CLASSIFYING VIOLENT VERSUS NON-VIOLENT OFFENDING IN A DIVERSE
SAMPLE OF ADOLESCENT JUVENILE DELINQUENTS

by

Gretchen Schoenfield

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ABSTRACT

The purpose of the study was to examine whether a set of theoretically and empirically established risk factors could contribute to the classification of violent versus non-violent offending in an ethnically diverse sample of male and female adolescent juvenile delinquents. Variables examined included economic disadvantage, grade point average (GPA), sex, dependency involvement, special education diagnosis, specific learning disability diagnosis, emotional disability diagnosis, history of illegal substance violation, and recidivism. Observed versus expected frequencies of violent versus non-violent offending across different ethnicity categories were also examined. It was hypothesized that economic disadvantage and grade point average would not significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents. It was hypothesized that sex, dependency involvement, special education diagnosis, specific learning disability diagnosis, emotional disability diagnosis, history of illegal substance violation, and recidivism would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents. It was also hypothesized that there would be no significant differences between observed versus expected frequency of violent versus non-violent offending across ethnicity categories.

A discriminant analysis retained five of nine variables in the final stepwise model, including recidivism, illegal substance violation history, special education diagnosis, emotional disability diagnosis, and specific learning disability diagnosis. While variables in the analysis significantly contributed to the classification of non-violent group

membership, the model yielded low hit ratio for classification of cases into the violent group. A chi-square analysis was also conducted to examine whether there were significant differences between observed and expected frequencies across different ethnicity categories with regard to violent versus non-violent offense group membership. No significant association existed between ethnicity and the juvenile delinquents' expected versus observed frequency of violent versus non-violent offender group membership. Implications of these findings, limitations of the study, and areas for future research are discussed.

CHAPTER 1

INTRODUCTION

The role and function of the juvenile justice system have been discussed in the scholarly literature for more than a century (e.g., Marcotte, 1990; Woolard, Fondacaro, & Slobogin, 2001; Young, 2001). Prior to the passage of the *Illinois Juvenile Court Act* in 1899 which established the first juvenile court in the Chicago metropolitan area of Cook County, no legal provisions distinguished between young offenders and adults, and deviant acts committed by juveniles were generally considered to be within the purview of the criminal (or adult) justice system (Wolcott, 2001). Judges presiding over juvenile cases in the adult criminal system faced a dilemma regarding whether delinquent youth should be sentenced for their crimes in the same manner as adults (Ventrell & Duquette, 2005). While children under seven years-of-age were generally protected by an “infancy” defense, in some cases a juvenile’s age of at least seven years could contribute to a reduced sentence or even exculpate the juvenile from blameworthiness (Young, 2001). In other cases, the state could form a presumption of capacity for criminal intent for children between 7 and 14 years-of-age by demonstrating, for example, that a 12-year-old juvenile’s attempt to conceal evidence of a crime suggested an awareness of wrongdoing; therefore, rendering the juvenile culpable and subject to criminal penalties like those of adults (Wolcott, 2003).

A coalition of child welfare reform advocates---such as the Jane Addam’s Hull House Settlement, the Chicago Bar Association, and the Chicago Women’s Club---lobbied for the passage of the 1899 *Illinois Juvenile Court Act* (Rothman, 2002; Snyder

& Sickmund, 1995a; Wolcott, 2001, 2003). The new system was based upon the principle of *parens patriae*, which gave the state broad authority to intervene in legal matters involving children (Barnickol, 2000). The overriding rationale for the juvenile court was to rehabilitate young offenders, and the paramount question was whether a youth was amenable to treatment (Rothman, 2002; Teeters & Reinemann, 1950; Young, 2001). The initial purpose of the juvenile court was two-fold: (1) protect children accused of crimes from the severity of the adult criminal court, and (2) provide services to neglected youth or children suspected of engaging in criminal or deviant behaviors (Wolcott, 2003).

By 1945, juvenile courts existed in every state within the United States (U.S.), but were widely considered to be unsuccessful in providing rehabilitative services (Snyder & Sickmund, 1995a). In the mid-1960s, the U.S. Supreme Court initiated a series of opinions that changed the nature of juvenile justice law. These opinions directly challenged the assumptions of the early juvenile court. As US Supreme Court Justice Fortas wrote in the majority opinion in *Kent v. United States* (1966), “[T]here may be grounds of concerns that the child gets the worst of both worlds: that he gets neither the protections accorded to adults nor the solicitous care and regenerative treatment postulated for children” (p. 556). In *Kent*, the Court held that juveniles were entitled to a hearing before being waived to adult court to face criminal charges. The Court also instituted the following determinative factors to guide decisions regarding whether to transfer a juvenile offender to adult court: (1) the seriousness of the alleged offense to the community and whether the protection of the community requires waiver; (2) whether the

alleged offense was committed in an aggressive, violent, premeditated or willful manner; and (3) whether the alleged offense was against persons or against property, with greater weight given to offenses against persons especially if personal injury resulted.

One year later, in the case of *In re Gault* (1967), the US Supreme Court described juvenile courts as “kangaroo courts” characterized by arbitrariness, ineffectiveness, and injustice. The appellant, Gerald Gault, had been committed at 15 years-of-age to the Arizona State Industrial School “for the period of his minority [to age 21], unless sooner discharged by due process of law” (p. 7) after having placed an obscene phone call. At the time, according to the case, an adult convicted of the same offense may have faced a small fine or a two-month imprisonment. Other facts surrounding the incident highlighted other inequities in the juvenile justice system. For example, Gault’s parents were not notified of his arrest and neither Gault nor his parents were informed of the charge. In addition, Gault did not have access to counsel or an opportunity to summon and cross-examine witnesses, and the judge interrogated Gault during the hearing and required him to testify against himself (*In re Gault*, 1967).

In addition, in 1967, the report of the President’s Commission on Law Enforcement and the Administration of Justice recommended developing alternatives to incarceration for juvenile offenders. In 1974, Congress passed the *Juvenile Delinquency Prevention and Control Act* (JJDPA), which deinstitutionalized processes that involved status offenses, separated juvenile from adult prisoners, and required courts to rely on community-based programming to address the needs of juvenile delinquents (Barnickol,

2000). Alternatives to incarceration, such as electronic monitoring and direct supervision, were also encouraged.

Gault (1967) and subsequent landmark cases have resulted in more rights being afforded juveniles. For example, *Gault* required states to provide the right to counsel, to written and timely notice of the charges, and to protection against self-incrimination. Since *Gault*, the Supreme Court has also held that protections of the double jeopardy clause apply to juveniles (*Breed v. Jones*, 1975), and that the state's burden of proof at the adjudicatory phase of a hearing must be “beyond a reasonable doubt” (*In re Winship*, 1970).

Although legal protections for juveniles were increasingly being introduced into the juvenile justice system, the 1980s and early 1990s yielded a more severe approach to juvenile offenses, due to public dismay with the increase in frequency and severity of juvenile crimes and the perceived ineffectiveness of the juvenile justice system's rehabilitative approach (Snyder & Sickmund, 1995a). Public perception of a continuing juvenile crime epidemic led to a nationwide legislative shift toward a “get tough” approach to juvenile delinquents that continued into the 21st century (Melton, Petrila, Poythress, & Slobogin, 2007; Snyder & Sickmund, 1995b; Zimring, 1998). State legislators were faced with the challenge of maintaining a rehabilitative approach, while also meeting public demands for a more punitive response to juvenile crime. To meet these ostensibly incompatible goals, legislative efforts reflected a trend towards reducing the juvenile court's jurisdiction. For example, status offenses were eliminated in many jurisdictions and, at the other end of the spectrum, more severe juvenile crime was being

increasingly processed within the adult criminal court system (Redding & Morozski, 2005). Accordingly, several cases emerged regarding whether the death penalty should be applied to youth offenders. For example, in *Eddings v. Oklahoma* (1982), the U.S. Supreme Court held that a juvenile's age should be considered as only one of several mitigating factors in deciding whether to impose the death penalty. However, in *Thompson v. Oklahoma* (1988) and *Stanford v. Kentucky* (1989), the Court refused to label the execution of a juvenile of at least 16 years of age as cruel and unusual punishment under the Eighth Amendment of the U.S. Constitution. After *Stanford*, a national consensus formed against the execution of juvenile offenders. In *Roper v. Simmons* (2005), the U.S. Supreme Court determined that execution of juvenile offenders violated society's evolving standards of decency, thereby setting the minimum age for eligibility for the death penalty at 18 years-of-age.

By the mid-1990s, the aforementioned ideological shift toward processing juveniles within the adult criminal system continued, and 45 states enacted legislation that facilitated the transfer of juveniles from the juvenile justice system to the adult criminal system (Snyder & Sickmund, 1999). Along with the changes in the procedures for remanding juveniles to adult court, legislators in several states amended the statutory purpose clause of juvenile courts. By the end of 1997, 17 states redefined their juvenile court purpose clauses to emphasize public safety, punishment for youth, certain sanctions, and/or offender accountability (Merlo & Benekos, 2003). Although the earlier language had focused only on children's best interests, new legislation emphasized an

approach that balanced the protection of the community, the need for accountability, and the importance of providing treatment (Torbet & Szymanski, 1998).

The 21st century has continued to yield an emphasis on legislation that balances public safety, individual accountability to victims and the community, and establishing rehabilitative programming for juvenile offenders (Snyder & Sickmund, 2006). With regard to sentencing and adjudication, states have increasingly adopted measures that give broader discretion to juvenile court judges, thus amending or eliminating mandatory transfer and sentencing laws. States have begun to adopt blended sentences for youth convicted of capital murder offenses, which allows juveniles to avoid adult sentences if they fulfill the court's requirements prior to reaching the age of adult jurisdiction.

Juvenile detention and correctional settings are being held increasingly accountable for providing educational and mental health services to youth offenders. In addition, efforts toward reducing disproportionate minority contact have been increasingly visible across state jurisdictions (Redding & Morozski, 2005). Moreover, attention is being directed increasingly towards expanding community alternatives to youth incarceration, as well as responding to the unique needs of the female offender, as well as youth involved in both dependency and delinquency cases (Anderson, Clarke, & Bryer, 2008; Zahn, Hawkins, Chiancone, & Whitworth, 2008). Furthermore, federal and state organizations are increasingly supporting research efforts targeted identifying at risk and protective factors of juvenile delinquency (Merlo & Benekos, 2003).

Definitional Issues

A discussion of issues pertaining to juvenile delinquents in detention settings necessitates clarification of relevant terms as well as a description of how cases are generally processed within the U.S. Juvenile Justice System.

Juvenile Delinquency

Although state definitions vary in terms of the age at which a child can be referred to juvenile court, the definition of a “delinquent” juvenile is generally consistent with, for example, Arizona law (A.R.S. § 8-201[6, 11]), namely, a child who has been found guilty for an act which, if committed by an adult, would be a criminal offense. The term “juvenile” is defined by state law and refers to persons within a specific age range, usually under 18 years-of-age (e.g. [A.R.S. §8-201(6)]). Violations under the juvenile justice system fall into two categories: criminal and status offenses. Criminal offenses refer to violations of the law that apply to both adults and juveniles, such as possession of illegal substances, robbery, homicide, and so forth. Status offenses refer to violations of the law that apply only to juveniles, such as truancy, curfew violations, and running away from home (Garner, 2004). Though state and federal policies typically guide the ways in which these violations are processed, procedures may vary across states (Griffin, 2006).

Delinquency and terms such as conduct disorder (CD) and antisocial behavior have been defined flexibly in the literature and in the popular press (Connor, 2004); however, there are important distinguishing features. The *Diagnostic and Statistical Manual of Mental Disorders, 4th ed., Text Revision* (DSM-IV-TR) that was published in 2000 by the American Psychiatric Association (APA) defines conduct disorder as “...a

repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated” (APA, 2000, p. 94). Diagnostic criteria for CD include at least one of the following: (1) aggressive behavior toward people or animals; (2) willful destructiveness of property; (3) theft or deceitfulness; or (4) serious rule violation— all of which result in marked impairment in social, academic, or occupational functioning (American Psychiatric Association, 2000).

The “Child or Adolescent Antisocial Behavior” classification, a DSM-IV *V* code diagnosis, which may be used to describe conditions that are a focus of clinical attention, or used when there is either insufficient information for a diagnosis or when an individual does not meet diagnostic criteria for an Axis I diagnosis (APA, 2000). An example of appropriate use of Child or Adolescent Antisocial Behavior diagnosis would be a child who has engaged in antisocial acts, but who has not demonstrated a persistent and repetitive pattern of antisocial behavior. Antisocial behavior has also been used as a non-diagnostic descriptor to describe a broad spectrum of behaviors that violate social mores and/or the rights of others, which may or may not include illegal acts (Dishion, French, & Patterson, 1995; Hinshaw & Zupan, 1997). Antisocial behavior, in and of itself, does not constitute a diagnosis of CD, nor does it necessarily refer to a violation of the law. Further, not all juvenile offenders meet diagnostic criteria for CD. For example, studies investigating the prevalence of CD in detained youth have reported estimates as low as 17% (e.g., Duclos, Beals, Novins, Martin, Jewett, & Manson, 1998).

Psychopathy

Psychopathy is a well-known construct in the adult criminal literature that is often used to describe a constellation of characteristics and behaviors including: a) an arrogant, deceitful interpersonal style; b) low remorse, guilt, and empathy, and a failure to accept responsibility for actions; and c) an impulsive or irresponsible behavioral style (Cooke & Michie, 2001; Cooke, Michie, Hart, & Clark, 2004). Psychopathy in the adult criminal population has been discussed in the research literature (Hemphill, Templeman, Wong, & Hare, 1998; Leistico, Salekin, DeCoster, & Rogers, 2008), with more recent interest in applying this term to the juvenile delinquency population (Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005). However, several scholars have cautioned against applying the term “psychopathy” to the juvenile population (Edens, 2001; Edens & Vincent, 2008; Viljoen, McLachlan, & Vincent, 2010). Some authors suggest describing psychopathic characteristics or traits in youth rather than using the “psychopath” label, as research suggests moderate associations with violence and psychopathic characteristics in youth (Leistico et al., 2008). Others, however, advise against using the term psychopath in any capacity, due to concerns that such a term could yield harsher sanctions or limit access to rehabilitation opportunities (Steinberg, 2002).

Aggression and Juvenile Violence

Bragging, fighting, teasing, and other similar activities constitute a constellation of aggressive behaviors that are frequently observed in children and adolescents (Frick et al., 1993). Criminal law determines whether a behavior is defined as violent. In general, the legal definition of violence refers to the use of physical force unlawfully exercised

with the intent to harm or injure (Garner, 2004). Legal definitions of violent behavior also include threatening, attempts to injure, in addition to homicide, assault, robbery, rape, and other sexual assaults (Zahn et al., 2008).

Case Processing in Juvenile Courts

State laws vary according to whether juvenile delinquency services are centralized or decentralized, with the majority of states organizing services at both the state and local level. At present, 12 states maintain centralized responsibility over delinquency services, with the remaining states varying with regard to level of decentralization. Most often, local agencies, such as county governments, are responsible for management of detention facilities, intake screening following arrest, predisposition investigation, and probation supervision. In these cases, the state exercises jurisdiction over correctional institutions, aftercare, and transition services (Snyder & Sickmund, 2006).

The process by which juveniles who violate the law are referred to the justice system varies from state to state (Redding, 2008; Redding & Morozski, 2005). However, commonalities exist regarding the decisions that courts must make. The Department of Justice's Office of Juvenile Justice and Delinquency Prevention (OJJDP) provides a detailed overview of the process by which juveniles are typically referred (Snyder & Sickmund, 2008), the summary of which is as follows. A juvenile referral is a written complaint from law enforcement that details the specific violations of the law. Juveniles may be initially referred to the juvenile system by law enforcement officers, but can also be referred by school personnel, parents, community agencies, or by other individuals who determine that a juvenile's behavior requires intervention from law enforcement. At

the time of arrest, a law enforcement officer chooses whether to process the case through the juvenile justice system and/or divert the matter to an alternative agency, such as a community agency for counseling and/or substance use treatment. If the case is referred to juvenile court, the court's intake department reviews the details of the case to determine whether there is sufficient evidence supporting the allegations. If evidence is lacking, the case may be dismissed. If not, the intake department decides whether to handle the case informally or to file a petition requesting an adjudicatory hearing. Cases handled informally are often dismissed. Cases that are not dismissed generally involve a disposition, in which the juvenile agrees to certain conditions, such as admitting to the offense, victim restitution, curfew, and school attendance, all of which are monitored by probation officer. If the juvenile complies with the conditions set forth in the informal disposition, the case is usually dismissed. If the juvenile fails to comply, the court's intake department may process the case formally and refer the juvenile for an adjudicatory hearing. In such cases, the intake department either files a delinquency petition or files a request for a waiver to transfer the case to adult criminal court. Transfers to the adult criminal system generally occur due to state mandates regarding certain types of offenses (e.g., murder), if a juvenile has committed a certain number of felonies (e.g. California's "three strikes" law), or if the county attorney decides that a juvenile is close to 18 years-of-age and chooses to remand the case to adult court.

A delinquency petition contains the allegations and a request that the youth be adjudicated delinquent. During an adjudicatory hearing, facts of the case are reviewed and a judge determines whether a juvenile is adjudicated delinquent or diverted. A

juvenile is adjudicated “delinquent” when he or she has been found guilty of the crime that he or she committed. In the case of diversion, a judge may order a juvenile to complete community service hours, pay restitution fees, or attend counseling.

A court’s intake department or the juvenile’s probation officer may recommend that a juvenile be held in a secure detention facility while his or her case is being processed, if the officer or intake department believes that it is in the child’s or the community’s best interests to do so. If a youth is brought to a detention facility and held there, he or she is said to have a “physical referral.” If a youth is released, with arrest paperwork, to an adult, he or she has received a “paper referral.” Within 24 hours of being held in detention, a detention hearing must take place during which a judge reviews the case and makes a final determination regarding whether the youth should be detained until the adjudicatory hearing. If at an adjudicatory hearing, the juvenile is adjudicated delinquent, the probation department begins to devise a plan for disposition of the case. During this time, the probation officer collects extensive information regarding the child’s history, family and support system, and his or her psychological status. The probation officer uses this information to develop dispositional recommendations that he or she will present at the subsequent dispositional hearing. Dispositional recommendations may include residential treatment or placement of the juvenile, substance abuse counseling, restitution, or continued detention. The prosecutor, the juvenile, and his or her attorney may also present information or dispositional recommendations. After a judge makes a determination regarding a juvenile’s

disposition, subsequent review hearings may be scheduled to monitor the youth's progress and compliance with recommendations made during the disposition.

Detention versus Incarceration

In most states, youth can be detained within juvenile detention settings, “juvenile sections” of adult county jails or incarcerated within prison-like settings within departments of juvenile corrections or in “juvenile sections” of adult prisons. The terms “detention” and “incarceration” as applied to juvenile holding facilities are often used interchangeably. A juvenile detention center typically refers to a secure facility that houses juveniles on a temporary basis prior to adjudication, during pre-disposition, while awaiting placement, or as a disposition or as a sanction (e.g., Alaska Revised Statutes § 7.52.900[12]). Adult jails are holding facilities for individuals who are serving short-term sentences or who are awaiting trial. Juveniles whose cases have been transferred to adult criminal court may be held in a “juvenile section” of a county jail for these reasons. Correctional institutions are secure facilities to which individuals may be committed once they have been adjudicated delinquent (e.g., Alaska Revised Statutes § 7.52.900[11]). Decisions regarding incarceration in a state juvenile correctional facility are generally made on the basis of the risk that a juvenile poses to the community, a last opportunity to provide rehabilitation, and as a means through which a juvenile can be held accountable for his or her offenses (Snyder & Sickmund, 2006). In most states, juveniles can be held in a “juvenile section” of an adult correctional facility if they have been tried as an adult and sentenced to a term of incarceration.

Jurisdictional administration of detention facilities is highly variable and, therefore, no generalization can be made regarding most common practice (Redding, 2008; Redding & Morozski, 2005). For example, state-level executive agencies oversee detention facilities in 13 states, while local executive administrations manage detention facilities in 13 other states. Local county courts have administrative responsibility over detention services in three states, while a state judicial agency oversees these services in two other states. The remaining states have mixed systems in which administration of detention services depends on the region within that particular state ("State Juvenile Justice Profiles," 2009).

Dependency versus Delinquency

Delinquency courts also have jurisdiction over dependency cases in several states. Dependency court involvement refers to families who have come to the attention of state-based child protective services (CPS) due to allegations that a legal guardian perpetrated abuse (physical, sexual, and/or emotional) and/or neglect on a child, or failed to protect a child from harm (Garner, 2004). The following description of the dependency court process is based upon Arizona Revised Statutes (A.R.S. Title 8, Chapter 10, Articles 1-4) and the *Adoption and Safe Families Act* (ASFA, Public Law 105-89, 1997). Allegations are reported by a mandated reporter or concerned party, CPS conducts an investigation and makes a decision regarding whether allegations are substantiated. If allegations are not substantiated, the case is dismissed. If allegations are substantiated, a preliminary protective hearing (PPH) takes place, during which a determination is made regarding whether the child should be removed from the parent's custody. If a child is returned to a

parent's physical custody, the court may require the family to engage in mental health services, and may require CPS to oversee the family's engagement and progress in services. If the court decides that it is in the best interest of the child to be removed from a parent's custody, a team decision meeting takes place, during which a placement determination is made. Children are typically placed either with family members or, in cases in which no family members are available or meet eligibility criteria to take custody of the children, in foster care. Federal adoption law (AFSA, 1997) generally requires that courts make decisions regarding permanency no later than 12 months, though extensions are sometimes permitted in cases in which parents are generally compliant with case plans, but CPS is requesting more time for parents to complete requirements. Permanency refers to the decision to either reunify families or place a child into an adoptive home (AFSA, 1997).

Incidence and Prevalence Data

During the 1920s, the Committee on Uniform Crime Records of the International Association of Chiefs of Police established a voluntary crime data-collection program in order to measure crime in the U.S. at a federal, state, and local level (Federal Bureau of Investigation [FBI], n.d.). In the 1980s, uniform crime reporting codes were revised in order to reflect current law enforcement practices, and the National Incident-Based Reporting System (NIBRS) was created (FBI, 2009). In the late 1980s and early 1990s, incidence of juvenile arrests in the United States peaked, particularly for violent crimes (Snyder & Sickmund, 2006). Since 1994, the rates of juvenile arrests have declined nearly 18%, with 32% decline in arrests for violent crimes since 1994. Between 1984

and 2002, delinquency cases resulting in detention increased by 42%. Drug charges accounted for the largest relative increase in detention involvement, followed by violations against persons, and public order cases. Overall, the proportion of cases resulting in detention involvement remained relatively stable between 1985 and 2002 (Snyder & Sickmund, 2008).

According to the Office of Juvenile Justice and Delinquency Prevention (OJJDP), an estimated 2.11 million arrests were made of persons younger than 18 years-of-age in 2008 (Puzzanchera, 2009). Approximately 4.5% of these arrests were for Violent Crime Index offenses (e.g. murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault) and 20.3% were for Property Crime Index offenses (e.g. burglary, larceny-theft, motor vehicle theft, and arson). The majority of these arrests were for non-index offenses, which include: other assaults, forgery and counterfeiting, fraud, embezzlement, stolen property (buying, receiving, possession), vandalism, weapons, prostitution and commercialized vice, sex offenses (except forcible rape and prostitution), illegal substance violations, gambling, offenses against the family and children, driving under the influence, liquor laws, drunkenness, disorderly conduct, vagrancy, suspicion, curfew and loitering, runaways, and an omnibus category referred to as “all other offenses (except traffic).” (Puzzanchera, 2009)

The most serious charges in half of these 2008 arrests included larceny-theft, simple assault, drug abuse violation, disorderly conduct, or liquor law violation. Nearly 21% of 2008 arrests were due to Property Crime Index charges, which include burglary, larceny-theft, motor vehicle theft, and arson. Nearly 16% of these arrests were drug or alcohol-

related charges. Nearly 12% were due to status offenses, including curfew and loitering violations, and runaway. Approximately 4% of these arrests were for violent crime index charges, which include murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault, which represents a 16% decrease since 1994.

In terms of ethnicity, African-American youth were overrepresented in juvenile arrests in 2008 (Puzzanchera, 2009). For example, with regard to juvenile arrests for violent crimes in 2008, 47% involved Caucasian youth, 52% involved African-American youth, 1% involved Asian youth, and 1% involved Native American youth (Puzzanchera, 2009). For property crime arrests, the proportions were 65% Caucasian, 33% African-American, 2% Asian, and 1% Native American. Uniform crime reporting data do not distinguish Hispanic as a separate ethnic group; the majority of youth with Hispanic ethnicity were classified as racially Caucasian in 2008. With regard to racial disparity in detention involvement, African-American youth were more likely to be detained than any other race, with the greatest overrepresentation being due to person offenses.

With respect to sex, juvenile male and female robbery arrest rates both decreased through the late 1980s and climbed to a peak in the mid-1990s (Puzzanchera, 2009). By 2002, both had fallen to their lowest level since at least 1980. Following these declines, the rates for both males and females increased through 2008 (43% for males and 51% for females). The number of larceny-theft arrests of juvenile females grew 4% while juvenile male arrests declined 29% between 1999 and 2008 (Puzzanchera, 2009). In 2008, females accounted for 30% of all juvenile arrests. The juvenile male arrest rate in 2008 exceeded its 1980 level by 4%, while arrest rate among females exceeded its 1980

rate by 80%. Similarly, while the male arrest rate for simple assault nearly doubled between 1980 and 2008, the female rate more than tripled (Puzzanchera, 2009). With regard to types of offenses committed by males and females, males have been found to be more likely to be arrested for most offenses. However, females accounted for the majority of arrests for prostitution and other commercialized vice offenses, as well as for running away (Puzzanchera, 2009).

Purpose of Study

Research examining variables that contribute to violent offending in juvenile offenders has been limited by representativeness of study samples. In particular, there is a paucity of research on variables that contribute to violent offending in populations with a higher percentage of Hispanic youth. In addition, studies have largely focused on male samples from East and Midwest U.S. regions (Farrington, Loeber, Jolliffe, Love, Stouthamer-Loeber, & Kalb, 2001; Farrington, Loeber, & Stouthamer-Loeber, 2003; Farrington, Loeber, Yin, & Anderson, 2002; Hawkins, Herrenkohl, Farrington, Brewer, Catalano, & Harachi, 1998; Loeber & Farrington, 1998; Loeber & Keenan, 1994; Stouthamer-Loeber, Loeber, Farrington, & Wikstrom, 2002; Stouthamer-Loeber, Wei, Homish, & Loeber, 2002). Such investigations have typically included samples that contain a small percentage of Hispanics, and/or have categorized Hispanic youth as Caucasian or “other” (e.g., Barrett, Katsiyannis, & Zhang, 2006). This, in turn, may misrepresent the degree to which factors such as ethnicity, sex, socioeconomic status, dependency involvement, special education diagnosis, the presence of a learning

disability, the presence of an emotional disability, academic underperformance, history of illegal substance violation, or recidivism may contribute to violent offending.

Some studies suggest that risk factors may vary considerably according to ethnicity (e.g., Schwalbe, Fraser, Day, & Cooley, 2006). For example, a study by Smith and Krohn (1995) found that familial factors may play a more prominent role in the development of serious delinquency in Hispanic juveniles when compared to other racial or cultural groups (Smith & Krohn, 1995). However, the racial and cultural composition of the sample included 17.3% Hispanic, 68.9% African-American, and 13.8% Caucasian youth. In this regard, research is needed to examine whether risk factors identified in studies involving primarily African American juvenile offenders are also found in juvenile offenders in which the primary ethnic group is Hispanic.

The disproportionate minority contact observed in the juvenile justice system necessitates further inquiry into factors contributing to youth violence such that community programs, schools, and regional courts can address the needs of minority youth (Cabaniss, Frabutt, Kendrick, & Arbuckle, 2007). Further, given that U.S. Census projections forecast an approximate increase of approximately 20% increase in the Hispanic population by 2020, it is important that researchers, policymakers, and law enforcement develop a better understanding of the factors contributing to youth delinquency to ensure adequacy of prevention and intervention programs, and to meet the needs of the changing demographics of the U.S.

The purpose of the study was therefore to examine whether risk factors identified in previous research with primarily male African American and Caucasian juvenile

offenders can significantly classify violent versus non-violent offending in an ethnically diverse sample of male and female adolescent juvenile delinquents. Based on previous research, the specific variables examined include economic disadvantage, grade point average (GPA), sex, dependency involvement, special education diagnosis, specific learning disability diagnosis, emotional disability diagnosis, illegal substance violation, recidivism, and ethnicity (see, for example, Blum, Ireland, & Blum, 2003; Broidy, Nagin, Tremblay, Bates, Brame, & Dodge, 2003; Farrington et al., 2003; Fazel, Doll, & Langstrom, 2008; Jackson & LeCroy, 2009; Katsiyannis, Ryan, Zhang, & Spann, 2008; Kempf-Leonard, 2007; Lemmon, 2006; McCord, Widom, & Crowell, 2001; Moffitt, 1990; Morgan & Lilienfeld, 2000; Morris & Morris, 2006; Neff & Waite, 2007; Otnow-Lewis et al., 1985; Rutherford & Nelson, 2005; Shelley-Tremblay, O'Brien, & Langhinrichsen-Rohling, 2007; Waldie & Spreen, 2001). Previous research has, in many cases, excluded females in the samples studied, did not include Hispanics or included a disproportionately low percentage of Hispanics, and/or did not separate violent from non-violent crimes in terms of risk factors. Results of the present study may, therefore, assist in classifying youth who are at risk for violent offending and provide information regarding strategies for identification and prevention. In addition, identifying these factors may ultimately guide more targeted intervention strategies. Finally, it is anticipated that this study will add to the growing body of literature on youth violence by promoting understanding of the differences between violent and non-violent offenders.

Hypotheses

The following hypotheses were proposed to investigate whether several factors significantly contributed to the classification of violent versus non-violent offending in a diverse sample of juvenile delinquents:

Hypothesis I: H_0 : Economic disadvantage will not significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis II: H_0 : Grade point average will not significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis III: H_1 : Sex will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis IV: H_1 : Dependency involvement will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis V: H_1 : Special education diagnosis will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis VI: H_1 : The existence of a specific learning disability (SLD) diagnosis will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis VII: H_1 : The existence of an emotional disability (ED) diagnosis will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis VIII: H_1 : History of illegal substance violation will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis IX: H_1 : Recidivism will significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents

Hypothesis X: H_0 : There will be no significant differences between observed versus expected frequency of violent versus non-violent offending across different ethnicity categories.

CHAPTER 2

REVIEW OF RELEVANT RESEARCH

Various explanations of juvenile delinquency have been proposed throughout the ages. While early theories were generally founded upon observations and conventional wisdom of the time, contemporary theorists have sought to formulate explanations with empirical bases. Most contemporary theories have attempted to integrate and/or delineate variables speculated to be predictive of delinquent behaviors. However, these theories have varied in their level of empirical support. The presumption underlying these theories is that they provide guidance to researchers, policy makers, law enforcement officials, and clinicians regarding how to assess, prevent, and treat juvenile offenders. The etiological theories discussed most frequently in the literature include classical, biological, psychological, sociological, and control theories.

Etiology of Juvenile Delinquency

Classical Theory

The classical explanation of delinquent behavior is rooted in the field of criminology, and posits that all individuals, including children, act on the basis of free will and rational choice toward the pursuit of a particular goal—generally to avoid pain and to maximize gratification (Inciardi, 1978; Vold & Bernard, 1986). A major assumption of this school of thought is that all people possess the capacity for rational choice and the opportunity to exercise free will (Shoemaker, 2010). Punishment is therefore an appropriate deterrent for crime, as an individual is expected to decide that the consequences of his or her actions outweigh the benefits that can be reaped by

committing an offense. According to classical theory, the law violator and the law abider may have similar objectives, but the former will choose to evade the law to achieve them, while the latter operates within the bounds of legal limits (Gottfredson & Hirschi, 1990). Critics of the classical position have challenged these assertions for a variety of reasons. For example, while many individuals are often observed to engage in free will and rational choice, their actions may be influenced by a variety of individual, environmental, and systemic factors, such as cognitive ability, age, and socioeconomic status (Vold & Bernard, 1986). Further, the classical position does not address the issue of why some individuals are motivated to pursue goals through illegal means and others are not (Shoemaker, 2010).

Neoclassical theory was proposed as an extension of classical theory, and accounted for a wide array of mitigating circumstances, such as age (Shoemaker, 2010). This school of thought is a reflection of the development of the juvenile justice system in that juveniles were deemed less culpable for law violations because of their age, more amenable to change, and thus rehabilitation rather than punishment was considered a more appropriate response to delinquency (Curran & Renzetti, 1994).

Rational choice theory is the most recently proposed iteration of classical theory, and posits that individuals base their choices on calculations, rationality, and the pleasure-pain principle (Cornish & Clarke, 1986). However, rational choice theory assumes broad differences among motives of behavior and the influence of reasoning on human behavior, and encourages empirical investigation into these factors (Cornish & Clarke, 1986). Critics, on the other hand, view rational choice theory as too simplistic

and fails to explain the notion that deterrence and rational choice appear to play an inconsistent role in an individual's decision to commit crime, and the relative contribution of pain versus pleasure is still not explained (Wright, Caspi, Moffitt, & Paternoster, 2004).

Biological Theory

Biological theories of delinquency date back to approximately 500 years B.C.E., and can be traced to the work of Hippocrates (Sheldon, 1944). Whereas early biological theories, proposed by theorists such as Cesare Lombroso in the late 19th century (Siegel, 2006), assumed a direct causal link between an internal mechanism or set of mechanisms and delinquent behavior, contemporary theories (see, for example, Denno, 1990) propose that a reciprocal interaction exists between various predisposing internal mechanisms and environmental factors, which ultimately contributes to delinquent behavior. Modern biological theories fall into two broad categories, which include somatotype and inheritance.

The term *somatotype* refers to the shape and structure of various physical constitution characteristics relative to one another, such as head size, arm and leg length, bone structure, and musculature (Sheldon, 1944). William Sheldon made the first known attempt to associate constitutional traits with criminality in a systemic manner (Shoemaker, 2010). Sheldon borrowed the three basic physique types from Ernst Kretschmer (1921)--*endomorph*, *ectomorph*, and *mesomorph* – and identified a predominance of the *mesomorph* (defined as muscular and hard) body type in a sample of delinquent males (Sheldon, 1949). Subsequent researchers also concluded that a

statistically higher percentage of delinquents were characterized by the mesomorphic physique when compared to non-delinquents (Cortes & Gatti, 1972; Glueck & Glueck, 1956). However, the most recent research efforts in this area found an even higher statistical association between mesomorphy and achievement motivation (Cortes & Gatti, 1972). Further, researchers were unable to identify a specific physiological connection between body type and behavior. A logically coherent somatotype theory has not yet been established, and thus the theoretical connection between body type and delinquency remains in question.

Biological theories that propose an association between inheritance and delinquent behavior assume that behavior in general is determined by factors that are transmitted from parent to child (Fink, 1938). A key concept in inheritance theories is *concordance rate*, which refers to the agreement in behavioral outcomes among pairs of individuals, such as twins and siblings (Tehrani & Mednick, 2000). Illustratively, delinquent behavior is considered concordant if both members of the twin or sibling pair exhibit these behaviors. Numerous studies of criminal behavior among twins have been published since the 1930s, the majority of which have concluded that the highest concordance rates are found among monozygotic versus dizygotic twins or sibling pairs (Cortes & Gatti, 1972; Vold & Bernard, 1986). A recent meta-analysis examining a total of 38 studies dated from 1996-2006 has also concluded that there is strong empirical support for a genetic contribution to antisocial behavior (Ferguson, 2010).

However, despite the empirical support for various biological explanations for delinquent behavior, the majority of studies has focused on adult criminal behavior,

which does not explain the phenomenon of adolescent-limited juvenile offenders, who represent the majority of the delinquent population (Moffitt, 2003). Further, while biological theorists have acknowledged that environmental factors influence the relative biological contribution to delinquent behavior, researchers have not yet been able to adequately control for these effects (Rowe, 2002).

Recent trends in biological explanations of delinquency have focused on the relative contributions of neuropsychological functioning as well as conditionability. With regard to the former, theories regarding the relationship between delinquency and executive function deficits have been proposed in the literature with varying levels of empirical support (Bechara, Damasio, Damasio, & Lee, 1999; Bechara, Tranel, & Damasio, 2000; Damasio, Grabowski, Bechara, Damasio, Parvizi, & Hichwa, 2000; Eslinger, Pennington, & Page, 1999; Giancola, 1995; Raine, 2002). Prefrontal damage in particular has been implicated in the development of youth violence; however, the mechanisms of executive dysfunction predisposing individuals to this behavior remain unclear (Ishikawa & Raine, 2003). Researchers generally agree that such deficits are vulnerabilities that, in combination with ecological factors, predispose individuals to delinquent behavior (Farrington & Loeber, 2000).

Perhaps the best-known theory regarding the relationship between delinquency and the executive system has been proposed by Moffitt (Moffitt, 1990, 2003; Moffitt & Caspi, 2001). This model attributes neuroanatomical and social maturation processes to differing delinquency classifications that follow two developmental trajectories—"life-course-persistent" and "adolescence-limited." Life-course-persistent is said to begin

early in life and arises out of a combination of high-risk, difficult behavioral patterns, and a high-risk social environment. Adolescent-limited delinquency, according to Moffitt's theory, surfaces during puberty as a reaction to psychological discomfort associated with desiring more autonomy than is appropriate for age and developmental level.

Structural and functional changes in the frontal systems occur in tandem with these maturational changes, continuing through postadolescence. Moffitt (1990, 2003; Moffitt & Caspi, 2001) suggests that life-course-persistent delinquent behavior arises from an interaction between neurodevelopmental or neurobiological and environmental risk factors that interfere with development of frontal gray matter and maturation of the frontal systems. These disruptions may result in difficulties with inhibition and decreased adherence to rules and structure, which may lead to peer rejection and formation of friendships with delinquent peers, poor academic performance, and a rejection of socially appropriate behavior. A reduction in gray matter during postadolescence is said to be selective, guided by an individual's environment and experiences. Therefore, repeated antisocial behavior in adolescence may result in strengthening of neural connections that accommodate such behaviors, thus giving rise to delinquent behavior persisting into adulthood.

With regard to conditionability theories, psychophysiological studies have provided evidence supporting poor fear conditioning in antisocial groups. For example, individuals with medial frontal and subcortical damage have shown a reduced capacity for anticipatory autonomic responses, perseverating on suboptimal choices even when they are able to identify more appropriate or advantageous decisions (Bechara, Damasio,

& Damasio, 2000; Bechara et al., 1999; Bechara, Tranel et al., 2000). Adolescent male subjects with psychopathy have also exhibited these impairments and risky decision-making tendencies when compared to controls with no psychopathy (Roussy & Toupin, 2000).

Psychological Theories

Psychological theories of delinquency hypothesize that individual differences in intelligence, personality configurations, and psychopathology distinguish delinquents from non-delinquent youth, and thus can either cause or predict delinquent and violent behavior (Bartol & Bartol, 2005). Psychological explanations of delinquent behaviors are based upon one of the following theoretical approaches: psychoanalytic theory, personality trait theory, and social learning theories, all of which have some common assumptions. Psychological theories of delinquency assert that (1) delinquent behavior is a manifestation of internal psychological disturbances, (2) these disturbances likely began to develop in early childhood, and (3) while environmental factors may play a moderating role in the development of delinquent behavior, strategies to eradicate delinquent behavior must focus on resolving the internal disturbance (Shoemaker, 2010).

The psychoanalytic theory of delinquency is based on the writings of Sigmund Freud (1900/1953) and includes the following assumptions: (1) individuals develop in stages of sexual development; (2) abnormalities may occur that present conflict between an individual's developing personality, generally during preadolescence; (3) these conflicts stem from the dynamic interaction between drives and societal controls; (4) these conflicts are relegated to the realm of the unconscious, due to the intrapsychic

discomfort associated with maintaining conscious awareness of them; and (5) the individual develops defense mechanisms in response to these conflicts, which may lead to abnormal personality patterns (Freud, 1920, 1930). Delinquency, according to the psychoanalytic perspective, is one behavioral manifestation of these abnormal personality patterns (Friedlander, 1947). It is therefore presumed that delinquency is a symptom of underlying conflicts and that such conflicts, if left untreated, may progress, comparable to a disease process (Aichhorn, 1965; Healy & Bronner, 1936).

Critics of the psychoanalytic explanation of delinquency have challenged key concepts of the theory, claiming that the existence of key concepts such as facets of the unconscious cannot be directly observed, and therefore the inference of hidden motives are highly subjective, as are treatment techniques (Eysenck, 1963). Further, the approach has been criticized for emphasizing early childhood experiences as explanations for present behaviors (Grünbaum, 1984). Moreover, the connection between unconscious conflicts, repressed experiences, and delinquency is tautological in that the approach assumes that delinquent behavior is, in and of itself, evidence of unconscious conflicts.

The personality trait theory, or trait theory, explanation of delinquency behavior (Eysenck, 1977) shares some general assumptions with psychoanalytic theory, namely, (1) that delinquency is a manifestation of underlying conflicts in the individual's psychological composition; (2) that these conflicts began to emerge in early childhood; and (3) delinquency is the product of an ostensibly negative cause. Unlike the psychoanalytic approach, personality theory assumes that a specific trait, or set of traits, typifies an individual's general perspective, which manifests in an overall pattern of

behavior (Caspi & Shiner, 2006). Research supporting trait theory has therefore sought to identify personality traits associated with delinquent behavior. Eysenck (1977) articulated a personality trait-based theory of delinquent behavior based upon three dimensions of personality: Psychoticism, Extraversion, and Neuroticism, the findings of which recent replication studies failed to confirm (Van Dam, De Bruyn, & Janssens, 2007). Researchers have also attempted to delineate personality traits among juvenile offenders using standardized assessments of personality (Archer, Bolinsky, Morton, & Farris, 2002; Morton, Farris, & Brenowitz, 2002; Taylor, Kemper, Loney, & Kistner, 2006). However, findings of these studies yielded only modest predictive power and, therefore, should be interpreted with caution.

Contrary to theories that attribute delinquency strictly to internal mechanisms, Albert Bandura (1977) posited that human learning is a continuous reciprocal interaction of cognitive, behavioral, and environmental factors. Sometimes called observational learning, social learning theory focuses on behavior modeling, in which the child observes and then imitates the behavior of adults or other children (Bandura, 1977). In his research, Bandura examined how violence portrayed in mass media can negatively influence the behavior of children. Specifically, he observed that some children imitated the behavior of characters they observed on the television screen. Based upon these observations, Bandura concluded that delinquent behavior is the product of aggressive behaviors being modeled and imitated. Several studies have revealed support for this theory. For example, research has supported that the adolescents whose peer groups included delinquent youth were likely to engage in law violations (Ardelt & Day, 2002;

Kim & Goto, 2000). Research has also found an association between delinquent behavior and family criminality (Farrington et al., 2001).

Sociological Theories

Sociological theories of delinquency generally posit that delinquent behavior is a reflection of the social context and, therefore, is a result of the individual's response to various environmental factors (Shaw & McKay, 1969). Social structures within society, according to this perspective, therefore may predispose individuals to engage in unlawful acts. The most commonly discussed sociological theories of delinquency in the literature include social disorganization, anomie, and general strain theory (Shoemaker, 2010).

Social disorganization explanations of delinquency (e.g., Entner Wright, Caspi, Moffitt, Miech, & Silva, 1999; Shaw & McKay, 1969) postulate that delinquency is predominantly caused by societal structures that are in a state of disorganization, which leads to a breakdown in a community's ability to maintain social order, thus resulting in criminal values superseding more conventional values. An individual's subjective experience of the uncertainty and confusion associated with societal disarray, according to this perspective, render him or her susceptible to delinquent behavior, with personal and situational factors playing a subordinate role. A long-held assumption in the sociology literature is that delinquent behavior is a product of the social context, and thus socioeconomic status (SES) has typically played a fundamental role in etiological theories of delinquent behavior (Entner Wright et al., 1999). Theorists have posited an inverse relationship between SES and engagement in delinquent behavior, and several studies have ostensibly supported this association (e.g., Lowenkamp, Cullen, & Pratt,

2003; Veysey & Messner, 1999), and thus have interpreted results as supportive of social disorganization theory. However, one of the problems with this assumption is the supposition that low SES regions have inherent social disorganization (Sampson & Groves, 1989). Further, a closer examination of empirical studies that have purportedly supported social disorganization theory reveals a weak correlation between SES factors and delinquent behavior (Entner Wright et al., 1999).

“Anomie” as a sociological construct is similar to social disorganization, but conceptually distinct in that it refers to the macrosocial environment rather than discrete, localized physical regions (Durkheim, 1933). Emile Durkheim borrowed the term anomie from French philosopher Jean-Marie Guyau, and reconceptualized it to represent a state of painful derangement, which arises from society’s failure to moderate the collective desire for infinite economic acquisition, which ultimately quells an individual’s opportunity to become a productive member of society (Meštrović & Brown, 1985). The theory of anomie, as it pertains to delinquent behavior, posits that individuals violate the law due to economic necessity or out of frustration with their circumstances and society. Durkheim’s theory was modified over time, and was most recently reformulated in the 1990s and 2000s by Robert Agnew and colleagues, who referred to it as general strain theory (Agnew, 1992, 2006, 2007; Agnew & White, 1992).

Similar to anomie theory, general strain theory postulates that strains or stressors in the individual’s environment predispose an individual to delinquent behavior. However, Agnew emphasized the connection between an individual’s inability to escape his or her aversive environment and delinquent acts, arguing that the frustration

associated with socioeconomic immobilization leads to delinquent acts rather than societal factors themselves (Agnew, 1992). In this regard, Agnew's theory emphasizes the adaptation of the individual to various stressors rather than micro- or macrosocial sources of stress *per se*. Agnew (1992) acknowledged that not all youth who are exposed to stressors and strains engage in delinquent behavior, and proposed that protective factors, such as values, self-esteem, intelligence, natural supports may play a moderating role. Agnew identified three kinds of strain: (1) the discrepancy between societal means and goals; (2) loss of positive associations in an individual's life; and (3) negative events, such as victimization, disruption of attachment bonds, or intimidation by another (Agnew, 1992). Agnew's theory was tested in a sample of 12- and 15-year-old males and females, and results support his conclusions, even when controlling for factors such as relationships with deviant peers (Agnew & White, 1992). Recent empirical investigations have reached similar conclusions (Broidy, 2001; Ostrowsky & Messner, 2005; Paternoster & Mazerolle, 1994). However, others have criticized Agnew's theory on the basis that general strain theory often overlaps other theoretical constructs, such as control theory, which renders identifying the unique contribution of general strain theory difficult (Froggio, 2007). Further, others have criticized the theory for its lack of specification of mechanisms that lead directly to delinquent behavior (Botchkovar, Tittle, & Antonaccio, 2009).

Control Theory

Control theories postulate that delinquency is associated with an absence of significant relationships with conventional others and institutions (Hirschi, 1969).

According to this theory, delinquency is more likely when adolescents lack attachment to parents and other significant institutions of society, when parents fail to monitor and effectively sanction deviance, and when adolescents' actual or anticipated investment in conventional society is minimal (Hirschi, 1969). In this regard, adolescents who are securely attached are likely to experience a greater degree of social control over their behavior than those who are not involved in such relationships. The theory seeks to understand the ways in which it is possible to reduce the likelihood of criminality developing in individuals. Hirschi (1969) proposed four different sources of control over delinquent behavior, including: (1) direct, which encompasses punishment from authority figures; (2) indirect, which refers to the conscience or superego; (3) internal, which arises from motivation to placate influential others; and (4) needs satisfaction.

Control theories of delinquency have been supported in the literature. For example, Delisi and Vaughn (2008) examined self-control in a sample of 723 incarcerated youth and found that career offenders had significantly lower levels of self control when compared to non-career offenders, and that low self-control was the strongest predictor of career criminality. The researchers further report that these findings far exceeded the impact of age, ethnicity, socioeconomic status, mental illness, attention deficit hyperactivity disorder diagnosis, or trauma experience. However, questions about the theory remain unresolved— such as the theory's assumption that self-control is connected to parenting skills as well as other contextual factors (Shoemaker, 2010).

Potential Risk Factors Associated with Violent and Non-violent Juvenile Delinquency

In addition to etiological theories, researchers have also examined a variety of characteristics and risk factors associated with both violent and non-violent delinquency. A risk factor is typically defined as a characteristic that is presumed to be associated with an increased probability that a juvenile will engage in criminal activity, even when potential confounding variables have been controlled (Farrington et al., 2002; Hoge, 2001; Kazdin, Kraemer, Kessler, Kupfer, & Offord, 1997; Mrazek & Haggerty, 1994). Several investigations have identified a number of risk factors associated with delinquency, including being a male, having ethnic minority status, economic disadvantage, child maltreatment and dependency involvement, special education diagnosis, the presence of a learning disability, the presence of an emotional disability, academic underperformance, illegal substance violation, and recidivism (McCord et al., 2001; Moffitt, 1990; Morgan & Lilienfeld, 2000; Morris & Morris, 2006; Otnow-Lewis et al., 1985; Rutherford & Nelson, 2005; Shelley-Tremblay et al., 2007; Waldie & Spreen, 2001). However, the causal status of known risk factors remains to be clarified, and no single risk factor can fully explain violent or non-violent delinquent behavior. Rather, the greater the number of risk factors (e.g., poor parental supervision coupled with poor academic performance) or the greater the number of risk factor domains (e.g., risk in the family and the school), the greater the likelihood of delinquent behavior (Loeber & Farrington, 1998; Stouthamer-Loeber, Loeber et al., 2002).

Sex

Research examining sex differences in risk factors for delinquent behaviors has suggested that males and females demonstrate unique developmental pathways (Broidy et al., 2003; Fagan, Van Horn, Hawkins, & Arthur, 2007; Gorman-Smith & Loeber, 2005; Hart, O'Toole, Price-Sharps, & Shaffer, 2007; Kroneman, Loeber, & Hipwell, 2004; Liu & Kaplan, 2004; Piquero & Sealock, 2004). For example, a multi-national study conducted by Fagan and colleagues (2007) examined risk factors in 7,000 adolescents and found a significant relationship between early aggressive behaviors and continuous delinquency among males only. Another study found that developmental trajectories yielding delinquent outcomes extend through interpersonal relationships in females and through academic and peer domains in males (Fagan et al., 2007). One study examined sex differences in risk factors for violent juvenile and found that females had significantly more risk factors than males (Hart et al., 2007). Another study by Whitney, Renner, and Herrenkohl (2010) examined sex differences in risk and protective factors associated with adolescent delinquency and found that SES and exposure to domestic violence were the strongest risk factors for males, and IQ and being the victim of child physical abuse were the strongest risk factors in females.

Ethnicity

The overrepresentation of minorities in the juvenile justice system has garnered considerable attention in the research literature, as well as at a policy level (Olatunde, 2007). Several studies have reported significantly higher instances of minority contact with the juvenile system in several offense categories (Kempf-Leonard, 2007). However,

examining ethnicity as a potential risk factor among the juvenile population has been complicated by inconsistent definitions of the inclusion criteria used for classifying youth into the various ethnic groups, as well as difficulties associated with controlling for variables such as socioeconomic status (Shader, 2003). Further, the majority of studies that have examined ethnicity representation in the juvenile population have consisted of African-American and Caucasian comparisons (Jackson & LeCroy, 2009). In this regard, national crime index data have not accounted for Hispanic representation among the delinquent population; rather, Hispanic youth have been more typically categorized as Caucasian (Snyder & Sickmund, 2006). Unraveling the effects of ethnicity, SES, and neighborhood factors on arrest/referral is challenging, given the overlap of these individual and family characteristics and environments. Future research is needed to investigate whether membership in a particular ethnic group is actually a risk factor when controlling for other factors.

Economic Disadvantage

Several studies have identified economic disadvantage, or low socioeconomic status (SES), as a risk factor for juvenile delinquency (Farrington et al., 2003; Leventhal & Brooks-Gunn, 2000; Lynham, Caspi, Moffitt, Wikstrom, Loeber, & Novak, 2000). Others have questioned this association, arguing that poverty that is geographically concentrated, versus poverty alone, is a risk factor (Bjerk, 2007; Jarjoura, Triplett, & Brinker, 2002). One of the difficulties associated with investigating SES as a potential risk factor lies in the approach researchers take to measuring this variable. For example, Alltucker and colleagues (2006) measured SES using a four-factor model, which derives

an overall score from parent education, occupation, sex, and marital status. Using this index, Alltucker and colleagues did not find SES to be significantly correlated with delinquent behavior (e.g., Alltucker, Bullis, Close, & Yovanoff, 2006). In contrast, other investigations have found that both neighborhood poverty and family SES were related to juvenile arrest and adjudication (Farrington et al., 2003; Fergusson, Horwood, & Swain-Campbell, 2003; Hay, Fortson, Hollist, Altheimer, & Schaible, 2007; Leiber & Jamieson, 1995). Other researchers argued that SES alone does not account for significantly higher incidence of delinquency, but has a significant interaction effect with other variables, such as low academic performance and psychopathology (Anthony, 2008; Jarvelin, Laara, Rantakallio, Moilanen, & Isohanni, 1994).

Special Education Diagnosis

The overrepresentation of youth with disabilities in the juvenile justice system has been frequently reported in the research literature over the past 10-15 years, with prevalence estimates of juvenile offenders having a disability ranging from 32 to 82% (Burrell & Warboys, 2000; Leone, Zaremba, Chapin, & Iseli, 1995; Office of Special Education Programs [OSEP], 2003; Stenhjem, 2005; Virginia Juvenile Justice Summit on Children and Youth with Disabilities, 2001). However, prevalence estimates of disabilities among incarcerated youth vary across the research literature, due to inconsistent definitions of and approaches toward the assessment of disability, as well as limited availability of special education records (Rutherford, Bullis, Anderson, & Griller-Clark, 2002). The number of youth with disabilities in juvenile detention and correctional facilities increased by 28% between 1993 and 1997 (U.S. Department of Education,

2001). However, it remains unknown whether this increase reflects an actual change in the number of referred youth with disabilities or differences in how disability is conceptualized and assessed. With respect to disability category, research suggests that specific learning disability and emotional disability are the most common types of disabilities among delinquent youth (Bullis & Yovanoff, 2005; Burrell & Warboys, 2000).

Specific Learning Disability. A specific learning disability (SLD) is defined as “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include learning problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage” (20 U.S.C. 1401(3); 1401(30); IDEIA, 2004).

A study examining the prevalence of disabilities among a sample of incarcerated juveniles found that 50% met diagnostic criteria for specific learning disability (Snyder & Sickmund, 1995). An earlier study reported nearly 50% of a sample of incarcerated juveniles met diagnostic criteria for a learning disability (Podboy & Mallory, 1979). In contrast, reported estimates of children with learning disabilities in the general population are approximately 5% (U.S. Department of Education, 1997; 2002). Studies investigating the relationship between learning disabilities and violent offenses suggest a

significantly higher proportion of juvenile delinquents with learning disabilities commit violent offenses (Blum et al., 2003). In this regard, researchers speculate that juveniles with learning disabilities demonstrate difficulties with impulse control and verbal mediation skills, and thus have more difficulty resisting involvement in delinquent acts, and may also be treated differently at the time of their arrest as a result of relative weaknesses in verbal mediation skills (Morrison & Cosden, 1997).

With regard to the basic psychological processes thought to underlie learning disabilities, several studies have provided evidence that delinquents generally exhibit poorer performance on various cognitive measures (e.g., Moffitt, 1990; Nigg, Quamma, Greenberg, & Kusche, 1999). For example, performance on several cognitive tasks was compared between a group of court-referred juveniles residing in a treatment center and a group of nondelinquent controls (Lueger & Gill, 1990). Compared to controls, court-referred youth demonstrated impoverished performance on tasks that the authors described as sensitive to frontal lobe dysfunction. Another study compared delinquent and nondelinquent youth's performance on an array of cognitive tasks (Wolff, Waber, Bauermeister, Cohen, & Ferber, 1982). Significant performance differences were found, even after controlling for IQ. Delinquent youth demonstrated inferior performance on tasks involving attentional vigilance, spatial ability, and interference.

Planning deficits among delinquent groups have been found in empirical investigations (e.g., Moffitt, 1998; Naglieri & Das, 1997), even when controlling for ADHD (e.g., Hughes, White, Sharpen, & Dunn, 2000; Nigg, 2001; Séguin, Boulerice, Harden, Tremblay, & Pihl, 1999; Toupin, Dery, Pauze, Mercier, & Fortin, 2000).

Conversely, Hurt and Naglieri (1992) compared 30 delinquent males' performance to 30 controls on several executive tasks and found no significant differences on any measures of planning between the two groups.

Emotional Disability. Within the educational system, the presence of a psychiatric disorder is recognized when it significantly impairs a child's ability to function in an educational setting (IDEIA, 2004). Under federal law, a youth meets eligibility criteria for an emotional disability (ED) when she or he exhibits one or more of the following characteristics: (1) an inability to learn that cannot be explained by intellectual, sensory, or health factors; (2) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (3) inappropriate types of behavior or feelings under normal circumstances; (4) a general pervasive mood of unhappiness or depression; and/or (5) a tendency to develop physical symptoms or fears associated with personal or school problems. Of note, states vary with regard to whether a youth with a psychiatric diagnosis of conduct disorder can meet eligibility criteria for ED.

Reported incidence of ED among juvenile offenders is approximately 47.7% (Quinn, Rutherford, Leone, Osher, & Poirier, 2005). Research has also found that a substantial proportion of individuals in the juvenile delinquency population meet diagnostic criteria for a psychiatric disorder, with estimates ranging from 40-70% (Fazel et al., 2008; Mallett, Dare, & Seck, 2009; Skowrya & Coccozza, 2006). Several mental health conditions have been linked empirically to juvenile delinquency (Courneau & Lanctôt, 2004; Loeber & Keenan, 1994). For example, hyperactivity and attention deficits have been linked to risk-taking behaviors and violent offending (Hawkins et al.,

1998). Childhood depression has been linked to stealing and physical aggression (Loeber & Keenan, 1994; Mallett et al., 2009). The most common psychiatric disorders found among the juvenile delinquency population include externalizing disorders such as Attention Deficit/Hyperactivity Disorder, Conduct Disorder, and Oppositional Defiant Disorder, as well as substance use, anxiety, and mood disorders (Skowrya & Coccozza, 2006). Even when controlling for substance use and conduct problems, researchers have found that approximately 45% of youth in the delinquency population meet diagnostic criteria for a psychiatric disorder (Loeber & Keenan, 1994; Skowrya & Coccozza, 2006).

Academic Performance

There is a long history of research supporting the relationship between delinquency and low academic performance, with studies reporting that academic achievement is significantly lower in the delinquency population when compared to non-delinquent peers (Denno, 1990; Farrington, 1987; Hinshaw, 1992; Hux, Bond, Skinner, Belau, & Sanger, 1998; Katsiyannis et al., 2008; Zamora, 2005). Several researchers have suggested that juveniles who commit more severe offenses and who recidivate demonstrate a higher incidence of academic failure (Shelley-Tremblay et al., 2007). Youth who commit violent offenses have significantly higher incidence of reading and mathematics problems when compared to delinquents who have committed non-violent offenses (Beebe & Mueller, 1993; Katsiyannis et al., 2008; Shelley-Tremblay et al., 2007). Studies have suggested that over half of juveniles in corrections are reading at least four levels below grade level (Virginia Juvenile Justice Summit on Children and Youth with Disabilities, 2001), and perform significantly lower on standardized tests of

reading than non-delinquent peers (Baltodano, Harris, & Rutherford, 2005). Further, youth who drop out of school show significantly higher incidence of juvenile justice referrals when compared to youth who remain in school (Snyder & Sickmund, 2006).

Child Maltreatment and Dependency

The research literature has yielded inconsistent findings regarding the relationship between child maltreatment and delinquency. Several studies have supported the link between increased risk of aggression and juvenile delinquency in victims of abuse and neglect (e.g., Hawkins et al., 1998; Lemmon, 2006; Mersky & Reynolds, 2007; Stouthamer-Loeber, Wei et al., 2002). For example, Lemmon (2006) found that maltreatment recurrence was a significant factor in explaining initiation, continuation, and severity of delinquency, even when statistically controlling for other factors such as social class, geographic location, and race. However, others have deemed the relationship between child maltreatment and delinquent behavior more complex. For example, one study examined the likelihood of children who received child welfare services to be detained for serious and violent offenses versus those whose parents had unsubstantiated allegations of abuse and neglect (Jonson-Reid & Barth, 2000). Results of the study suggested that rate of incarceration was highest for females who were placed in foster care or group homes. The study also found that children who experienced neglect were more likely to be incarcerated for delinquent acts than those who were victims of physical or sexual abuse. The authors concluded that the relationship between involvement in the child welfare system and delinquency was complex, and deemed sex,

reason for referral to child welfare services, and whether the child received services during out-of-home placement influential factors.

Research examining whether cultural factors may influence the relationship between child maltreatment and delinquent behavior is limited, though extent studies suggest that variation exists among ethnic groups (Dimmitt, 1995; Perez, 2001). For example, Perez (2001) examined the relationship between history of maltreatment and three measures of delinquency in Mexican-American and non-Hispanic white adolescents. Results of the study suggested that the effect of physical abuse on likelihood of involvement in property, violent, and sexual offenses was similar for both groups, but that the effect of sexual abuse on likelihood of violent offending was more pronounced for non-Hispanic white groups.

Substance Use

Substance use among juveniles has generally been viewed as a subset of delinquent behavior, although it is often distinguished from other forms of delinquency that involve offenses against persons and property (Neff & Waite, 2007). Research suggests that alcohol and illicit substance use among children and adolescents are predictors of other forms of delinquency, even when controlling for sociodemographic factors (Barnes, Welte, & Hoffman, 2002). Accordingly, patterns of extensive substance use have been found among court-referred youth, with estimates as high as 96% for marijuana and 89% for alcohol use (Lebeau-Craven, Stein, Barnett, Colby, Smith, & Canto, 2003). Results of a meta-analytic study examining risk factors for youth violence

in adolescents revealed that the strongest predictors of violent offending included history of committing non-violent offenses as well as illegal substance violations (Lipsey, 1998).

Recidivism

Definitions of recidivism vary widely from state to state. For example, Oregon defines a “chronic offender” as a juvenile who has been referred for three or more times within a 12-month period (Oregon Youth Authority, 2006). On the other hand, Idaho defines recidivism as being adjudicated delinquent for a new offense that is neither a status offense nor a probation violation (Idaho Department of Juvenile Corrections, "Juvenile recidivism in Idaho," 2008). Due to inconsistent definitions and varying conceptualizations of recidivism, empirical investigation into its incidence, relationship to other variables, and its correlates are difficult to aggregate and to generalize (Beck, 2001). This poses considerable challenges for practitioners and researchers because treatment success for juvenile offenders is often operationalized by law enforcement agencies as a reduction in recidivism (Beck, 2001; North Carolina Department of Juvenile Justice and Delinquency Prevention, "Recidivism of juveniles adjudicated delinquent for offenses in the Class A-E adult felony offense categories: A two-year follow-up," 2004; Snyder & Sickmund, 2006).

Recidivism may refer to several stages of case processing, including number of arrests, court referrals, delinquent status, and detention holds, or commitment to a state juvenile correctional facility. Common measures of recidivism typically include rearrest, readjudication, and reconfinement (Snyder & Sickmund, 2006). Rearrest is defined as a referral made to the juvenile justice system for a new offense. While rearrest is a useful

measure because it reflects initial contact with the juvenile justice system, it is limited because arrest rates represent interaction with law enforcement, not adjudication for a given offense (Snyder & Sickmund, 2006).

Readjudication refers to a guilty adjudication of a delinquent or criminal offense and is a conservative measure of recidivism (Beck, 2001). Because rates of reoffending are particularly high during the first year following release or judicial action, some authors argue that offending patterns within that first year do not provide an accurate picture of offending patterns. Rather, these authors have proposed that studies examining repeat offense patterns should specify a period between one and three years (see, for example, Beck, 2001). The length of time beyond judicial action or release during which any additional infraction could be considered a recidivistic event is also defined differently across jurisdictions. For example, this length of time may range from three months to five years depending on the state, though most states define this period as one year (Snyder & Sickmund, 2006).

Reconfinement is perhaps the most methodologically challenging measure of recidivism (Gottfredson & Tonry, 1987; Sharkey, Furlong, Jimerson, & O'Brien, 2003). Offenders can have multiple detention stays for several reasons, including probation violations for reasons ranging arriving home 30 minutes after curfew to testing positive on a urinalysis for illegal substances, new charges, as an interim hold for the juvenile's protection if his or her family is involved with a child protective agency, or any combination thereof.

In order to address the inconsistency in definitions of recidivism, the Virginia Department of Juvenile Justice spearheaded an effort to collect data on juvenile recidivism across the country (*Virginia Department of Juvenile Justice: Juvenile recidivism in Virginia*, 2005). Twenty-seven states participated and provided recidivism data on juveniles released from state incarceration facilities. Most states were able to provide data for a 12-month follow-up period. However, states varied in how they measured recidivism and thus provided dimensionally different data. For example, three states provided data on delinquent offenses in the juvenile and adult systems, and eight states provided data on reconviction and readjudication in the juvenile and adult systems, respectively. Three states reported reconfinement for delinquent offenses in the juvenile system only. Average rates varied significantly depending on the dimension of recidivism. Illustratively, states reporting rearrest rates for delinquent/criminal offenses in the juvenile and adult systems reported a 55% average recidivism rate, with a 45% “success” rate. States reporting reconfinement data for delinquent offenses in the juvenile system only reported a 12% average recidivism rate, and an 88% “success” rate.

Research supports repeat offending as a risk factor for violent offending, and that violent offending is a manifestation of a broader category of repeat offending, along with high frequency of antisocial behavior (Capaldi & Patterson, 1996; Loeber, 1988). For example, results of a meta-analytic study examining risk factors for youth violence in adolescents revealed that the strongest predictors of violent offending included history of committing non-violent offenses as well as illegal substance offenses (Lipsey, 1998). Another study examined co-occurring violent and non-violent offending within three

different cities and found that 82-92% of youths who committed violent offenses had history of referrals for property crimes, 71-82% of these youth had also been referred to juvenile court for public order offenses, and 26-45% had been referred for sale and possession of illicit substances (Huizinga, Loeber, & Thornberry, 1995). Incidence of co-occurring crime was also significantly higher among violent offenders when compared to non-violent offenders in an earlier study that took place in New York state (Elliott, Huizinga, & Menard, 1989). However, other studies have contradicted these findings. For example, one investigation found that adolescents who went on to commit non-violent offenses had significantly more prior non-violent offenses than adolescents who committed violent offenses (Parker, Morton, Lingefelt, & Johnson, 2005).

Offense Severity and Juvenile Delinquency

Defining offense severity or seriousness has engendered considerable controversy for a variety of reasons among researchers, lawmakers, policymakers, and the public at large. First, the term “serious” as it pertains to crime lacks a standard definition (Stylianou, 2003). Second, competing priorities among different disciplines and stakeholders yield difficulties in reaching consensus regarding factors that affect perceived seriousness (Sebba, 1984). Third, while common factors have emerged within several fields, most notably within the criminology literature, intradisciplinary consensus on severity has yet to be reached (Cullen, Link, Travis, & Wozniak, 1985). Fourth, large-scale studies examining crime seriousness have been broadly inclusive with regard to offense type, which makes it difficult to compare or generalize findings (e.g., Cullen,

Link, & Polanzi, 1982; Douglas & Ogloff, 1997; Wolfgang, Figlio, Tracy, & Singer, 1985).

Criminology researchers have been studying perceptions of crime seriousness since the topic was initially introduced in 1964 (Sellin & Wolfgang, 1964). Some have suggested that victim harm is the most important consideration in the assessment of crime seriousness (Cullen et al., 1985). Others have challenged this assertion, arguing that intentionality, culpability, and status are equally important factors (e.g., Fishman, Kraus, & Cohen, 1986; O'Connell & Whelan, 1996; Rauma, 1991). Two factors have consistently emerged in the empirical studies on crime seriousness, namely, perceived consequences and perceived wrongfulness of an act on the part of a juvenile (Hoffman & Hardyman, 1986; Parton, Hansel, & Stratton, 1991; Stylianou, 2003). Perceived consequence is generally regarded as the most critical factor in determining perceived seriousness of an offense (Stylianou, 2003; Wolfgang et al., 1985). As such, violent crime is generally considered the most serious, followed by property offenses (Douglas & Ogloff, 1997; Warr, 1989). Victimless crimes tend to be regarded societally as the least serious, though these offenses are often judged by the extent to which they violate societal moral standards (Walker, 1978). Perceived seriousness of victimless crimes has been also shown to vary according to cultural and demographic variables (Evans & Scott, 1982; Fleming, 1981).

In addition to complications associated with assessment of crime seriousness, investigations of factors associated with severe juvenile offending have been hampered by lack of consensus regarding offense taxonomy. For example, studies investigating

risk factors and predictors of severe offending have often relied on broad classification systems consisting of two to four categories, but federal sentencing guidelines use an offense severity matrix that breaks each offense up into several different severity sub-levels (Stylianou, 2003; Vanderpool, 2008). Illustratively, a misdemeanor could describe an assault charge or a disorderly conduct charge, and a felony could describe an aggravated assault charge as well as possession of illicit drugs. In this regard, each broad offense category is limited in its ability to describe relative seriousness of a particular offense. Regardless of the difficulties associated with defining offense severity, broad categories do exist and are used to investigate trends over time (Kautt, 2009). Common categories defined in legislative and administrative code include felony, misdemeanor, and petty offenses, with the former two categories further subdivided into offense classes. For example, the state of Arizona recognizes six classes of felony offenses and three classes of misdemeanor offense, with severity represented in descending order (A.R.S. 13-601). The term felony generally describes the most serious offense category. Misdemeanor refers to a crime less severe than a felony, and typically accompanies a relatively minor penalty. A petty offense refers to a crime for which a sentence of a fine only is authorized by law (A.R.S. 13-105).

Another potential problem with comparison studies using offense severity classification is that a crime for which a juvenile has been referred may be reduced to a less severe offense at the adjudicatory hearing (Poe-Yamagata & Butts, 1996). These decisions vary given a youth's legal representation, offense history, mitigating factors, and are often left to the discretion of the district attorney or judge.

Violent versus Non-violent Delinquency

Given that offenses involving victim harm have generally been considered most serious or severe, studies examining crime seriousness in particular have investigated various factors presumed to be associated with youth violence (Farrington & Loeber, 2000; Farrington et al., 2001; Farrington et al., 2003; Hawkins et al., 1998; Lipsey, 1998; Lynham et al., 2000; Stouthamer-Loeber, Loeber et al., 2002). Studies examining risk factors for all forms of delinquency and for violent offending specifically have reported similar findings. Specifically, common risk factors include being male, childhood maltreatment, economic disadvantage, low academic achievement, having learning and emotional disability diagnoses, illegal substance violations, and a pattern of repeat offending (Auffrey, Fritz, Lin, & Bistak, 1999; Beebe & Mueller, 1993; Ensminger, Kellam, & Rubin, 1983; Loeber & Farrington, 2001; Olweus, 1983; Tremblay, Masse, Perron, Leblanc, Schwartzman, & Ledingham, 1992; Van Dorn, 2003).

However, several studies examining juvenile violence have either focused on factors associated with violent offending without drawing comparisons between violent and non-violent forms of delinquency (McCord et al., 2001; Moffitt, 1990; Morgan & Lilienfeld, 2000; Morris & Morris, 2006; Otnow-Lewis et al., 1985; Rutherford & Nelson, 2005; Shelley-Tremblay et al., 2007; Waldie & Spreen, 2001), or have focused only on incarcerated youth (Auffrey et al., 1999; Gover, 2002; Loza, 2003). Some authors have concluded that more research is needed that contrasts risk factors for violent and non-violent offenders (Hawkins et al., 2000).

Investigations that have distinguished violent from non-violent juvenile offenders have identified different risk factors between the two groups. For example, some authors have asserted that violent juvenile offenders begin offending earlier and continue to offend longer than non-violent youth, and tend to exhibit more school problems, illegal substance violation referrals, and mental health diagnoses when compared to non-violent youth (Loeber & Farrington, 2001).

Van Dorn (2003) examined correlates of violent versus non-violent delinquency and found that positive attitudes toward gang involvement and experiencing violence in the home environment distinguished violent from non-violent juvenile offenders (Van Dorn, 2003). Moreover, in a longitudinal study conducted by Farrington (1997), it was found that the strongest early predictors of violent versus non-violent offending were the presence of conduct problems (as rated by teachers and social workers), low verbal intelligence, economic disadvantage, parental neglect and minimal parenting, and parent criminality were the strongest predictors of violent offending (Farrington, 1997). Other studies have also revealed that violent youth display the greatest academic deficits when compared to nonviolent offenders (Beebe & Mueller, 1993; Van Wijk et al, 2005).

Assessing Risk of Youth Violence

Formal risk assessment instruments have been developed to predict violence in juveniles and adults (Hanson, 2009). Recently, the American Academy of Child and Adolescent Psychiatry (Penn & Thomas, 2005) recommended that all youth referred to correctional facilities be formally assessed for current and future risk of violence. Some authors have challenged this recommendation given that few instruments have been

validated for use in the child and adolescent population (Schwalbe, 2007), compared to the multitude of violence risk assessments that have been validated for adults (Barbaree, Seto, Langton, & Peacock, 2001; Gendreau, Little, & Goggin, 1996). Further, some researchers challenge the utility of risk assessment instruments, given that even those assessments with strong psychometric properties and moderate accuracy levels yield high false-positive error rates (Yang, Wong, & Coid, 2010).

Standardized instruments have typically been developed by synthesizing empirically and theoretically established constructs that predict violent behavior. These constructs consist of multi-domain aspects or characteristics of an individual's clinical presentation, offense history, past violent behaviors, and sociodemographic variables, as well as protective factors such as community support. Two examples of instruments that have used empirically and theoretically established risk factors to guide prediction of violence and recidivism in children and adolescents include the *Structured Assessment of Violence* (SAVRY; Borum, Bartel, & Forth, 2002), and the *Psychopathy Checklist: Youth Version* (PCL-YV; Forth, Kosson, & Hare, 2003). The SAVRY includes 10 historical risk factors, 6 social-contextual risk factors, 8 individual-clinical risk factors (including psychopathy), and 6 protective factors, all of which were included because of their status in the literature as correlates of violence. The SAVRY can assess risk in two different ways. A total score reflecting overall risk of violence, or the total score, protective factors, and interview information can be integrated to yield an overall rating of low, medium, or high risk. Several studies have investigated the predictive validity of the SAVRY for violent offending. For example, Catchpole and Gretton (2003) found that

SAVRY risk ratings were significantly related to violent recidivism in males between 15 and 19 years-of-age. Specifically, 40% of youth classified as high risk on the SAVRY re-offended within a 1-year period versus 6% of youth classified as low risk. Viljoen and colleagues (2007) found that the SAVRY significantly predicted violent recidivism in adolescent males over 15 years-of-age, but was less effective in predicting violent reoffending in youth less than 15 years-of-age. A recent study examined the predictive validity of the SAVRY in a diverse sample male and female adolescents (Meyers & Schmidt, 2008). Results suggested that the SAVRY was a robust predictor of violent recidivism across sex and ethnicity.

The PCL:YV (Forth et al., 2003) is a rating scale administered via a semi-structured interview that assesses youth between 12 and 18 years-of-age for the presence and severity of symptoms of psychopathy. The PCL:YV follows a four-factor model, which includes interpersonal, affective, behavioral, and antisocial dimensions. The PCL:YV has been found to have strong psychometric properties, with high internal consistency and interrater reliability (Brandt, Kennedy, Patrick, & Curtin, 1997; Gretton, McBride, Hare, O'Shaughnessy, & Kumka, 2001). For example, Gretton and colleagues (2001) found that the PCL:YV was significantly associated with violent reoffending in male adolescents. Catchpole and colleagues (2003) also found the PCL-YV to be predictive of violent reoffending in a sample of African-American and Caucasian male violent juvenile offenders. A more recent study investigated the predictive validity of the PCL:YV in a male and female adolescent sample and found that the instrument had significant predictive utility for males with regard to violent and non-violent re-

offending, but did not significantly predict violent or non-violent re-offending in females (Vincent, Odgers, McCormick, & Corrado, 2008). The authors concluded that females may present unique challenges regarding the nature of accurate risk of violence prediction. Specifically, they speculated that many of the behavioral indicators of psychopathy may be less relevant for females versus males (Vincent et al., 2008). As previously noted, certain current risk assessments have utility for predicting violent and non-violent reoffending in adolescent males, but more empirical investigation is needed into the risk factors of females, and existing instruments need to be validated with culturally diverse samples (Schwalbe, 2007). Additional empirical validation could prove valuable in juvenile justice settings that utilize risk assessments to guide service planning.

CHAPTER 3

METHOD

Participants

The participants in the present study consisted of 2,391 juveniles drawn from a database of 2,543 juveniles who were enrolled within a large public school district in Arizona who were arrested during the 2008-2009 academic year. The database was established based on an inter-governmental agreement between the school district, the participating juvenile court center, and the University of Arizona.

Age of juvenile participants in the study was between 12 and 17 years-of-age; ($M = 15.03$). Age of the participant was determined by the individual's age at the time of the last offense for which the juvenile was referred during the 2008-2009 academic year. The school district comprised 118 schools and approximately 60,000 students. Demographic data from the 2008-2009 academic year revealed that the district's ethnicity composition includes 7.2% African American, 2.8% Asian American, 30.8% Caucasian, 54.9% Hispanic, and 4.3% Native American. Characteristics of the sample are displayed in Tables 1 and 2.

Table 1

*Demographic Characteristics of Sample, Juvenile Court Census, and School District
Population (2008-2009)*

	Sample	School District	Juvenile Court
Sex			
Male	65.9	51.7	65.4
Female	34.1	48.3	34.6
Race/Ethnicity			
African American	10.1	7.2	8.8
Asian American	1.5	2.8	< 1
Caucasian	29.2	30.8	35.7
Hispanic	53.5	54.9	50.2
Native American	5.7	4.3	3.7

Note. These values represent percentages.

Table 2*Juvenile Court and School District Characteristics of the Sample*

Variable	Yes	No
Dependency Involvement	13.3	86.7
Recidivism	62.9	37.1
Illegal Substance Violation History	21.6	78.4
Free or Reduced Lunch Status	43.6	56.4
Special Education Diagnosis	28.3	71.7
Learning Disability Diagnosis	16.1	83.9
Emotional Disability Diagnosis	6.9	93.1

Note. These values represent percentages.

Independent Variables

The independent variables examined in the present study are described below:

1. Sex
2. Ethnicity, defined as African-American, Asian or Pacific Islander, Caucasian, Hispanic, or Native American
3. Economic disadvantage, as determined by whether the student receives a free lunch or reduced fee lunch. The free lunch program is based on the combined family income (including salary, welfare, social security, etc.) of a student's parent(s)/guardian(s) being equal to or less than \$27,560 for a household of

four to qualify for a free lunch and a combined income equal to or less than \$39,200 for a household of four to qualify for a reduced lunch fee.

4. Dependency involvement (i.e., a dependency petition is filed due to substantiated allegations of abuse or neglect against a child's parents or legal guardians, the child is legally a ward of the state, and a child protective services agency is appointed *guardian ad litem*).
5. Recidivism, defined as more than one total arrest during the 2008-2009 academic year with the local juvenile court center.
6. Grade point average (GPA), based on a 0.0-4.0 point system
7. Special education diagnosis upon arrest (i.e., whether a juvenile has a special education diagnosis, as defined by the *Individuals with Disabilities Education Improvement Act [IDEIA], 2004*)
8. Learning disability diagnosis, as defined by *IDEIA* (2004)
9. Emotional disability diagnosis, as defined by *IDEIA* (2004)
10. History of a illegal substance violation during the 2008-2009 year, as defined by Arizona Revised Statutes as a felony or misdemeanor violation, which may include possession, sale, or manufacturing of an illicit substance or paraphernalia.

Dependent Variables

1. Violent versus non-violent offense

A violent offense is defined by whether a participant has a history of being referred to the juvenile court for an offense against person, which may include a felony or

misdemeanor offense. Violent offenses, according to Arizona law (A.R.S. 13-706), may include: aggravated assault, arson of occupied structure, child molestation, child prostitution, child abuse, criminal syndicate, custodial interference, drive-by shooting, intimidating by gang, kidnapping, endangerment, incest, leaving accident, manslaughter, murder, negligent homicide, robbery, sexual abuse, sexual assault, sexual conduct with minor, simple assault, domestic violence, threatening or intimidation, lewd and lascivious acts, or unlawful imprisonment. A non-violent offense consists of a felony, misdemeanor, obstruction, or status charge that is not considered an offense against person.

Procedure

A database consisting of juvenile court data and educational data from the 2008-2009 academic years was obtained by the Children's Research and Policy Studies Project at the University of Arizona through an intergovernmental data-sharing agreement between the local juvenile court center, a local school district, and the University of Arizona. To maintain student confidentiality, the participants were assigned random identification numbers by staff in the information technology department at the local juvenile court center, none of whom is affiliated with the research project or with the University of Arizona. The researcher had no access to the code linking identification numbers to student names. The sanitized database was delivered electronically in Microsoft Excel format, and was converted into PASW version 18.0 for data analyses.

Data Analyses

Discriminant analysis is a multivariate technique used to test a priori typologies and can be used to classify cases according to group characteristics, and make predictions about group membership (Klecka, 1980). The dependent variable in the study was dichotomous: violent offense versus non-violent offense. The independent variables comprised eight categorical and one continuous variable. Discriminant function analysis was utilized to test which combination of variables contributed to the classification of individuals into violent versus non-violent offense categories. A chi-square analysis was performed to examine if any significant discrepancies existed between the observed and expected frequencies of ethnicity group membership for the violent versus non-violent offense categories. All analyses were conducted using the statistical analysis software PASW version 18.0.

CHAPTER 4

RESULTS

This study investigated whether several theoretically and empirically established risk factors regarding violent juvenile offending contributed to the classification of participants into violent versus non-violent offense groups, based upon school and juvenile court data from the 2008-2009 academic year. The study also investigated whether a significant association existed between ethnicity and the juvenile delinquents' expected versus observed frequency of violent versus non-violent offender group membership.

Discriminant analysis (DA) was used to examine nine of the 10 independent variables, with the nine independent variables consisting of eight dichotomous variables and one continuous variable. The analysis consisted of three preliminary and one final DA model. The first model replaced missing data for the GPA variable with mean GPA scores (Mean GPA Score = 1.474). The second model omitted cases in which GPA data were not reported ($N = 831$; 38.4% of the sample). Nine independent variables were entered into the first two models simultaneously to test the significance of the overall model, to assess the relative contribution of the discriminant function coefficients, and to examine the accuracy with which the model classified participants into violent and non-violent groups. The third and fourth models utilized backward elimination stepwise procedures, excluded cases without GPA data, and the fourth model excluded participants that had both a specific learning disabilities diagnosis and an emotional disabilities diagnosis. Chi-square (χ^2) analysis was performed on the tenth independent variable,

which was nominal and contained multiple categories, and was therefore not eligible for inclusion in the DA models.

First Discriminant Analysis Model

Results of the first model in which independent variables were entered simultaneously with means calculated for missing values are as follows. Prior probabilities were computed based upon group sizes, since group sizes were unequal. Of the 2,391 cases in the sample, 1,560 contained GPA score data. Missing values for the remaining 831 were replaced with the mean GPA score. An F test yielded *Wilks' lambda* = 0.953, $p = 0.000$, which suggests statistical significance of the overall model. Given that the overall model was significant, the discriminant function coefficients (C) were then assessed to evaluate each coefficient's contribution to classification of cases into violent versus non-violent groups. In this regard, special education diagnosis (0.528), emotional disability diagnosis (0.447), and illegal substance violation history (-0.486) were the three variables that had the most influence on the classification of cases. Specifically, the absence of a special education diagnosis and the absence of an emotional disability diagnosis contributed to the classification of cases into the non-violent group. Having an illegal substance violation history also contributed to the classification of cases into the non-violent group. A summary of standardized canonical discriminant function coefficients is displayed in Table 3.

Table 3*Summary of Canonical Discriminant Function Coefficients: Model 1*

Sex	-.178
Economic Disadvantage (free or reduced lunch status)	.182
Special Education Diagnosis	.528
Emotional Disability Diagnosis	.447
Specific Learning Disability Diagnosis	-.380
Illegal Substance Violation History	-.486
Recidivism	.270
High School GPA Score	.038
Dependency Involvement	.195

Overall accuracy of classification was computed by dividing the number of cases correctly classified ($n = 1,952$) by the number of cases in the analyzed sample ($N = 2,391$). In this initial model, 81.2% of the cases were correctly classified into the violent or non-violent offense categories. The model overclassified cases into the non-violent group and underclassified cases into the violent group. Table 4 displays classification results.

Table 4*Classification Results for First Discriminant Analysis Model*

	Classified Group Membership		
	<u>Non-violent</u>	<u>Violent</u>	
Group	<i>N (%)</i>	<i>N (%)</i>	<i>Total</i>
Non-violent	1,905 (97.7)	45 (2.3)	1,950 (100)
Violent	404 (91.6)	37 (8.4)	441 (100)

Note. Actual group membership percentages were 81.6% non-violent and 18.4% violent.

Second Discriminant Analysis Model

All eight dichotomous independent variables and the continuous variable were included in the second preliminary model DA model to test significance of the overall model, to assess the relative contribution of the discriminant function coefficients, and the accuracy with which the model classified cases into violent and non-violent groups. Results of the model in which independent variables were entered simultaneously-- and cases without GPA data were excluded from the analysis-- are as follows. Prior probabilities were computed based upon group sizes, since group sizes were unequal. Of the 2,391 cases in the sample, 1,560 contained GPA data. An *F* test yielded *Wilks' lambda* = 0.953, *p* = 0.000, which suggests statistical significance of the overall model. Given that the overall model was significant, the discriminant function coefficients were then assessed to evaluate their contribution to the classification of cases. Similar to the first preliminary model, special education diagnosis (0.528), emotional disability diagnosis (0.447), and illegal substance violation history (-0.486) were the three most

influential in the classification of cases. Specifically, not having a special education diagnosis and not having an emotional disability diagnosis contributed to the classification of cases into the non-violent group. Having an illegal substance violation history also contributed to the classification of cases into the non-violent group. A summary of standardized canonical discriminant function coefficients is displayed in Table 5.

Table 5

Summary of Standardized Canonical Discriminant Function Coefficients: Model 2

Sex	-0.178
Economic Disadvantage (free or reduced lunch status)	0.182
Special Education Diagnosis	0.528
Emotional Disability Diagnosis	0.447
Specific Learning Disability Diagnosis	-0.380
Illegal Substance Violation History	-0.486
Recidivism	0.270
High School GPA Score	0.038
Dependency Involvement	0.195

In this second preliminary model, 83.3% of the cases were correctly classified into violent or non-violent offense category. Overall accuracy of classification was computed by dividing the number of cases correctly classified ($n = 1,300$) by the number of cases in the analyzed sample ($N = 1,560$). The model overclassified cases into the

non-violent group and underclassified cases into the violent group. Classification results are displayed in Table 6.

Table 6

Classification Results for Second Discriminant Analysis Model

	Classified Group Membership		<i>Total</i>
	<u>Non-violent</u>	<u>Violent</u>	
Group	<i>N (%)</i>	<i>N (%)</i>	
Non-violent	1,281 (97.7)	30 (2.3)	1,311 (100)
Violent	230 (92.4)	19 (7.6)	249 (100)

Note. Actual group membership percentages are 84.0% non-violent and 16.0% violent.

Third Discriminant Analysis Model

All eight dichotomous independent variables and the continuous variable were included in the third DA model to test significance of the overall model, to assess the relative classification contribution of the discriminant function coefficients, and the accuracy within which the model classified cases into violent and non-violent groups. The third model omitted cases for participants with missing GPA data ($N = 831$). Results of the model, in which independent variables were entered using backwards elimination stepwise method, are as follows. Criteria for entry and removal of each independent variable into the mode were maximum partial $F = 3.84$ and minimum partial $F = 2.71$, respectively.

The third model retained five variables, which included emotional disability diagnosis, illegal substance violation history, recidivism, special education diagnosis, and

specific learning disability diagnosis. The overall model that included the aforementioned five independent variables was significant, *Wilks' lambda* (1, 5) = 0.963, $p = 0.000$. Given that the overall model was significant, the discriminant function coefficients were then assessed to evaluate their relative influence in classifying cases into violent versus non-violent groups. A summary of standardized canonical discriminant function coefficients is displayed in Table 7.

Table 7

Summary of Standardized Canonical Discriminant Function Coefficients: Model 3

Recidivism	0.291
Illegal Substance Violation History	-0.518
Special Education Diagnosis	0.602
Emotional Disability Diagnosis	0.482
Specific Learning Disability Diagnosis	-0.411

Special education diagnosis was the most influential contributor to the classification of violent versus non-violent offense group. Not having a special education diagnosis or an emotional disability diagnosis, and not recidivating contributed to the classification of cases into the non-violent group. Having an illegal substance violation history and a specific learning disability diagnosis contributed to classification of cases into the non-violent offense group as well. Overall accuracy of classification was computed by dividing the number of cases correctly classified ($n = 1,944$) by the number of cases in the analyzed sample ($N = 2,391$). In this model, 81.3% of the cases were

correctly classified into violent or non-violent offense category. The model overclassified cases into the non-violent group and underclassified cases into the violent group. Classification results are displayed in Table 8.

Table 8

Classification Results for Third Discriminant Analysis Model

	Classified Group Membership		<i>Total</i>
	<u>Non-violent</u>	<u>Violent</u>	
Group	<i>N (%)</i>	<i>N (%)</i>	
Non-violent	1,902 (97.5)	48 (2.5)	1,950 (100)
Violent	399 (90.5)	42 (9.5)	441 (100)

Note. Actual group membership percentages are 81.6% non-violent and 18.4% violent.

Fourth Discriminant Analysis Model

All eight dichotomous independent variables were included in the final DA model to test significance of the overall model, to assess the relative contribution of the discriminant function coefficients, and the accuracy within which the model classified cases into violent and non-violent groups. The final model omitted cases for participants with missing GPA data ($N = 831$). Further, cases were omitted that included both specific learning disability and emotional disability diagnoses ($N = 40$) such that the relative contribution of each of those variables to the model's classification could be assessed. Results of the final model, in which independent variables were entered using backwards elimination stepwise method, are as follows. Criteria for entry and removal of

each independent variable into the mode were maximum partial $F = 3.84$ and minimum partial $F = 2.71$, respectively.

The overall model that included the aforementioned five independent variables was significant, *Wilks' lambda* ($1, 5$) = .963, $p = 0.000$. Given that the overall model was significant, the discriminant function coefficients were then examined to evaluate the relative influence of each variable in classifying cases into the violent versus non-violent groups. A summary of standardized canonical discriminant function coefficients is displayed in Table 9.

Table 9

Summary of Standardized Canonical Discriminant Function Coefficients: Model 4

Special Education Diagnosis	0.732
Emotional Disability Diagnosis	0.336
Specific Learning Disability Diagnosis	-0.541
Recidivism	0.325
Illegal Substance Violation History	-0.517

The special education diagnosis variable was the most influential contributor to the classification of violent versus non-violent offense group. Not having a special education diagnosis or an emotional disability, and not recidivating contributed to the classification of non-violent offending. Having an illegal substance violation history and a specific learning disability diagnosis contributed to classification of cases into the non-violent offense group as well. Overall accuracy of classification was computed by

dividing the number of cases correctly classified ($n = 1,918$) by the number of cases in the analyzed sample ($N = 2,352$). The model overclassified cases into the non-violent group and underclassified cases into the violent group. Classification results are displayed in Table 10.

Table 10

Classification Results for Fourth Discriminant Analysis Model

Group	Classified Group Membership		Total
	<u>Non-violent</u>	<u>Violent</u>	
	<i>N (%)</i>	<i>N (%)</i>	
Non-violent	1,876 (97.5)	48 (2.5)	1,924 (100)
Violent	386 (90.2)	42 (9.8)	428 (100)

Note. Actual group membership percentages are 81.6% non-violent and 18.4% violent.

In the final model, classification results were cross-validated using a split-half, or U-method, holdout sample in order to analyze the accuracy of the classification model (Duarte Silva & Stam, 2004). Similar to the fourth model, 81.5% of the cases were correctly classified into violent or non-violent offense category. Classification results for the cross-validation sample are displayed in Table 11.

Table 11*Classification Results for Cross-validated Sample: Model 4*

Group	Classified Group Membership		Total
	<u>Non-violent</u>	<u>Violent</u>	
	<i>N (%)</i>	<i>N (%)</i>	
Non-violent	1,876 (97.5)	48 (2.5)	1,924 (100)
Violent	386 (90.2)	42 (9.8)	428 (100)

Results of the individual hypotheses are based upon the final stepwise DA model and are as follows.

Hypothesis 1: Economic Disadvantage and Violent versus Non-violent Offending

A discriminant function was utilized to test if the participants' free or reduced lunch status, an indicator of economic disadvantage, significantly contributed to the classification their group membership as violent versus non-violent offenders.

Hypothesis 1 stated that economic disadvantage would not significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, economic disadvantage did not significantly contribute to the classification of participants into violent versus non-violent groups, as it did not meet minimum partial *F to enter* criteria, and was therefore excluded from the final DA model ($F to enter = 2.388$). Therefore, the null hypothesis was not rejected.

Hypothesis 2: Grade Point Average and Violent versus Non-violent Offending

A discriminant function was utilized to test if the participants' GPA score significantly contributed to the classification of their group membership as violent versus non-violent offenders. Hypothesis 2 stated that GPA score would not significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, GPA score did not significantly contribute to the classification of participants into violent versus non-violent groups, as it did not meet minimum partial *F to enter* criteria, and was therefore excluded from the final DA model ($F to enter = 0.057$). Therefore, the null hypothesis was not rejected.

Hypothesis 3: Sex and Violent versus Non-violent Offending

A discriminant function was utilized to test if the participants' sex significantly contributed to the classification of their group membership as violent versus non-violent offenders. Hypothesis 3 stated that sex would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). However, it was found that sex did not significantly contribute to the classification of violent versus non-violent group membership, as it did not meet minimum partial *F to enter* criteria, and was it therefore excluded from the final DA model ($F to enter = 2.275$). Therefore, the alternative hypothesis was not retained.

Hypothesis 4: Dependency Involvement and Violent versus Non-violent Offending

A discriminant function was utilized to test if dependency involvement significantly contributed to the classification of their group membership as violent versus non-violent offenders. Hypothesis 4 stated that dependency involvement would

significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). However, it was found that dependency involvement did not significantly contribute to the classification of violent versus non-violent group membership, as it did not meet minimum partial F to enter criteria, and was therefore excluded from the final DA model (F to enter = 3.195). Therefore, the alternative hypothesis was not retained.

Hypothesis 5: Special Education Diagnosis and Violent versus Non-violent Offending

A discriminant function was utilized to test if special education diagnosis significantly contributed to the classification of violent versus non-violent group membership. Hypothesis 5 stated that special education diagnosis would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, a special education diagnosis was found to contribute significantly to the classification of violent versus non-violent group membership, *Standardized Canonical Classification Coefficient* (C) = 0.732, and this variable was retained in the final DA model, *Wilks' lambda* (1, 5) = 0.963, $p = 0.000$. Specifically, not having a special education diagnosis was found to contribute to the classification of cases into the non-violent group. Therefore, the alternative hypothesis was not rejected.

Hypothesis 6: Specific Learning Disability Diagnosis and Violent versus Non-violent Offending

A discriminant function was utilized to test if specific learning disability diagnosis significantly contributed to the classification of violent versus non-violent

group membership. Hypothesis 6 stated that specific learning disability diagnosis would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, specific learning disability diagnosis significantly contributed to the classification of violent versus non-violent offense group membership, $C = -0.541$, and this variable was retained in the final DA model, $Wilks' \lambda (1, 5) = 0.963, p = 0.000$. Specifically, having a specific learning disability diagnosis significantly contributed to the classification of non-violent group membership. Therefore, the alternative hypothesis was not rejected.

Hypothesis 7: Emotional Disability Diagnosis and Violent versus Non-violent Offending

A discriminant function was utilized to test if an emotional disability diagnosis significantly contributed to the classification of violent versus non-violent group membership. Hypothesis 7 stated that emotional disability diagnosis would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, emotional disability significantly contributed to the classification of violent versus non-violent group membership, $C = 0.336$, and this variable was retained in the final DA model, $Wilks' \lambda (1, 5) = 0.963, p = 0.000$. Specifically, not having an emotional disability diagnosis was found to contribute significantly to the classification of cases into the non-violent group. Therefore, the alternative hypothesis was not rejected.

Hypothesis 8: Illegal Substance Violation History and Violent versus Non-violent Offending

A discriminant function was utilized to test if having a history of illegal substance violation would significantly contribute to the classification of violent versus non-violent offense group membership. Hypothesis 8 stated that history of illegal substance violation would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, there was a significant difference between the violent and non-violent offender groups with respect to illegal substance violation, $C = -0.517$, and this variable was retained in the final DA model, $Wilks' \lambda (1, 5) = 0.963, p = 0.000$. Specifically, having an illegal substance violation was found to significantly contribute to the classification into the non-violent group. Therefore, the alternative hypothesis was not rejected.

Hypothesis 9: Recidivism and Violent versus Non-violent Offending

A discriminant function was utilized to test if history of recidivism (i.e., more than one referral to the juvenile court during the 2008-2009 academic year) would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents. Hypothesis 9 stated that recidivism would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents ($p < 0.05$). As hypothesized, recidivism significantly contributed to the classification of violent versus non-violent group membership, $C = 0.325$, and this variable was retained in the final DA model, $Wilks' \lambda (1, 5) = 0.963, p = 0.000$. Specifically, not having repeat violations significantly contributed to

the classification of non-violent offense group membership. Therefore, the alternative hypothesis was not rejected.

Hypothesis 10: Ethnicity Category and Violent versus Non-violent Offending

A chi-square analysis (χ^2) was performed to test if any significant association existed between ethnicity and the juvenile delinquents' expected versus observed frequency of violent versus non-violent offender group membership. Hypothesis 10 stated that there would be no significant association between ethnicity and juvenile offenders' expected versus observed frequency of non-violent versus non-violent offender status ($p < 0.05$). Results of the χ^2 showed that no significant association was found, thus the null hypothesis was not rejected $\chi^2 (4) = 0.907, p = 0.924$. The total number of participants per cell for the five ethnicity categories and violent versus non-violent classifications are presented in Table 12.

Table 12

Cell Ns for Each Ethnicity Category and Violent versus Non-violent Offending

	African American <i>N</i>	Asian American/Pacific Islander <i>N</i>	Caucasian <i>N</i>	Hispanic <i>N</i>	Native American <i>N</i>
Non-violent	196	27	574	1044	109
Violent	45	8	127	233	28

CHAPTER 5

DISCUSSION

The purpose of the present study was to examine whether a set of theoretically and empirically established risk factors could significantly contribute to the classification of violent versus non-violent offending in an ethnically diverse sample of male and female adolescent juvenile delinquents. Variables examined included economic disadvantage, grade point average (GPA) score, sex, dependency involvement, special education diagnosis, specific learning disability diagnosis, emotional disability diagnosis, illegal substance violation history, and recidivism. A separate analysis was conducted to investigate whether there were significant differences in observed versus expected frequencies across different ethnicity categories. It was hypothesized that economic disadvantage and grade point average would not significantly contribute to the classification of violent and non-violent offense group membership in juvenile delinquents. It was hypothesized that sex, dependency involvement, special education diagnosis, specific learning disability diagnosis, emotional disability diagnosis, history of illegal substance violation, and recidivism would significantly contribute to the classification of violent and non-violent offense group membership in juvenile delinquents. Last, it was hypothesized that there would be no significant differences between observed versus expected frequency of violent versus non-violent offending across different ethnicity categories.

With regard to classifying violent versus non-violent group membership, discriminant analysis (DA) revealed that five of nine variables significantly contributed

to the classification of juveniles into violent and non-violent groups, including recidivism, illegal substance violation history, special education diagnosis, emotional disability diagnosis, and specific learning disability diagnosis. The final DA model was significant, and results of the analysis revealed a high classification hit ratio for non-violent group membership and a low classification hit ratio for violent group membership. In this regard, the relative influence of the independent variables in contributing to the classification of the model could only be interpreted in light of their contribution to classifying cases into non-violent offense group.

With regard to hypothesis 1, a discriminant analysis model was utilized to test if the participants' free or reduced lunch status (an indicator of disadvantage) significantly classified their group membership as violent versus non-violent offenders. Qualifying for free or reduced lunch did not significantly contribute to the classification of participants into violent versus non-violent groups. While economic disadvantage has been discussed in the literature as a risk factor for violent offending and delinquency (Farrington et al., 2003; Leventhal & Brooks-Gunn, 2000; Lynham et al., 2000), the research has yielded inconsistent findings (Alltucker et al., 2006). Given that free or reduced lunch status only captures one dimension of economic disadvantage, it is possible that other measures, such as household income and neighborhood socioeconomic status, could have yielded different results.

A discriminant analysis model was utilized to test if the participants' GPA score significantly contributed to their group membership as violent versus non-violent offenders (hypothesis 2). GPA did not significantly contribute to classification of

participants into violent versus non-violent groups. This is inconsistent with research studies that have found academic underperformance to be significantly associated with violent offending (Denno, 1990; Farrington, 1987; Hinshaw, 1992; Hux et al., 1998; Katsiyannis et al., 2008; Zamora, 2005). However, GPA score was only available for 65.2% of the sample. Juveniles not enrolled in high school, such as those who were enrolled in middle school or those who dropped out or had very low attendance, at the time of their referral would not have had GPA data on record. In this regard, examining GPA excluded offenders in middle school as well as those who were not enrolled in school at all. Research suggests that academic failure and dropping out, as well as younger age, are risk factors for violent offending (Hawkins et al., 1998). Thus, it is possible that those participants included in the GPA analysis may have not been representative of the entire sample.

With regard to hypothesis 3, a discriminant analysis model was utilized to test if the participants' sex significantly contributed to their classification of violent versus non-violent group membership. Sex did not significantly contribute to the classification of violent versus non-violent offense group membership, and was not retained in the stepwise model. This is inconsistent with research suggesting that being male is a risk factor for violent offending (Broidy et al., 2003; Fagan et al., 2007; Gorman-Smith & Loeber, 2005; Hart et al., 2007; Kroneman et al., 2004; Liu & Kaplan, 2004; Piquero & Sealock, 2004). This suggests that at least in this particular sample, violent and non-violent offending was more evenly distributed among males and females than prior studies have found.

To address hypothesis 4, a discriminant analysis model was utilized to investigate whether dependency involvement significantly contributed to the classification of violent versus non-violent group membership. Analysis revealed that dependency involvement did not significantly contribute to the classification of violent versus non-violent offense group membership, and this variable was therefore not retained in the final stepwise model. While some studies have suggested that youth whose families are involved in dependency court are at greater risk for violence and delinquency (Stouthamer-Loeber, Wei et al., 2002), others have not substantiated these findings (Jonson-Reid & Barth, 2000). Given that dependency involvement alone does not describe the circumstances behind the case, nor is it a valid indicator of child abuse or whether a child was actually separated from his or her parent, it is possible that a more nuanced view of the nature of the dependency involvement may have yielded different findings.

A discriminant analysis model was utilized to examine whether having a special education diagnosis significantly contributed to the classification of participants' group membership as violent versus non-violent offenders (hypothesis 5). As hypothesized, special education diagnosis significantly contributed to the classification of violent versus non-violent offending. Specifically, no special education diagnosis significantly contributed to the classification of cases in the non-violent offense group. Research suggests that youth with disabilities are at higher risk for violent offending (Rutherford & Nelson, 2005; Waldie & Spreen, 2001). While the model underclassified cases in the violent offense category, the contribution of not having a special education diagnosis to

the classification of cases into the non-violent group may suggest that the absence of this classification may be a protective factor against arrests for violent offenses.

With regard to hypothesis 6, a discriminant analysis model was utilized to test if participants with an IDEIA diagnosis of specific learning disability significantly contributed to the classification of cases into violent versus non-violent offender groups. As hypothesized, having a specific learning disability diagnosis significantly contributed to the classification of violent versus non-violent offending. However, contrary to research suggesting that youth with specific learning disability are at higher risk for violent offending, as well as other types of offending (Jarvelin et al., 1994; Quinn et al., 2005; Rutherford et al., 2002), having a learning disability diagnosis contributed to the classification of non-violent offending. One possible explanation for this is that there is a higher population of youth with specific learning disabilities in the delinquent population when compared to the general population. The presence of a learning disability may characterize a large percentage of court-referred youth, but may not necessarily be associated with violent offending.

A discriminant analysis model was utilized to test if participants with an IDEIA diagnosis of emotional disability significantly contributed to the classification of their group membership as violent versus non-violent offenders (hypothesis 7). As hypothesized, emotional disability diagnosis significantly contributed to the classification of violent versus non-violent offenders. Specifically, not having an emotional disability diagnosis contributed to the classification of non-violent offense group membership. While the model underclassified cases in the violent offense category, the contribution of

not having an emotional disability diagnosis to the classification of cases into the non-violent group may suggest that the absence of this classification may be a protective factor, which is consistent with results of prior studies examining the relationship between emotional disability and violent offending (Quinn et al., 2005).

To test hypothesis 8, a discriminant analysis model was utilized to examine if participants with a history of illegal substance violation would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents. As hypothesized, history of illegal substance violation significantly contributed to the classification of violent versus non-violent group membership. However, illegal substance violation history was found to significantly contribute to the classification of non-violent offenders, which is inconsistent with research suggesting that illicit substance violation is a risk factor for violent offending (Loeber & Farrington, 2001). One possible explanation for this is that while substance use is associated with higher incidence of delinquency, a substance use violation charge alone may not necessarily be associated with violent offending. Further, minor substance use violations may be reflected in a juvenile's offense history as a probation violation, which may yield an underestimate of substance use history in the present sample.

With regard to hypothesis 9, a discriminant analysis model was utilized to test if participants with history of recidivism (i.e., more than one referral to the juvenile court) would significantly contribute to the classification of violent versus non-violent offense group membership in juvenile delinquents. As hypothesized, recidivism significantly contributed to the classification of violent versus non-violent offenders. While the model

underclassified cases in the violent offense category, not recidivating significantly contributed to the classification of cases in the non-violent group. In this regard, not recidivating might be interpreted as a protective factor, which is consistent with prior studies that have revealed a significant relationship between repeat offending and violent referrals (Auffrey et al., 1999).

A chi-square analysis was performed to test if any significant association existed between ethnicity and the juvenile delinquents' expected versus observed frequency of violent versus non-violent offender group membership (hypothesis 10). Results revealed that no significant association was found, which is consistent with literature suggesting that ethnicity is not a risk factor for non-violent versus violent offending, when other sociodemographic variables, such as SES, are statistically controlled (Shader, 2003).

A secondary discriminant analysis was performed with prior probabilities computed for equal group size in order to investigate whether classification of cases into violent versus non-violent groups may have improved with a higher number of participants in the violent group. Appendix A displays results of this analysis. The classification hit ratio was higher for the violent offense group and better than chance for the non-violent group, which suggests that the analysis may have yielded improved discriminative capability with more participants in the violent group. In this secondary analysis, the recidivism variable was the most influential contributor to classification of cases into the violent versus non-violent offense groups. Being a recidivist, having an illegal substance violation history, and having a special education diagnosis contributed

to the classification of cases into the violent offense group. Higher GPA score contributed to the classification of cases in the non-violent group.

Limitations of the Study

The present study had several methodological limitations. First, the study examined arrest data only for the 2008-2009 academic year. As such, many of the variables available were only applicable to the academic year in which the juvenile was arrested. Therefore, this single year snapshot of offenses may not have accurately represented the participants' offense histories. In this regard, it is possible that juveniles falling into the non-violent offense category could have been referred to the juvenile court for violent offenses in prior years, which would yield an underestimate of the total number of juveniles in the violent offense group. Thus, discriminating between the two groups using the variables in the study may not have yielded meaningful differences. Consequently, caution should be exercised when comparing the results of the present study to other studies using violent versus non-violent offending as a dependent variable.

In addition, in Arizona many severe offenses such as homicide or manslaughter require an automatic transfer to adult court; therefore, the current sample did not include those juveniles who committed these serious violent offenses. While such offenses are relatively few in number per year, the sample does not represent the full spectrum of violent offenses in the juvenile population during the 2008-2009 academic year.

In this present study, the discriminant analysis model overclassified cases into the non-violent group and underclassified cases in the violent group. As mentioned above, it is possible that a higher sample size for the violent group would have improved the

classification hit ratio. Also, the sample did not include the most severe violent juvenile offenders, as juveniles arrested for certain types of violent crimes are automatically referred to adult court. In this regard, the sample consisted of juveniles with offenses that may have not met a threshold of violence such that differences in characteristics would significantly discriminate them from non-violent offenders.

Another limitation was that academic information was unavailable for many participants. This limits the potential discriminatory influence of each of these variables. For example, special education diagnosis (coded as 'yes' or 'no') was obtained from school records, but for juveniles with minimal school data on record, it is possible that dropping out, transfers to other districts, or low school attendance might have yielded inadequate opportunity for identification for special education services. In this regard, the sample for the present study may have yielded an underestimate of the actual number of youth who were eligible for special education services. Similarly, GPA data was not available for 38.4% of the participants. It is possible that mean GPA score represented only those youth who had sufficient attendance for accumulating grade information, and thus GPA may not have been a sensitive measure of academic performance given. This may explain why GPA score was not found to significantly contribute to the classification of participants into violent versus non-violent groups.

Another limitation of the present study was the use of free/reduced lunch as an indicator of economic disadvantage. Some studies examining economic disadvantage as a risk factor for violent offending and delinquency used several indicators-- such as regional socioeconomic status, actual household income, welfare eligibility, and

homelessness-- (Bjerk, 2007) to derive an aggregate measure of economic disadvantage, thus yielding a more precise overall measure of economic disadvantage. In this regard, free/reduced lunch eligibility as an indicator may not have fully captured the economic circumstances of the sample.

The present study included only adolescents, excluding youth under 12 years-of-age. Given that early offending is a risk factor for violent offending (Hawkins et al., 2000; Loeber & Farrington, 2001), including a broader age range in the sample, and including age as an independent variable, may have yielded more accurate classification of cases into violent versus non-violent groups.

Finally, another limitation involved the use of dichotomous variables in the model. Using dichotomous variables yields lower predictive power (Tabachnick & Fidell, 1983). Thus, using a more formal scale of violence as an outcome variable may have afforded the opportunity to more precisely distinguish characteristics between the groups. Further, continuous data for independent variables may have also allowed for more precise and nuanced view of the data, and thus might have yielded more discriminative power.

Implications of the Findings and Future Directions for Research

Results of the present study have implications for the field of school psychology in that efforts toward identifying factors that discriminate between violent and non-violent youth may benefit from obtaining more nuanced and precise information regarding various school factors, such as academic performance and performance on formal measures evaluating special education eligibility. While multi-agency efforts to

obtain data regarding characteristics of youth referred to the juvenile justice system are needed in order to develop a better understanding of risk factors, as well as to guide prevention and intervention efforts.

The present study found no significant differences between different ethnicity groups with respect to violent versus non-violent offending, which contributes to literature that has so far been inconclusive with regard to the status of ethnicity as a risk factor (Farrington et al., 2003). In this regard, results of the present study suggest that ethnicity alone should not be considered a risk factor for violent delinquency. However, future research is needed to examine the relative impact of theoretically and empirically established risk factors on different ethnic groups such that school personnel and mental health providers can better understand the needs of different cultural groups.

The present study confirms that more research is needed examining variables that significantly classify violent versus non-violent juveniles. It may be beneficial for future investigators to determine if juveniles who commit both violent and nonviolent offenses constitute a third group who are distinguishable from those who commit only violent offenses or only non-violent offenses. Further research is also needed to better understand the protective factors that mitigate the effects of exposure to risk factors of both violent and non-violent offending.

Future research may also benefit from obtaining more detailed information regarding the nature of dependency involvement. As previously mentioned, dependency involvement in and of itself is not an indicator of child abuse or maltreatment, nor does it describe potential separation between parent and children, or the outcomes. In this

regard, a more nuanced understanding of the nature of the dependency case may allow for investigation into the factors associated with the dependency involvement, and whether analysis reveals them to yield strength in discriminating between violent and non-violent offenders.

Future studies may also benefit from using severity index to scores to examine differences between violent offenders with low-level offenses, such as simple assault and domestic violence charges, to those with more serious violent offenses, such as aggravated assault or murder. In this regard, investigating risk factors among juveniles across the spectrum of violent offending may clarify differences that may be important to early identification, prevention, and intervention efforts.

Two factors that have been suggested to be highly predictive of delinquency are cognitive functioning and mental health issues. The current study relied more on sociodemographic factors related to violent offending, and additional research is needed that focuses on cognitive factors, such as general intellectual ability, executive functioning, and verbal skills of delinquents. Given the prevalence of juvenile delinquents with mental health issues, and the overrepresentation of delinquents with mental health diagnoses compared to those in the general population, future research should examine whether mental health status and diagnosis are related to violent offending as well.

The present study included only those youths who were at least 12 years-of-age. Additional research is necessary to determine if risk factors are similar across the age spectrum of juvenile offenders. In this regard, investigating risk factors among juveniles

of all ages may illuminate differences that may be important to the early identification of youth at risk for violent offending.

Research suggests that no single characteristic can predict or classify violent behavior or delinquency (Farrington & Loeber, 2000; Farrington et al., 2001; Farrington et al., 2002; Hawkins et al., 1998; Stouthamer-Loeber, Wei et al., 2002). Rather, a constellation of factors contributes to the development of violent and delinquent behaviors. However, the causal status of known risk factors remains to be clarified, and no single risk factor can fully explain delinquent behaviors (Stouthamer-Loeber, Wei, et al., 2002). Rather, the greater the number of risk factors (e.g., poor parental supervision coupled with poor academic performance) or the greater the number of risk factor domains (e.g., risk in the family and the school), the greater the likelihood of delinquent behavior (Loeber & Farrington, 1998; Stouthamer-Loeber, Loeber et al., 2002). In this regard, continued efforts toward identifying those risk factors associated with violent offending may yield valuable information regarding the identification of at-risk youth, and may aid prevention and intervention efforts.

APPENDIX A

SECONDARY ANALYSES

Because violent and non-violent offense group sizes were unequal (81.6% non-violent and 18.4% violent), a secondary discriminant analysis (DA) was performed computing prior probabilities based on equal group size in order to speculate whether the model might have yielded greater classification accuracy with greater number of participants in the violent group.

All eight dichotomous independent variables were included in this fifth DA model to test significance of the overall model, to assess the relative discriminant function coefficients, and the accuracy within which the model classified cases into violent and non-violent groups. The model omitted cases for participants with missing GPA data ($N = 831$). Further, cases were omitted that included both specific learning disability and emotional disability diagnoses ($N = 40$) such that the relative contribution of each of those variables to the model's classification could be assessed. Results of the model, in which independent variables were entered using backwards elimination stepwise method, are as follows. Criteria for entry and removal of each independent variable into the mode were maximum partial $F = 3.84$ and minimum partial $F = 2.71$, respectively.

The overall model was significant, *Wilks' lambda* ($1, 4$) = 0.899 , $p = 0.000$. The model retained four variables, including special education diagnosis, illegal substance violation history, recidivism, and high school GPA score. The discriminant function coefficients for these variables were then examined to evaluate the influence of each

variable in classifying cases into the violent versus non-violent groups. A summary of standardized canonical discriminant function coefficients is displayed in Table 13.

Table 13

Summary of Standardized Canonical Discriminant Function Coefficients: Model 5

Special Education Diagnosis	0.240
Illegal Substance Violation History	0.400
Recidivism	0.706
High School GPA Score	-0.292

Recidivism had the most influence on classification of cases into the violent versus non-violent offense groups. Being a recidivist, having an illegal substance violation history, and having a special education diagnosis contributed to the classification of cases into the violent offense group. High school GPA score contributed to the classification of non-violent offenders. In the fifth model, 62.3% of the cases were correctly classified into violent or non-violent offense category. Overall accuracy of classification was computed by dividing the number of cases correctly classified ($n = 955$) by the number of cases in the analyzed sample ($N = 1,533$). Classification results are displayed in Table 14.

Table 14*Classification Results for Secondary Discriminant Analysis: Model 5*

Group	Classified Group Membership		Total
	<u>Non-violent</u>	<u>Violent</u>	
	<i>N (%)</i>	<i>N (%)</i>	
Non-violent	753 (59.4)	514 (40.6)	1,267 (100)
Violent	64 (24.1)	202 (75.9)	266 (100)

Note. Actual group membership percentages are 81.8% non-violent and 18.2% violent.

In the secondary analysis model, classification results were cross-validated using a split-half, or U-method, holdout sample in order to analyze the accuracy of the classification model (Duarte Silva & Stam, 2004). Similar to classification results in the analyzed sample, 62.2% of the cases were correctly classified into violent or non-violent offense category. Classification results for the cross-validation sample are displayed in Table 15.

Table 15*Classification Results for Cross-validated Sample: Model 5*

Group	Classified Group Membership		Total
	<u>Non-violent</u>	<u>Violent</u>	
	<i>N (%)</i>	<i>N (%)</i>	
Non-violent	752 (59.4)	515 (40.6)	1,267(100)
Violent	65 (24.4)	201 (75.6)	266 (100)

APPENDIX B

WORKSHEET FOR DETERMINING IF RESEARCH INVOLVING HUMAN SUBJECTS REQUIRES IRB REVIEW

THE UNIVERSITY OF ARIZONA HUMAN SUBJECTS PROTECTION PROGRAM WORKSHEET FOR DETERMINING IF RESEARCH INVOLVING HUMAN SUBJECTS REQUIRES IRB REVIEW

PROJECT TITLE: CLASSIFYING VIOLENT VERSUS NON-VIOLENT OFFENDING IN A DIVERSE
SAMPLE OF ADOLESCENT JUVENILE DELINQUENTS

IDENTIFICATION OF PI(S)

Principal Investigator(s) and Degree(s): Gretchen Schoenfield, B.S.
Department: Disability and Psychoeducational Studies

PURPOSE

The purpose of this form is to assist investigators in determining whether their project requires submission to the Human Subjects Protection Program (HSPP). The following is based on the Human Subject Regulations Decision Charts at <http://www.hhs.gov/ohrp/humansubjects/guidance/decisioncharts.htm>. If at any point the answers lead to the conclusion that the project constitutes research involving human subjects, then stop filling this form out and complete the appropriate HSPP initial application form. If this form indicates that the project does not constitute research involving human subjects, then:

1. Record comments as indicated to support the answer; and
2. Submit this form and requested supporting materials to the Department Head or comparable authority for review.
3. After completion, store the completed, signed form with the research project files.

CAUTION

It is against Federal regulations to conduct research involving human subjects without prior IRB approval. This form helps you determine whether your project meets the federal definition of research involving human subjects.

Projects that do not require submission to the Human Subjects Protection Program may still have other requirements.

- Projects involving Native Americans, including the use of existing information or specimens, require review and approval by the tribe(s) involved.
- Projects involving deceased persons and involve Protected Health Information may fall under HIPAA regulations. Contact the HIPAA Privacy Officer, Jeniece Poole at (520) 621-1465.

If you have any questions or are unsure how to answer these questions, please contact the HSPP office at (520) 626-6721 **BEFORE** beginning your research. Violating Federal regulations is a serious matter and may result in the suspension of your research and/or loss of federal funding.

Please note: if you determine that this does not require IRB review, such determination **cannot for any reason** be reversed or revoked at a later date for **any** part of the project.

WORKSHEET

1. Is this project a <u>systematic</u> investigation <u>designed</u> to develop or contribute to <u>generalizable knowledge</u> (including use for a thesis or dissertation, publication or poster presentation)? If NO , the project is not considered research; IRB review is not required. Stop here. If YES , go to question 2. Comments/Rationale:	☒ Yes	☐ No
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THE UNIVERSITY OF ARIZONA HUMAN SUBJECTS PROTECTION PROGRAM
WORKSHEET FOR DETERMINING IF RESEARCH INVOLVING HUMAN SUBJECTS REQUIRES IRB REVIEW

<p>Comments/Rationale: The proposed dissertation research project is to examine if differences exist in female versus male juvenile offenders in risk factors predictive of offense severity status versus obstruction versus misdemeanor versus felony offenses. The proposed project may contribute to the understanding of factors associated with juvenile delinquency, and thus may inform prevention and intervention efforts.</p>		
<p>2. Does the research involve <u>obtaining</u> information about living individuals (this category includes secondary data analyses of existing data that was not obtained by the investigator of the proposed project)? If NO, the project is not considered human subjects research; IRB review is not required. Stop here. If YES, go to question 3. Comments/Rationale: The proposed project data will consist of a database consisting of juvenile court data and educational data from the 2006-2007, 2007-2008, and 2008-2009 academic years, which will be obtained through an intergovernmental data-sharing agreement between the local juvenile court center, a local school district, and the University of Arizona. To maintain student confidentiality, the participants have been assigned random identification numbers by individuals from the juvenile court center, none of whom were affiliated with the University of Arizona, and no identifying information will remain in the database. The investigator will not have access to a key that can link database information to protected health information. The sanitized database will be delivered electronically in Microsoft Excel format, and will be converted into SPSS for data analyses.</p>	☒ Yes	☐ No
<p>3. Does the research involve intervention or interaction with individuals OR is the information individually identifiable where the identity of the subject can be readily ascertained (e.g. through use of a unique identifier/code or use of any of the 18 elements of HIPAA that constitutes an identifier – name, age over 89, elements of dates including birth date or dates of service, medical record number)? If No, the project is not considered human subjects research; IRB review is not required. If YES, complete and submit an IRB application to the HSPP office. Note that the project still may not require IRB review; however, this determination should be made within the HSPP office. Comments/Rationale: The proposed project will not involve interaction with any individuals. No information in the database to be maintained, reviewed, and analyzed by the PI and Co-PI will contain any of the 18 elements that HIPAA defines as protected health information.</p>	☐ Yes	☒ No

ASSURANCES

1. PRINCIPAL INVESTIGATOR

By signing below, I, the Principal Investigator, certify that I have accurately answered the items listed and believe that the research project does not constitute human subjects research in accordance with DHHS regulations.

8-24-2010	DPS
Principal Investigator Signature	Date	Department
Schoenfeld@email.arizona.edu	/ 955-2711	

THE UNIVERSITY OF ARIZONA HUMAN SUBJECTS PROTECTION PROGRAM

WORKSHEET FOR DETERMINING IF RESEARCH INVOLVING HUMAN SUBJECTS REQUIRES IRB REVIEW

Advisor Signature

Date

Department

2. DEPARTMENT HEAD

Based on the information provided by the Principal Investigator, I have determined that this project does not constitute human subjects research.

Head of Department, College Dean or comparable authority (Signature)

Print Name

Title

Date

APPENDIX C

INTERGOVERNMENTAL AGREEMENT

**INTERGOVERNMENTAL AGREEMENT
BETWEEN TUCSON UNIFIED SCHOOL DISTRICT, NO. 1
PIMA COUNTY JUVENILE COURT CENTER
And
THE ARIZONA BOARD OF REGENTS, ON BEHALF OF
THE UNIVERSITY OF ARIZONA
FOR JUVENILE DATA EXCHANGE**

This Intergovernmental Agreement ("Agreement") is entered into this day among Tucson Unified School District No. 1 ("TUSD"), the Pima County Juvenile Court Center ("PCJCC"), and the Arizona Board of Regents, on behalf of The University of Arizona ("University").

RECITALS:

TUSD is a public school district of the State of Arizona and is authorized to enter into this agreement pursuant to A.R.S. § 11-951, et seq. and A.R.S. § 15-342.

PCJCC is a public agency of the State of Arizona and is authorized to enter into this Agreement pursuant to A.R.S. § 11-951, et seq.

The University is an instrumentality of the State of Arizona and is authorized to enter into this agreement pursuant to A.R.S. § 11-951, et seq. and A.R.S. § 15-1625.

The parties share common interests of providing accountability, education, equity and safety to the individuals served by both institutions to prepare them to be responsible and productive members of the community at large.

The parties desire to identify and address any issues of disproportionate minority representation in areas of school discipline and the justice system.

The parties desire to identify barriers for educational success for court involved juveniles and collaborate to improve educational outcomes for court involved juveniles.

The parties desire to collaborate to provide appropriate programs and services to intervene with juveniles currently involved in the juvenile justice system, provide appropriate programs and services designed to deter at-risk juveniles from dropping out of school or other delinquent behavior, increase the safety and security of the community and its children by reducing juvenile crime.

The parties also desire to collaborate with the University on research projects related to special education issues of court involved youth in order to collaborate to improve educational outcomes for court involved juveniles with special education issues and needs.

TUSD and PCJCC believe that the mutual exchange of educational records and court data pertaining to individuals served by both institutions, and that limited disclosure of data to the University for analysis and research will facilitate and further their common interests and goals.

PURPOSE:

The purpose of this Agreement is to facilitate the **broad** sharing of information regarding the students who **are enrolled or have been enrolled in TUSD and who are also involved in the PCJCC system**. The shared data will be compiled into statistics on court involved juveniles that entered the justice system via school-based referrals **and also used to create strategies to improve educational outcomes for all court involved youth**. The statistics will be used to trace and evaluate outcomes for the juveniles, identify trends and eventually address any deficiencies in the school-based referral and justice systems. The results of this process are expected to assist in the following objectives:

- Providing appropriate programs and services to intervene with juveniles currently involved in the juvenile justice system.
- Providing appropriate programs and services designed to deter at-risk juveniles from dropping out of school or **engaging in** other delinquent behavior.
- Increasing the safety and security of the community and its children by reducing juvenile crime.
- **Developing strategies to improve educational outcomes for court involved youth including those with special education issues and needs.**

STATUTORY AUTHORITY:

A.R.S. §15-141(E); A.R.S. §15-342; A.R.S. §11-952; and 34 CFR 99, et seq. (Family Educational Rights and Privacy Act, "FERPA").

DURATION AND EFFECTIVE DATE:

This Agreement shall be in effect for a term of one year beginning on the date of signing by all necessary parties, unless terminated earlier as provided in this Agreement. The Agreement may be extended for up to nine additional one-year terms upon the Agreement of TUSD and PCJCC.

TUSD OBLIGATIONS:

TUSD will provide the following data (in Excel Format) to PCJCC for the purposes described in this Agreement as requested by the Presiding Judge of the Pima County Juvenile Court or designee and the President of the TUSD Governing Board or designee:

TUSD will provide PCJCC with **data** regarding its students **for any school year requested** who were referred to the courts for offenses allegedly committed on school property (school-based referral) **or students who have been suspended or expelled from any TUSD school**. The student data shall include: Name (first, middle, last), date of birth, gender, mother's last name, date of school referral, grades, attendance records, race/ethnicity, grade level, schools attended (enrollment history), test scores (including AIMS testing and TerraNova scores for 9th graders), number of credits as of end of school year, special education/504 status/current IEP, IDEA disability diagnosis, dropout status (distinguishing between non-attendance drop and disciplinary withdrawal), disciplinary actions or proceedings regarding the students, reason for suspension/expulsion (identified by school), duration of suspension/expulsion, prior discipline record (number of suspensions; number of expulsions), residential zip code, information on school disciplinary action, SAIS number, Special education status, English Language Learner status, and eligibility for reduced/free lunch subsidies.

Using data provided by PCJCC, TUSD will validate and report to PCJCC enrollment of students who have reported to be in TUSD schools and programs.

TUSD will also provide additional data consistent with the purposes of this agreement upon the written request of the Presiding Judge or designee and concurrence by the President of the TUSD Governing Board or designee.

PCJCC OBLIGATIONS:

PCJCC will provide data (in Excel Format) to TUSD for the purposes described in this Agreement as requested by the Presiding Judge of the Pima County Juvenile Court or designee and the President of the TUSD Governing Board or designee:

PCJCC will provide to TUSD data of all juveniles referred to the court (physical and paper) during the most recent school year who have self-reported as being in a TUSD school. The data on the juveniles will include: Name (first, middle, last), date of birth, gender, and mother's last name.

PCJCC will compare the school-based referral data provided by TUSD against juvenile records in its tracking system to obtain a data set of those juveniles who were subsequently processed by PCJCC.

PCJCC will use the subset of validated records as the denominator in determining the percentage of delinquency cases from TUSD that resulted from a school-based referral.

Consistent with purposes of the Model Dependency Court, Model Delinquency Court and Juvenile Detention Alternative Initiative/Disproportionate Minority Contact (JDAI/DMC) Initiatives, PCJCC will generate reports describing attributes of these cases and juveniles. Suggested attributes may include, but will not be limited to, demographics, charges (offenses), adjudication outcomes, and dependency status (dual-jurisdiction). PCJCC will share this TUSD-specific report with TUSD. Dependency

status, if included, will only be reported as an aggregate measure or percentile due to statutory protections of confidentiality.

PCJCC will provide to the University validated record data, absent personally-identifiable student information for use in the University's research and analysis. In order to track student outcomes, the data PCJCC provides to the University may use a unique identifier so that personally-identifiable student information is not disclosed to the University.

Before PCJCC provides the validated record data to the University, PCJCC will provide TUSD with the opportunity to review the validated record data and approve its release as being in compliance with the confidentiality safeguards established by this Agreement.

PCJCC will also provide additional data consistent with the purposes of this agreement upon the written request of the President of the TUSD Governing Board or designee and concurrence by the Presiding Judge or designee.

UNIVERSITY OBLIGATIONS:

The University will provide to PCJCC and TUSD regular reports or results of the research it conducts based on the data provided under this Agreement that will address the purpose of this Agreement.

CONSIDERATION AND COSTS:

The consideration for this Agreement is the exchange of information between the parties. No funds will be exchanged between the parties. Each party shall bear its own costs for implementation of this Agreement. The costs, if any, incurred by any party in the performance of the obligations under this Agreement are conditioned on availability of funds.

INDEMNIFICATION:

Each party (as "Indemnitor") agrees to indemnify, defend and hold harmless the other party (as "Indemnitee") from and against any and all claims, losses, liability, costs or expenses (including reasonable attorney's fees) (hereinafter collectively referred to as "Claims") arising out of bodily injury of any person (including death) or property damage, but only to the extent that such Claims which result in vicarious/derivative liability to the Indemnitee are caused by the act, omission, negligence, misconduct or other fault of the Indemnitor, its officers, officials, agents, employees or volunteers.

DISPUTE RESOLUTION:

This agreement is subject to arbitration to the extent required by A.R.S. §12-1518, A.R.S. §12-133 and Rule 3.9, Pima County Superior Court Local Rules.

CONFLICT OF INTEREST:

This agreement is subject to the provisions of A.R.S. §38-511.

LIMITATION ON DISCLOSURE:

Educational and juvenile court records provided pursuant to this Agreement shall be used solely for the purposes of the Agreement and shall not be disclosed to any other party, except as provided by law. **The parties agree that there will be no disclosure of any data outside of TUSD or PCJCC except under the terms of this Agreement or without the express written consent of the parties.**

The parties agree to provide non-identifying information to the University for research purposes only. The University agrees not to disclose any information received or data developed without specific written approval by TUSD and PCJCC.

TERMINATION:

Either party may terminate this Agreement at any time by mailing the other party written notice of termination by certified mail, return receipt requested, at least thirty (30) days prior to the effective date of said termination.

INSPECTION AND AUDIT:

All books, accounts, reports, files and other records relating to this Agreement shall be kept for five (5) years after termination of this Agreement, and shall be subject at all times to inspection and audit by either party. Such records shall be produced at the Auditor General's Office or at the requesting party's principal office within a reasonable time after request.

GOVERNING LAW:

This Agreement shall be construed under the laws of the State of Arizona and incorporates by reference all mandatory provisions for state contracts.

NOTICES:

Any and all notices, requests or demands given or made upon the parties hereto, pursuant to or in connection with this Agreement, unless otherwise noted, shall be delivered in person or sent by United States Mail, postage prepaid, to the parties at their respective addresses as indicated on the signature page of this document.

NON-DISCRIMINATION:

The parties agree to comply with State Executive Order No. 99-4 and all other applicable state and federal laws, rules and regulations, including the Americans with Disabilities Act.

SEVERABILITY:

If any provision of this Agreement is held invalid as to any of the parties or any person or circumstances, such invalidity shall not affect other provisions or applications of this Agreement which can be given effect, without the invalid provision or application and to this end, the provisions of this Agreement are declared to be severable.

ENTIRE AGREEMENT:

This document constitutes the entire Agreement between the parties and all prior or contemporaneous agreements and understandings, oral or written, are hereby superseded

and merged herein. This Agreement shall not be modified, amended, altered or extended except through a written amendment signed by the parties and recorded with the Pima County Recorder or Arizona Secretary of State, whichever is appropriate.

District: Tucson Unified School District, No. 1

Court: Pima County Juvenile Court
Center

Dated: 7-10-07

Dated: 6/26/07

By:
Joel Ireland

By:
Patricia G. Escher

Title: Governing Board President
Address: 1010 East 10th Street
Tucson, AZ 85719

Title: Presiding Juvenile Judge
Address: 2225 East Ajo Way
Tucson, AZ 85713

The Arizona Board of Regents, on behalf of
The University of Arizona

Dated: June 18, 2007

By:
Lee Anne T. Peters

Title: Contract Officer
Address: 888 N. Euclid Avenue, #515
Tucson, AZ 85719

INTERGOVERNMENTAL AGREEMENTS:**REVIEWED AND APPROVED AS TO FORM**

The foregoing Intergovernmental Agreement among Pima County Juvenile Court, the Tucson Unified School District and the Arizona Board of Regents, on behalf of The University of Arizona has been reviewed pursuant to A.R.S. §11-952 by the undersigned, who have determined that it is in the proper form and is within the powers and authority granted under the laws of the State of Arizona to those parties to the Intergovernmental Agreement represented by the undersigned.

PIMA COUNTY JUVENILE COURT**TUCSON UNIFIED SCHOOL
DISTRICT**

 Assistant Attorney General Date 6/26/07

 Attorney for TUSD Date 6/27/07

**THE ARIZONA BOARD OF REGENTS, ON
BEHALF OF THE UNIVERSITY OF ARIZONA**

 Attorney for University of Arizona Date 6/27/07

INTERGOVERNMENTAL AGREEMENT
BETWEEN
THE ARIZONA SUPERIOR COURT IN PIMA COUNTY, ON BEHALF OF
ITS JUVENILE COURT CENTER, THE TUCSON UNIFIED SCHOOL DISTRICT NO 1
And
THE ARIZONA BOARD OF REGENTS, ON BEHALF OF THE UNIVERSITY OF ARIZONA
FOR JUVENILE DATA EXCHANGE

AMENDMENT NO. 01

THIS AMENDMENT to that certain Agreement by and between the Arizona Superior Court in Pima County on behalf of its Juvenile Court Center, (PCJCC), the Tucson Unified School District (TUSD), and the Arizona Board of Regents, on behalf of the University of Arizona (UNIVERSITY).

WHEREAS, COURT, TUSD and UNIVERSITY have entered into an intergovernmental agreement to facilitate the broad sharing of information regarding students who are enrolled in TUSD and are also involved in the PCJCC system; the mutual exchange of educational records and court data; and limited disclosure of data to the UNIVERSITY for analysis and research which will facilitate and further the common interests and goals of all three parties;

WHEREAS, COURT, TUSD and UNIVERSITY desire to amend said Agreement.

NOW, THEREFORE, it is agreed as follows:

1. Pursuant to Article IV "Duration and Effective Date" in the original Agreement all parties agree to extend the Agreement for a one (1) year period, effective July 1, 2008 through June 30, 2009.
2. All terms and conditions shall remain the same.

All other provisions of this Agreement, not specifically changed by this Amendment, shall remain in effect and be binding upon the parties.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first written below.

PIMA COUNTY JUVENILE COURT CENTER

Patricia Escher
Presiding Judge
2225 Easy Ajo Way
Tucson, AZ 85713-6295
5/9/08
Date

TUCSON UNIFIED SCHOOL DISTRICT
NO 1

Alex Rodriguez
Governing Board President
1010 East Tenth Street
Tucson, AZ 85719
7-08-08
Date

THE ARIZONA BOARD OF REGENTS, on behalf of the
UNIVERSITY OF ARIZONA

Contract Officer
888 N. Euclid Ave., #515
Tucson, AZ 85719
7/9/08
Date

NO 30270
9-19-08

INTERGOVERNMENTAL AGREEMENTS:**REVIEWED AND APPROVED AS TO FORM**

The foregoing Intergovernmental Agreement among Pima County Juvenile Court, the Tucson Unified School District and the Arizona Board of Regents, on behalf of The University of Arizona has been reviewed pursuant to A.R.S. §11-952 by the undersigned, who have determined that it is in the proper form and is within the powers and authority granted under the laws of the State of Arizona to those parties to the Intergovernmental Agreement represented by the undersigned.

PIMA COUNTY JUVENILE COURT**TUCSON UNIFIED SCHOOL
DISTRICT**

5/6/08
Assistant Attorney General Date

6/16/08
Attorney for TUSD Date

**THE ARIZONA BOARD OF REGENTS, ON
BEHALF OF THE UNIVERSITY OF ARIZONA**

7/1/08
Attorney for University of Arizona Date

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