal of Psychology, 63*(1), 44-55.

Alexander, K. L., Entwisle, D. R., & Horsey, C. S. (1997). From first grade forward: Early foundations of high school dropout. *Sociology of Education, 70*(2), 87-107.

Allensworth, E. M., & Easton, J. Q. (2005). *The on-track indicator as a predictor of high school graduation*. University of Chicago: Consortium on Chicago School Research.

Allison, M. C., Cullen, F. T., Mathers, S. A., McClure, T. E., & Unnever, J. D. (2009). Racial discrimination and Hirschi's criminological classic: A chapter in the sociology of knowledge. *Justice Quarterly, 26*(3), 377-409. doi: 10.1080/07418820802506180

Allison, P. D. (2000). Multiple imputation for missing data: A cautionary tale. *Sociological Methods & Research, 28*(3), 301-309. doi: 10.1177/0049124100028003003

Allison, P. D. (2001). *Missing data* (Vol. 136): Sage publications.

Allison, P. D. (2002). Missing data: Quantitative applications in the social sciences. *British Journal of Mathematical and Statistical Psychology, 55*(1), 193-196.

Allison, P. D. (2003). Missing data techniques for structural equation modeling. *Journal of Abnormal Psychology, 112*(4), 545-557.

Alt, M. N., Chapman, C. D., & Kaufman, P. (2004). Dropout rates in the United States: 2001. Statistical Analysis Report NCES 2005-046. *US Department of Education*.

Anderson, A., & Hughes, L. (2009). Exposure to situations conducive to delinquent behavior. *Journal of Research in Crime and Delinquency, 46*(1), 5-34.

Apel, R., & Kaukinen, C. (2008). On the relationship between family structure and antisocial behavior: Parental cohabitation and blended households. *Criminology, 46*(1), 35-70.

Aronson, J., Good, C., & Inzlicht, M. (2003). Improving adolescents' standardized test performance: An intervention to reduce the effects of stereotype threat. *Journal of Applied Developmental Psychology, 24*(6), 645-662.

Azur, M. J., Frangakis, C., Leaf, P. J., & Stuart, E. A. (2011). Multiple imputation by chained equations: What is it and how does it work?. *International Journal of Methods in Psychiatric Research, 20*(1), 40-49.

Bachman, J. G., Goodkind, S., Wallace, C. M., & Wallace Jr, J. M. (2008). Racial, ethnic, and gender differences in school discipline among US high school students: 1991-2005. *The Negro Educational Review, 59*(2), 47.

Bain, H. C., Boersma, F. J., & Chapman, J. W. (1983). Academic achievement and locus of control in father-absent elementary school children. *School Psychology International, 4*(2), 69-78.

Baker, J. D., Ponton, M. K., & Rovai, A. P. (2013). *Social science research design and statistics: A practitioner's guide to research methods and IBM SPSS*: Watertree Press LLC.

Baker, M. L., Nugent, M. E., & Sigmon, J. N. (2001). Truancy reduction: Keeping students in school. *Juvenile Justice Bulletin*.

Bates, J. E., Castellino, D. R., Dodge, K. A., Hill, N. E., Lansford, J. E., Nowlin, P., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*(5), 1491-1509.

Bausmith, J. M., & France, M. (2012). The impact of GEAR UP on college readiness for students in low income schools. *Journal of Education for Students Placed at Risk, 17*(4), 234-246.

Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education, 12*(2), 155-187.

Bechtold, J., Cauffman, E., Monahan, K. C., & Vanderhei, S. (2014). From the school yard to the squad car: School discipline, truancy, and arrest. *Journal of Youth and Adolescence, 43*(7), 1110-1122.

Billington, A., Keeney, J., Pleskac, T., Reeder, M., Schmitt, N., Sinha, R., & Zorzie, M. (2012). CollegeBoard research report 2011-1: Development and validation of measures of noncognitive college student potential. *The College Board*.

Bireda, S., & Chait, R. (2011). Increasing teacher diversity: Strategies to improve the teacher workforce. *Center For American Progress*.

Blair, T., & Payne, R. K. (2005). *A framework for understanding poverty*. Highlands, TX: aha! Process.

Blake, J. J., Butler, B. R., Darensbourg, A., & Lewis, C. W. (2011). Unmasking the inequitable discipline experiences of urban Black girls: Implications for urban educational stakeholders. *The Urban Review: Issues and Ideas in Public Education, 43*(1), 90-106.

Boland, J. B., Chard, D. J., Good, R. H., III, Horner, R. H., & McIntosh, K. (2006). The use of reading and behavior screening measures to predict nonresponse to school-wide positive behavior support: A longitudinal analysis. *School Psychology Review, 35*(2), 275-291.

Bost, N. S. (2008). *An investigation of the prospective criminogenic effect of out-of-home care placement among aging out youth: the role of mediating mechanisms*. ProQuest.

Boulerice, B., Pagani, L., Vitaro, F., & Tremblay, R. E. (1999). Effects of poverty on academic failure and delinquency in boys: A change and process model approach. *Journal of Child Psychology and Psychiatry, 40*(8), 1209-1219.

Bower, J., Carroll, A., Gordon, L., Hattie, J., Houghton, S., Unsworth, K., & Wood, R. (2009). Self-efficacy and academic achievement in Australian high school students: The mediating effects of academic aspirations and delinquency. *Journal of Adolescence, 32*(4), 797-817.

Brady, S., & Mann, V. A. (1988). Reading disability: The role of language deficiencies. *Journal of Consulting and Clinical Psychology, 56*(6), 811-816.

Brainerd, C. J., & Reyna, V. F. (2007). The importance of mathematics in health and human judgment: Numeracy, risk communication, and medical decision making. *Learning and Individual Differences, 17*(2), 147-159.

Brame, R., Bushway, S., & Paternoster, R. (1999). Assessing stability and change in criminal offending: A comparison of random effects, semiparametric, and fixed effects modeling strategies. *Journal of Quantitative Criminology, 15*(1), 23-61.

Brewer, D., Catalano, R. F., Cothern, L., Farrington, D. P., Harachi, T. W., Hawkins, J. D., & Herrenkohl, T. I. (2000). Predictors of youth violence. *Juvenile Justice Bulletin.*

Brigman, G., & Campbell, C. (2003). Helping students improve academic achievement and school success behavior. *Professional School Counseling, 7*(2), 91-98.

Brotherton, D. C. (1996). The contradictions of suppression: Notes from a study of approaches to gangs in three public high schools. *The Urban Review, 28*(2), 95-117.

Brown, S. L., & Demuth, S. (2004). Family structure, family processes, and adolescent delinquency: The significance of parental absence versus parental gender. *Journal of Research in Crime and Delinquency, 41*(1), 58-81.

Bry, B., Holt, L., & Johnson, V. (2008). Enhancing school engagement in at-risk, urban minority adolescents through a school-based, adult mentoring intervention. *Child & Family Behavior Therapy, 30*(4), 297-318.

Bryan, J., Gaenzle, S., Kim, J., Lin, C.-H., Moore-Thomas, C., & Na, G. (2012). The effects of school bonding on high school seniors academic achievement. *Journal of Counseling & Development, 90*(4), 467-480.

Carroll, A., Durkin, K., Hattie, J., & Houghton, S. (1997). Goal setting among adolescents: A comparison of delinquent, at-risk, and not-at-risk youth. *Journal of Educational Psychology, 89*(3), 441-450.

Carroll, A., Durkin, K., Hattie, J., & Houghton, S. (2001). Goal-setting and reputation enhancement: Behavioural choices among delinquent, at-risk and not at-risk adolescents. *Legal and Criminological Psychology, 6*(2), 165-184.

Caspi, A., Moffitt, T. E., Silva, P. A., & Wright, B. R. (1999). Low self-control, social bonds, and crime: Social causation, social selection, or both?. *Criminology, 37*(3), 479-514.

Catalano, R. F., Fleming, C. B., Haggerty, K. P., Hawkins, J. D., & Oesterle, S. (2004). The importance of bonding to school for healthy development: Findings from the Social Development Research Group. *Journal of School Health, 74*(7), 252-261.

Catalano, R. F., Hemphill, S. A., Herrenkohl, T. I., Plenty, S. M., & Toumbourou, J. W. (2014). Student and school factors associated with school suspension: A multilevel analysis of students in Victoria, Australia and Washington State, United States. *Children and Youth Services Review, 36*, 187-194.

Cates, J. T., & Schaefle, S. E. (2011). The relationship between a college preparation program and at-risk students' college readiness. *Journal of Latinos and Education, 10*(4), 320-334.

Celinska, K., & Hirschfield, P. J. (2011). Beyond fear: Sociological perspectives on the criminalization of school discipline. *Sociology Compass, 5*(1), 1-12.

Chang, H. N., & Romero, M. (2008). Present, engaged, and accounted for: The critical importance of addressing chronic absence in the early grades. *National Center for Children in Poverty*.

Chaput, S. S., Little, P. M., & Weiss, H. (2004). Understanding and measuring attendance in out-of-school time programs: Issues and opportunities in out of school time evaluation no. 7. Cambridge, MA: Harvard Family Research Project.

Cheng, J. (2012). The effect factor for students' deviant behavior. *The Journal of Human Resource and Adult Learning, 8*(2), 26-32.

Chesney-Lind, M. (1989). Girls' crime and woman's place: Toward a feminist model of female delinquency. *Crime & Delinquency, 35*(1), 5-29.

Christenson, S. L., Evelo, D. L., Hurley, C. M., & Sinclair, M. F. (1998). Sustained school engagement. *Exceptional Children, 65*(1), 7-21.

Christenson, S. L., Lehr, C. A., & Morse, A. B. (2004). School completion and student engagement: Information and strategies for parents. *Helping children at home and at school II: Handouts for families and educators*, S2-69.

Chung, H. L., & Steinberg, L. (2006). Relations between neighborhood factors, parenting behaviors, peer deviance, and delinquency among serious juvenile offenders. *Developmental Psychology, 42*(2), 319-331.

Coates, D. L., Sanders, M. G., & Vietze, P. (2002). Schooling students placed at risk: Research, policy, and practice in the education of poor and minority adolescents. *Contemporary Psychology, 47*(2), 186-189.

Cohen, J., Fabio, A., Loeber, R., & Tu, L. C. (2011). Neighborhood socioeconomic disadvantage and the shape of the age-crime curve. *American Journal of Public Health, 101*, 325-332.

Cole, K., & Vavrus, F. (2002). "I didn't do nothin'": The discursive construction of school suspension. *The Urban Review, 34*(2), 87-111.

Cole, K. C., Poulin, S. R., & Schinke, S. P. (2000). Enhancing the educational achievement of at-risk youth. *Prevention Science, 1*(1), 51-60.

Collins, P. H. (2004). *Black sexual politics: African Americans, gender, and the new racism*. Routledge.

Cooper, H., DuBois, D. L., Holloway, B. E., & Valentine, J. C. (2002). Effectiveness of mentoring programs for youth: A meta-analytic review. *American Journal of Community Psychology, 30*(2), 157-197.

Costenbader, V., & Markson, S. (1998). School suspension: A study with secondary school students. *Journal of School Psychology, 36*(1), 59-82.

Crenshaw, K. W., Ocen, P., & Nanda, J. (2015). *Black girls matter: Pushed out, overpoliced and underprotected.* Paper presented at the African American Policy Forum. Columbia Law School Center for Intersectionality and Social Policy Studies.

Crump, A. D., Haynie, D. L., Saylor, K. E., & Simons-Morton, B. G. (1999). Student-school bonding and adolescent problem behavior. *Health Education Research, 14*(1), 99-107.

Crusto, C., DuBois, D., Keener, D., Kumpfer, K., Morrissey-Kane, E., Nation, M., Wandersman, A. (2005). Applying the principles of prevention: What do prevention practitioners need to know about what works?. *American Psychologist, 58*, 449-456.

Curran, M., Tomlinson-Clarke, S., & Weinstein, C. S. (2004). Toward a conception of culturally responsive classroom management. *Journal of Teacher Education, 55*(1), 25-38.

Darling, N. (2005). Participation in extracurricular activities and adolescent adjustment: Cross-sectional and longitudinal findings. *Journal of Youth and Adolescence, 34*(5), 493-505.

Davis, C., Karcher, M. J., & Powell, B. (2002). The effects of developmental mentoring on connectedness and academic achievement. *The School Community Journal*.

DeNavas-Walt, C., Proctor, B. D., & Smith, J. C. (2014). *Income and poverty in the United States: 2013*. United States Census Bureau.

Dishion, T. J., & Loeber, R. (1983). Early predictors of male delinquency: A review. *Psychological Bulletin, 94*(1), 68-99.

Domina, T. (2009). What works in college outreach: Assessing targeted and schoolwide interventions for disadvantaged students. *Educational Evaluation and Policy Analysis, 31*(2), 127-152.

DuBois, D. L., & Rhodes, J. E. (2006). Understanding and facilitating the youth mentoring movement: Social policy report. *Society for Research in Child Development, 22*(3), 3-19.

Eisele, H., Thomson, N. R., & Zand, D. H. (2009). The role of sex, self-perception, and school bonding in predicting academic achievement among middle class African American early adolescents. *Adolescence, 44*(176), 773-796.

Eklund, J. M., Freidenfelt Liljeberg, J., Fritz, M. V., & Klinteberg, B. (2011). Poor school bonding and delinquency over time: Bidirectional effects and sex differences. *Journal of Adolescence, 34*(1), 1-9.

Elder, J. G. H., Merten, M. J., & Wickrama, K. A. S. (2005). Community influence on precocious transitions to adulthood: Racial differences and mental health consequences. *Journal of Community Psychology, 33*(6), 639-653.

Elias, M. J., Fredericks, L., Greenberg, M. T., O'Brien, M. U., Resnik, H., Weissberg, R. P., & Zins, J. E. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*(7), 466-474.

Elliott, A., Elliott, D. S., Huizinga, D., Rankin, B., Sampson, R. J., & Wilson, W. J. (1996). The effects of neighborhood disadvantage on adolescent development. *Journal of Research in Crime and Delinquency, 33*(4), 389-426.

Epstein, J. L., & Sheldon, S. B. (2002). Present and accounted for: Improving student attendance through family and community involvement. *The Journal of Educational Research, 95*(5), 308-318.

Erickson, L. D., Hoffmann, J. P., & Spence, K. R. (2013). Modeling the association between academic achievement and delinquency: An application of interactional theory. *Criminology, 51*(3), 629-660.

Fabelo, A. (2011). Breaking schools' rules: A statewide study of how school discipline relates to students' success and juvenile justice involvement. *New York: Justice Center*.

Fenning, P., & Rose, J. (2007). Overrepresentation of African American students in exclusionary discipline: The role of school policy. *Urban Education, 42*(6), 536-559.

Fergusson, D. M., & Horwood, L. J. (1995). Early disruptive behavior, IQ, and later school achievement and delinquent behavior. *Journal of Abnormal Child Psychology, 23*(2), 183-199.

Ferron, J. M., Knoff, H. M., & Mendez, L. M. R. (2002). School demographic variables and out of school suspension rates: A quantitative and qualitative analysis of a large, ethnically diverse school district. *Psychology in the Schools, 39*(3), 259-277.

Figueredo, A. J., McKnight, K. M., McKnight, P. E., & Sidani, S. (2007). *Missing data: A gentle introduction*: Guilford Press.

Fish, M., Kilian, J., & Maniago, E. (2006). Making schools safe: A system-wide school intervention to increase student prosocial behaviors and enhance school climate. *Journal of Applied School Psychology, 23*(1), 1-30.

Frisbie, D. A., Griswold, P. A., & Stiggins, R. J. (1989). Inside high school grading practices: Building a research agenda. *Educational Measurement: Issues and Practice, 8*(2), 5-14.

Gabbidon, S. L., & Unnever, J. D. (2011). *A theory of African American offending: Race, racism, and crime*: Taylor & Francis.

Gannon-Rowley, T., Morenoff, J. D., & Sampson, R. J. (2002). Assessing neighborhood effects: Social processes and new directions in research. *Annual Review of Sociology, 28*, 443-478.

Garson, G. D. (2011). *Multiple regression, from Statnotes: Topics in multivariate analysis*. Retrieved 8/27/2015 from http://faculty. chass. ncsu. edu/garson/pa765/statnote. htm.

Gatti, U., Tremblay, R. E., & Vitaro, F. (2009). Iatrogenic effect of juvenile justice. *Journal of Child Psychology and Psychiatry, 50*(8), 991-998.

Gibson, C. L., Miller, J. M., & Schreck, C. J. (2003). Trouble in the school yard: A study of the risk factors of victimization at school. *Crime & Delinquency, 49*(3), 460-484.

Gibson, D. M., & Jefferson, R. N. (2006). The effect of perceived parental involvement and the use of growth-fostering relationships on self-concept in adolescents participating in GEAR UP. *Adolescence, 41*(161), 111-125.

Godsoe, C. (2014). Contempt, status, and the criminalization of non-conforming girls. *Cardozo Law Review, 34*, 1091.

Gofen, A. (2009). Family capital: How first-generation higher education students break the intergenerational cycle. *Family Relations, 58*(1), 104-120.

Gollwitzer, P. M., Honig, G., & Oettingen, G. (2000). Effective self-regulation of goal attainment. *International Journal of Educational Research, 33*(7), 705-732.

Gordon, K. A. (1995). Self-concept and motivational patterns of resilient African American high school students. *Journal of Black Psychology, 21*(3), 239-255.

Gorman-Smith, D., Loeber, R., & Tolan, P. H. (2000). Developmental timing of onsets of disruptive behaviors and later delinquency of inner-city youth. *Journal of Child and Family Studies, 9*(2), 203-220.

Gottfredson, D. C., Najaka, S. S., & Wilson, D. B. (2001). School-based prevention of problem behaviors: A meta-analysis. *Journal of Quantitative Criminology, 17*(3), 247-272.

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549-576.

Graham, J. W. (2012). *Missing data: Analysis and design*: Springer Science & Business Media.

Graham, J. W., & Schafer, J. L. (2002). Missing data: Our view of the state of the art. *Psychological Methods, 7*(2), 147-177.

Grant, L. (1984). Black females "place" in desegregated classrooms. *Sociology of Education, 57*(2), 98-111.

Greenbaum, P. E., Massey, O. T., & Yampolskaya, S. (2006). At-risk high school students in the Gaining Early Awareness and Readiness Program (GEAR UP): Academic and behavioral outcomes. *Journal of Primary Prevention, 27*(5), 457-475.

Grossman, J. B., Resch, N. L., & Rhodes, J. E. (2000). Agents of change: Pathways through which mentoring relationships influence adolescents' academic adjustment. *Child Development, 71*(6), 1662-1671.

Halpern, R. (1990). Within our reach: Breaking the cycle of disadvantage. *Social Service Review, 64*(4), 637-648.

Hamilton County Department of Education. (2014). *Hamilton County Department of Education*. Retrieved from http://www.hcde.org/calendars

Hamilton County Department of Education. (2014). *Hamilton County Department of Education*. Retrieved from http://www.hcde.org/studentdiscipline

Hawkins, J. D., Monahan, K. C., & Oesterle, S. (2010). Predictors and consequences of school connectedness: The case for prevention. *Prevention Researcher, 17*(3), 3-6.

Hawkins, J. D., & Weis, J. G. (1985). The social development model: An integrated approach to delinquency prevention. *The Journal of Primary Prevention, 6*(2), 73-97.

Hawkins, S. R. (2010). *Resilient girls: Factors that protect against delinquency*: DIANE Publishing.

Heitzeg, N. A. (2009). Education or incarceration: Zero tolerance policies and the school to prison pipeline. *In Forum on Public Policy Online, 2009*(2).

Heward, W. L. (2003). Ten faulty notions about teaching and learning that hinder the effectiveness of special education. *Journal of Special Education, 36*(4), 186-205.

Hill, N. E., & Taylor, L. C. (2004). Parental school involvement and children's academic achievement pragmatics and issues. *Current Directions in Psychological Science, 13*(4), 161-164.

Hinshaw, S. P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: Causal relationships and underlying mechanisms. *Psychological Bulletin, 111*(1), 127-155.

Hirsch, B. J., Pagano, M. E., & Roffman, J. G. (2001). Youth functioning and experiences in inner-city after-school programs among age, gender, and race groups. *Journal of Child and Family Studies, 10*(1), 85-100.

Hirschi, T. (1969). *Causes of Delinquency*. Berkeley, CA: University of California Press.

Hjort, N. L., & Hosmer, D. W. (2002). Goodness-of-fit processes for logistic regression: Simulation results. *Statistics in Medicine, 21*(18), 2723-2738.

Hosmer, D. W., & Lemeshow, S. (2004). *Applied logistic regression.* John Wiley & Sons.

Huerta, J., Lozano, A., & Watt, K. M. (2007). A comparison study of AVID and GEAR UP 10th-grade students in two high schools in the Rio Grande Valley of Texas. *Journal of Education for Students Placed at Risk, 12*(2), 185-212.

Jenkins, P. H. (1995). School delinquency and school commitment. *Sociology of Education, 68*(3), 221-239.

Jenkins, P. H. (1997). School delinquency and the school social bond. *Journal of Research in Crime and Delinquency, 34*(3), 337-367.

Junger-Tas, J. (1992). An empirical test of social control theory. *Journal of Quantitative Criminology, 8*(1), 9-28.

Katsiyannis, A., Ryan, J. B., Spann, A., & Zhang, D. (2008). Juvenile delinquency and recidivism: The impact of academic achievement. *Reading & Writing Quarterly, 24*(2), 177-196.

Kazdin, A. E. (2005). Evidence-based assessment for children and adolescents: Issues in measurement development and clinical application. *Journal of Clinical Child and Adolescent Psychology, 34*(3), 548-558.

Keeley, J. H. (2006). Will adjudicated youth return to school after residential placement?. The results of a predictive variable study. *Journal of Correctional Education*, 65-85.

Khatiwada, I., McLaughlin, J., Palma, S., & Sum, A. (2009). The consequences of dropping out of high school. *Center for Labor Market Studies Publications*.

Kilian, D. W., & Kilian, J. M. (2011). A school intervention to increase prosocial behavior and improve academic performance of at-risk students. *Improving Schools, 14*(1), 65-83.

Koskey, K. L., & Sondergeld, T. A. (2011). Evaluating the impact of an urban comprehensive school reform: An illustration of the need for mixed methods. *Studies in Educational Evaluation, 37*(2), 94-107.

Krivo, L. J., & Peterson, R. D. (1996). Extremely disadvantaged neighborhoods and urban crime. *Social Forces, 75*(2), 619-648.

Krohn, M., Lizotte, A., Smith, C., Thornberry, T., & Tobin, K. (2003). *Gang membership and delinquency: Gangs in developmental perspective*: New York: Cambridge University Press.

Lasley, J., & Rosenbaum, J. (1990). School, community context, and delinquency: Rethinking the gender gap. *Justice Quarterly, 7*(3), 493-513.

Latham, G. P., & Locke, E. A. (1990). *A theory of goal setting & task performance*. Englewood Cliffs, N.J.: Prentice Hall.

Latham, G. P., & Locke, E. A. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist, 57*(9), 705-717.

Laub, J. H., & Sampson, R. J. (1995). *Crime in the making: Pathways and turning points through life*. Cambridge, MA: Harvard University Press.

Lauritsen, J. L., & White, N. (2012). Violent crime against youth, 1994–2010. *Office of Justice Programs, Bureau of Justice Statistics, NJC, 240106*.

LeBlanc, M., Ledingham, J. E., Masse, B., Perron, D., Schwartzman, A. E., & Tremblay, R. E. (1992). Early disruptive behavior, poor school achievement, delinquent behavior, and delinquent personality: Longitudinal analyses. *Journal of Consulting and Clinical Psychology, 60*(1), 64.

Lee, L., & Lotz, R. (1999). Sociability, school experience, and delinquency. *Youth & Society, 31*(2), 199-223.

Lee, S. M., & Smith-Adcock, S. (2005). A model of girls' school delinquency: School bonding and reputation. *Professional School Counseling, 9*(1), 78.

Li, S. (2004). The impacts of self-control and social bonds on juvenile delinquency in a national sample of midadolescents. *Deviant Behavior, 25*(4), 351-373.

Libbey, H. P. (2004). Measuring student relationships to school: Attachment, bonding, connectedness, and engagement. *Journal of School Health, 74*(7), 274-283.

Linke, L. H., Strambler, M. J., & Ward, N. L. (2013). Increasing educational attainment among urban minority youth: A model of university, school, and community partnerships. *Journal of Negro Education, 82*(3), 312-325.

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*(404), 1198-1202.

Lizotte, A. J., Krohn, M. D., Porter, P. K., Smith, C. A., & Thornberry, T. P. (2003). Causes and consequences of delinquency: Findings from the Rochester youth development study. In *Taking stock of delinquency*: *An overview of findings from contemporary longitudinal studies* (pp. 11-46). Springer US.

Loeber, R., & Maguin, E. (1996). Academic performance and delinquency. *Crime and Justice, 20*, 145-264.

Losen, D. J., & Skiba, R. J. (2010). *Suspended education: Urban middle schools in crisis*. Los Angeles, CA: UCLA Civil Rights Project.

Maddox, S. J., & Prinz, R. J. (2003). School bonding in children and adolescents: conceptualization, assessment, and associated variables. *Clinical Child and Family Psychology Review, 6*(1), 31-49.

Marschall, M. (2006). Parent involvement and educational outcomes for Latino students. *Review of Policy Research, 23*(5), 1053-1076.

Maydeu-Olivares, A., & Millsap, R. E. (2009). *The SAGE handbook of quantitative methods in psychology*. Los Angeles: SAGE.

McDill, E. L., & Natriello, G. (1998). The effectiveness of the Title I compensatory education program: 1965-1997. *Journal of Education for Students Placed at Risk, 3*(4), 317-335.

McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*(2), 185-204.

McPherson, K. S., & Sedlak, A. J. (2010). Youth's needs and services. *OJJDP Juvenile Justice Bulletin*, 10-11.

Mendel, R. A. (2011). No place for kids: The case for reducing juvenile incarceration. *Annie E. Casey Foundation*. Retrieved from http://www.aecf.org/resources/no-place-for-kids-full-report/

Michael, R. S., Nardo, A. C., Peterson, R., & Skiba, R. J. (2000). The color of discipline. *Policy Research Report, Indiana Education Policy Center*. Retrieved from http://www.indiana.edu/~safeschl/cod.pdf

Michael, R. S., Nardo, A. C., Peterson, R. L., & Skiba, R. J. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *The Urban Review, 34*(4), 317-342.

Mickelson, R. A. (1990). The attitude-achievement paradox among black adolescents. *Sociology of Education, 63*(1), 44-61.

Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*(4), 674.

Monroe, C. R. (2005). Understanding the discipline gap through a cultural lens: Implications for the education of African American students. *Intercultural Education, 16*(4), 317-330.

Morris, E. W. (2007). "Ladies" or "loudies"?. Perceptions and experiences of black girls in classrooms. *Youth & Society, 38*(4), 490-515.

Morrison, G. M., & O'Farrell, S. L. (2003). A factor analysis exploring school bonding and related constructs among upper elementary students. *The California School Psychologist, 8*(1), 53-72.

Morrow, G. (1986). Standardizing practice in the analysis of school dropouts. *The Teachers College Record, 87*(3), 342-355.

Nishioka, V., Simonsen, B., Sprague, J., Stieber, S., Wagner, L., & Walker, H. M. (2001). Exploring the relationship between school discipline referrals and delinquency. *Psychology in the Schools, 38*(2), 197-206.

Noble, J., & Sawyer, R. (2002). *Predicting different levels of academic success in college using high school GPA and ACT composite score (ACT Research Report Series)*. Iowa City: ACT.

Olsen, M. K., & Schafer, J. L. (1998). Multiple imputation for multivariate missing-data problems: A data analyst's perspective. *Multivariate Behavioral Research, 33*(4), 545-571.

Ozbay, O., & Ozcan, Y. Z. (2006). A test of Hirschi's social bonding theory: Juvenile delinquency in the high schools of Ankara, Turkey. *International Journal of Offender Therapy and Comparative Criminology, 50*(6), 711-726.

Pallant, J. (2007). *SPSS survival manual: A step-by-step guide to data analysis using SPSS version 15*. Maidenhead, Berkshire, England: McGraw-Hill Education.

Patrician, P. A. (2002). Multiple imputation for missing data. *Research in Nursing & Health, 25*(1), 76-84.

Patterson, G. R., & Yoerger, K. (1999). Intraindividual growth in covert antisocial behaviour: A necessary precursor to chronic juvenile and adult arrests?. *Criminal Behaviour and Mental Health, 9*(1), 24-38.

Payne, A. A., & Welch, K. (2010). Racial threat and punitive school discipline. *Social Problems, 57*(1), 25-48.

Payne, A. A., & Welch, K. (2015). How school and education impact the development of criminal and antisocial behavior. In *The Development of Criminal and Antisocial Behavior* (pp. 237-251). Springer International Publishing.

Peterson, R. L., Skiba, R. J., & Williams, T. (1997). Office referrals and suspension: Disciplinary intervention in middle schools. *Education and Treatment of Children, 20*(3), 295-315.

Piquero, A. R. (2008). Disproportionate minority contact. *Future of Children, 18*(2), 59-79.

Prothrow-Stith, D., & Spivak, H. R. (2005). *Sugar and spice and no longer nice: How we can stop girls' violence*. John Wiley & Sons.

Puzzanchera, C., & Sickmund, M. (2014). *Juvenile offenders and victims: 2014 national report*. Office of Juvenile Justice and Delinquency Prevention.

Quinney, R. (1980). *Providence: The reconstruction of social and moral order*. Longman Publishing Group.

Rhodes, J. E. (2004). The critical ingredient: Caring youth-staff relationships in after-school settings. *New Directions for Youth Development, 101*, 145-161.

Roberts, A. (2000). Mentoring revisited: A phenomenological reading of the literature. *Mentoring & Tutoring, 8*(2), 145-170.

Roby, D. E. (2004). Research on school attendance and student achievement: A study of Ohio schools. *Educational Research Quarterly, 28*(1), 3-16.

Rothman, S. (2001). School absence and student background factors: A multilevel analysis. *International Education Journal, 2*(1), 59-68.

Royston, P. (2004). Multiple imputation of missing values. *Stata Journal, 4*(3), 227-241.

Rubin, D. B., & Schenker, N. (1986). Multiple imputation for interval estimation from simple random samples with ignorable nonresponse. *Journal of the American Statistical Association, 81*(394), 366-374.

Schmitt, N. (2012). Development of rationale and measures of noncognitive college student potential. *Educational Psychologist, 47*(1), 18-29.

Schoeneberger, J. A. (2012). Longitudinal attendance patterns: Developing high school dropouts. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 85*(1), 7-14.

Schunk, D. H., & Zimmerman, B. J. (1997). Social origins of self-regulatory competence. *Educational Psychologist, 32*(4), 195-208.

Shane, F. (2005). Cognitive reflection and decision making. *The Journal of Economic Perspectives, 19*(4), 25-42.

Sheldon, S. B. (2007). Improving student attendance with school, family, and community partnerships. *The Journal of Educational Research, 100*(5), 267-275.

Sprinthall, N. A., & Sprinthall, R. C. (1987). *Educational psychology: A developmental approach*: Random House.

Sprott, J. B. (2004). The development of early delinquency: Can classroom and school climates make a difference?. *Canadian Journal of Criminology and Criminal Justice, 46*(5), 553-572.

Sugai, G. M., & Tobin, T. J. (1999). Using sixth-grade school records to predict school violence, chronic discipline problems, and high school outcomes. *Journal of Emotional and Behavioral Disorders, 7*(1), 40-53.

Tennessee Department of Education. (2010). Hamilton County Report Card.

Tennessee Department of Education. (2015). Graduation. Retrieved from http://www.tn.gov/education/instruction/graduation.shtml

Thornberry, T. (2005). Explaining multiple patterns of offending across the life course and across generations. *The Annals of the American Academy of Political and Social Science, 602*(1), 156-195.

Tobin, T. J., & Vincent, C. G. (2010). The relationship between implementation of school-wide positive behavior support (SWPBS) and disciplinary exclusion of students from various ethnic backgrounds with and without disabilities. *Journal of Emotional and Behavioral Disorders*, 217-234.

Wagner, W. E. (2011). *Using IBM SPSS statistics for social statistics and research methods*: Sage.

Welch, K. (2007). Black criminal stereotypes and racial profiling. *Journal of Contemporary Criminal Justice, 23*(3), 276-288.

Wilds, D. J., & Wilson, R. (1998). Sixteenth annual status report on minorities in higher education. *Washington, DC: American Council on Education*.

Wilson, W. J. (2012). *The truly disadvantaged: The inner city, the underclass, and public policy*. University of Chicago Press.

Zamora, D. (2005). Levels of academic achievement and further delinquency among detained youth. *The Southwest Journal of Criminal Justice, 2*(1), 42-53.

VITA

Thaddeus Lateef Johnson was born in Memphis, Tennessee to parents, Galvin and Regina Johnson. The youngest of two sons, Thaddeus graduated high school and attended the University of Tennessee at Chattanooga. Although his first attempt at the postsecondary level was unsuccessful, he returned home and began a career in law enforcement. Several years later, Thaddeus met his wife, Natasha Johnson, and they left the United States to reside in the Caribbean nation of Jamaica, West Indies. During his two years in Jamaica, Thaddeus completed his Bachelors of Science in Criminal Justice through a distance learning program at the University of Tennessee at Chattanooga. In August 2014, the couple returned to the U.S. to attend graduate school at Thaddeus' alma mater. After completing his first year in graduate school, Thaddeus accepted a graduate teaching assistantship in the Criminal Justice program. His wife graduated with her Ed.S degree in Instructional Leadership in August 2015 and Thaddeus graduated with a Masters of Science in Criminal Justice in May 2016. They both will be continuing their studies in their respective fields by pursuing doctorate degrees at Georgia State University in 2016.