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UNIVERSITY OF SAN DIEGO
Hahn School of Nursing and Health Science
DOCTOR OF PHILOSOPHY IN NURSING

MOTHER-SON CONNECTEDNESS, SUBSTANCE USE, AND YOUNG MEN'S
CRIMINAL JUSTICE SYSTEM INVOLVEMENT

By

Kim L. Moreno

A dissertation presented to the
FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE
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DOCTOR OF PHILOSOPHY IN NURSING

May 2011

Dissertation Committee

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Abstract

The relationship between a mother and her son and its influence on health and risk behaviors as a boy becomes a man has had little exploration. The purpose of this study was to examine the relationships between mother-son connectedness, substance use, serious delinquency, violent delinquency, and criminal justice system involvement in young men. This study uses data from The National Longitudinal Study of Adolescent Health (ADD Health), a school-based study of students in grades 7 -12 in the United States. Multiple regression, ANOVA, and logistic regression were used to analyze independent and dependent variables. Results show a perception of connectedness, which is significantly less in mothers of males with criminal justice system involvement. African-American males reported more connectedness than did Asian or White males. Mother Perception Scale (M) is shown to be a significant predictor of criminal justice system involvement. Binge drinking and frequency of using marijuana during the past 30 days were significantly related to serious delinquency. Binge drinking and the mother's report of feeling less able to trust in her son were also significantly connected to violent delinquency.

The Nursing profession provides healthcare across settings to populations diverse in gender, age, ethnicity and race, and socioeconomic status, including those involved

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with the criminal justice system. Nurses have an opportunity to make a significant contribution to health and quality of life through health promotion, disease prevention, and health restoration. The results of this study will be useful in the development of interventions with youth, families, and communities, which support healthy transitions to adulthood.

This study adds to limited knowledge of the relationship between mothers and sons during adolescence and young adulthood and the outcomes that are impacted. Future research should explore interpersonal and social networking influences on varying populations through dyadic analysis and other approaches to relationship science. Research focusing on the incarcerated should extend to those impacted by kinship or caring, including children, family, siblings, parents, peers, and others involved with prisoner reentry. The effect of correctional work environments on the health and well being of workers is also of import because of the personal and economic impact.

Dedication

To my Dad, Frank Joseph Ruppert, (February 29, 1920 – September 14, 2010).
How you nudged and prodded until even you had to let go. I know how much you would
revel in this day. You taught me an infinite number of lessons about “there but for the
grace of God, go I”. Thank You. I miss you.

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Well, by golly it took a village!

Starting with the love of my life and my guardian angel, my husband Ralph. He has been at the ready and ever willing to do whatever was needed to help me accomplish my goal. I'm particularly grateful for the spirit in which he has assumed so many of our family responsibilities while I endeavored toward what I know looked like the impossible dream. Let the sunshine in! For loving me and living surrounded by boxes, subsumed by stacks of papers and suffering through my fits and starts of educational adventures over a lifetime. For respecting and honoring my desire to learn

To my dear sweet sister Rory, who promised to be my staunchest supporter through my darkest hour if only I would keep on going...she never failed me. It is a joy to share this with her.

And to my children, Chris, Jamie, Adam, David and Ariella and my grandchildren, Jake, Coreen, Quinn and Piper. who have taught me more than I ever knew I would need to know. My brothers and sisters and my parents...who have always given me more recognition than anyone deserves. Thought I was as smart as any person can get...and yet cheered with me as I climbed ever onward.

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To my dear friends and family who encouraged me when my spirits and energy were failing reminding me that my victory was theirs. It made the hard work worthwhile.

To Cheryl Cooke, PhD RN for clearing the path for me and lighting the way.

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And to those many other supporters who encouraged and applauded me along the way; my family, friends, particularly my Uncle Jack and Sally and my cousin Pat. To my Bible study and church friends, my co-workers, especially the group who inspired me to return to my endeavor after a four year hiatus

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Chapter I

Introduction

The decimation of families and communities resulting from the mass imprisonment of young men in America is a contemporary tragedy. The United States has the highest rate of incarceration of any industrialized nation in the world. Almost 2.3 million people were in jail or prison at year-end 2007, the majority of them males. This translates to one in every 100 United States residents living in jail or prison. (Warren, Gelb, Horowitz, & Riordan, 2008) The economic burden on individuals and society is staggering. The expenditures for prison related expenses in the state of California in 2007 exceeded that spent on mental health services and health related services combined (Garcia, 2010).

Young adult males and ethnic minorities have higher rates of criminal justice system involvement, and disproportionately higher rates of incarceration. (2009; U.S Department of Justice, Office of Justice Programs, & Bureau of Justice Statistics, 2008; U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, & 2008; Warren et al., 2008) From a behavioral perspective, violence, delinquent behavior, and substance use have been shown to be associated. In addition to gender, age, and ethnicity, other contextual

factors which have been correlated include family structure, socioeconomic status, previous parental imprisonment, and gang membership (Paz, 2005).

Criminal justice system involvement depletes the physical, emotional, economic, and spiritual life of those who are affected (Apel & Sweeten, 2009), exacts a toll on the development of the individual, and impedes the development of the social capital from which communities are constructed. Involvement in the criminal justice system, and incarceration in particular, has been associated with promoting entry into a deviant lifestyle and onto a path of behavior leading to enduring and lifelong consequences.

Arrest, conviction, and incarceration have been shown to impact individuals, families, and communities even when resulting criminal sanctions are less severe than incarceration. Significant links to diminished success in employment, reduced participation in the workforce, and reduced educational attainment have been shown (2009).

Violence, delinquent behaviors, and substance use have been inextricably associated with increased likelihood of involvement in the criminal justice system and the early initiation of health related behaviors having the potential for lifelong impact and debilitation.

Violence and other behaviors that put youth at risk for injury and death are more prevalent among youth and certain ethnic minorities. Intentional and unintentional

injuries resulting in physical and psychological trauma have been linked with lifelong physical and mental health problems (Washburn et al., 2008).

Substance use is one of the most significant threats to health across the lifespan. Association with increased violence and delinquent behaviors has been shown. When initiated at a young age, it has been shown to result in more extensive criminal justice system involvement and higher risk of incarceration (Slade et al., 2008).

Numerous studies have shown higher rates of serious mental illness, substance use, infectious diseases, and traumatic injuries present in men with criminal justice system involvement. Infectious diseases including HIV, other sexually transmitted diseases, hepatitis, and tuberculosis all have higher rates of occurrence among the incarcerated (Ascher-Svanum, Nyhuis, Faries, Ball, & Kinon, 2010). Health issues related to poor nutrition, stress, and inadequate hygiene are magnified by the lack of preventative care, self-neglect, and inadequate access to healthcare (Kelso, 2008).

The right to adequate healthcare for prisoners is a constitutional right protected by the Eighth Amendment of the U. S. Constitution prohibiting “cruel and unusual punishment”. The Fourth and Fourteenth Amendments prohibit punishment without “due process”. Inadequate care of serious illness or injury has been interpreted as “deliberate indifference” to inmates and detainees, and is therefore considered “unusual punishment”. This was upheld in *Estelle v Gamble*, 1976. Detainees awaiting trial were also included in this protection.

Nurses are seen as important to safeguarding the health of those involved in the criminal justice system. Recently, the failure to provide adequate quality health care to those in correctional institutions in the State of California resulted in the medical services being placed in Federal Receivership. The receivership was tasked to design and implement a turnaround plan to bring health care to a constitutional level. As part of this endeavor, recruitment practices and salary increases for nurses were among the first actions undertaken (Kelso, 2008).

Increased incidence of health problems exists not only in the individuals who are directly involved with the criminal justice system, but also in those who are closely involved with them through kinship, affection, and caretaking. Children, spouses, parents, grandparents, and others who have ongoing relationships with the involved individuals, or those who will carry out economic or care-giving responsibilities for them in their absence are affected. This includes ongoing social and economic support directly to the prisoners while under state jurisdiction.

There is a disproportionate representation of young men and racial/ethnic minorities with criminal justice system involvement (Sabol, West, & Cooper, 2009). Commensurate participation in high-risk behaviors calls for a greater understanding of the developmental trajectory of young men as they move into emerging adulthood. This is an unaddressed area in the current literature. A greater understanding of the familial, social, and environmental influences, and socio-cultural norms is needed to appreciate

those needs and health challenges that develop over time, often in crises. Increased understanding is needed of the strengths, protective factors, and support systems that bolster young men during illness and adversity while moving from adolescence to adulthood. Certain aspects may provide the foundation to enhance life affirming behaviors and deterrent forces.

Behaviors linked to chronic, debilitating life long personal and societal consequences are of particular concern. For example, high risk behaviors such as substance abuse, self-directed and interpersonal violence, and high risk leisure and recreational pursuits contribute to motor vehicle accidents, serious injury, traumatic brain and spinal cord injury, chronic health problems, and death. This study will focus on the mother-son relationship as a protective force against substance use, violence, and delinquent behavior and their relationship to criminal justice system involvement in emerging adult males.

Purpose and Aims The purpose of the proposed study is to explore the quality of the relationship between adolescent sons and their mothers and how this relates to later involvement with the criminal justice system as they transition to emerging adulthood. This study uses a framework of Resilience Theory, and the concept of protective factors and their contribution to the development of resilience, to examine mother-son connectedness and the moderating effects of substance use, violence, and delinquent behaviors to the outcome of criminal justice system involvement.

This study has the following aims:

- Aim I Examine mother-son connectedness in young men with involvement in the criminal justice system
- Aim II Examine mother-son connectedness among ethnicities
- Aim III Examine mother-son connectedness, substance use, serious, and violent delinquency as predictors of criminal justice system involvement
- Aim IV Explore the mother-son connectedness and substance use as predictors of serious and violent delinquency
- Aim V Explore factors in the mother-son dyad that predict violent delinquency

Theoretical Framework The research literature contains many examples of negative outcomes such as substance use, delinquent behavior, and criminal justice system involvement resulting from extensive exposure to adverse situations such as poverty, family mental illness, and parental neglect. Some individuals, however, appear to journey through profound personal, familial, and social difficulties without suffering the anticipated short and long-term consequences. The quality of returning to a normal state of health, mind, and strength following adversity, described as resilience, is of interest to the study of successful transition to adulthood.

Some individuals appear to possess the quality of resilience more than others.

Why some individuals manifest this quality more than others is unknown, but is relevant for this proposed study (Tusaie, Puskar, & Sereika, 2007). Resilience is most commonly

conceptualized as a positive, even desirable, characteristic. The resilient individual has been described as projecting a healthy, balanced sense of self, even in the face of adversity, while simultaneously finding meaning in life. Others disagree, arguing that the process by which an individual develops resilience can result in callous, self-destructive attitudes, values and behaviors that detract from the development of normal healthy relationships and perspectives. Responses derived from over use, although effective at another time in life, are no longer useful (Higgins, 1994). An examination of the development of resilience through concept analysis reveals the antecedents of both adversity and a caring, emotionally present person at some point in the person's life . Coping methods involving determination, sociability, and the ability to rebound were inherent (Dyer & McGuinness, 1996). Although most researchers assert that resiliency by definition is a state of being that enables a person to overcome adversity without suffering adverse consequences, some authors (Hunter & Chandler, 1999) proposed that when applied to children and adolescents the literature was more equivocal.

Resilience Theory developed out of the belief that qualities of resiliency are positive and health enhancing. Garmezy (1990) advanced the concept of internal and external protective factors which contributed to the child's ability to develop resilience. Internal factors included intelligence, temperament, ability to empathize, sense of humor, and internal locus of control. External factors included family cohesion and sense of warmth, whereby the child feels valued, protected, and loved by at least one parent. The

protective value of feeling loved and connected has been asserted (Dyer & McGuinness, 1996). Other factors postulated to contribute to the development of resilience, or to result in positive outcomes, include “envisioning the future”(Aronowitz, 2005), and enhanced educational expectations from others.

The role of community, family, and other contextual factors has also been of interest for its effect on development and behavior during adolescence and beyond, postulating that development unfolds as the result of the interplay of factors including those external to the individual. Context, encompassing the breadth of familial, peer, cultural, and social networks, schools, neighborhoods, and communities is believed to play a significant role in the development of knowledge, attitudes, and abilities. With Resilience Theory the concept of protective factors describes factors that potentially diminish the impact of negative circumstances, events, consequences, and problem outcomes. “Connectedness” to parents, peers, other adults, and communities has been identified as a significant protective factor in the development of resilience (Aronowitz, 2005).

Connectedness has been conceptualized as the quality of relationship between people, entities, or communities which encompasses a mutual sense of caring, warmth, and involvement. Measures of connectedness have also included the sharing of time and activities, supervision and monitoring, and physical presence. Connectedness to schools and communities is of interests, studies focused on connectedness between parent-child

and others have seen significant results. Recent studies have looked at the effect of parental influence and parent- child connectedness on behavioral outcomes such as initiation of sexual behavior, school achievement, and delinquent behavior. These studies have shown that parents often have more influence than previously believed (Resnick, 2004).

The relationship between family dyads and some behavioral outcomes has been examined in previous studies. Parental influence has often been studied from a gender-neutral perspective, focusing on parents as interchangeable, undifferentiated entities, or roles. Alternative family structures have further confused the issues. In studies of family dyads, intergenerational research has looked at same sex relationships such as bonding between father and son, or criminal behavior from one generation to another. Few studies have been found that examine the influence of the mother-son relationship on behavioral outcomes. Studies examining the quality of the parent-child relationship, gender and the outcome of criminal justice system involvement in young adulthood were not found.

Many studies have examined the relationship of violence and delinquent behavior to criminal justice system involvement. None were identified that examined the relationship of a son and his mother during adolescence to criminal justice system involvement later in young adulthood. Additionally, although there have been studies of the mother-son relationship and substance use, and concomitant research on the moderating effect of substance use, violence, and delinquent behavior on criminal justice

system involvement, no studies were found to examine all of these variables together in the emerging adult male.

Significance of the Study The results of this study were important to nursing because of the focus and concern of the nursing profession on prevention, health promotion, and the treatment of health concerns across genders, ages, and ethnicities in multiple settings, particularly within the community. It will further the knowledge and understanding of the influence of others on the little studied period of development that occurs as adolescents move into adulthood. The information from this study will be valuable in guiding the development of effective interventions with youth, parents, and families, which support healthy transitions to adulthood and beyond. Increased knowledge will improve the ability of those who are responsible for the care of individuals, families, and communities.

This study also advanced the science of dyadic relationship measurement by looking at the cross-gender relationships of mother and son using complementary instruments. Additionally, the analysis of results in relationship to an important outcome variable, criminal justice system involvement, added additional support to the validity of multiple perspectives in relationship measurement, in this case the maternal perspective, in an area dominated by unilateral self-report measures. Increased understanding of racial and ethnic differences in mother-son relationships is also significant.

Chapter II

Review of Literature

A young Black man in the United States has a one in nine chance in his lifetime of being incarcerated. In some communities that number increases to one in three. The personal and social burden of widespread criminal justice system involvement has stripped society of irreplaceable social capital and has caused unintended anguish, and economic and social consequences to large segments of the population. Criminal justice system involvement and incarceration has grown exponentially over the past ten years, while only marginally reducing the crime or overall safety of the populace. It has been reported as devouring a disproportionate share of resources which rely on taxpayer support, thereby displacing many other important public services that benefit the public and improve the quality of life, including education and health care.

Criminal justice system involvement exacts a toll on individuals and families resulting in physical, emotional, psychological, and spiritual suffering of offenders and those who are close to them through kinship and affection. The consequences associated with criminal justice system involvement are of concern to the nursing profession because of the health impact on individuals, families, and communities (Wilper, 2009). Nursing contributes directly through the care of those who are impacted, and indirectly through the public and professional discourse on the effects of current policies and

practice. Contributing factors are of concern to those who care for individuals and families. Increased understanding of attitudes, behaviors, and contextual factors influencing criminal justice system involvement and its outcomes will contribute to the effectiveness of future policy making aimed at insuring public safety and social justice.

Adequate health care is a constitutionally protected right for all prisoners, considered guaranteed by the Eighth Amendment of the U. S. Constitution. As one of the largest groups of health care providers for those involved in the criminal justice system, nurses promote health and safety, provide direct care for illness, injury, chronic conditions and emergencies, and participate in research and policy development. Nurses carry out this work in many settings including offices, clinics, schools, hospitals, jails, prisons, community agencies, public health, and the home.

As trusted public servants, nurses use their, knowledge and advocacy skills to protect the vulnerable. They provide the comprehensive, sensitive and compassionate direct and indirect care to families of those involved in the criminal justice system. These activities occur in many settings, public and private. Nurses contribute to prevention and health promotion efforts directed at reducing health disparities, as well as treating the comorbidities which occur because of history, lifestyle, and environment.

Resilience Theory provides the theoretical perspectives guiding this study. The concept of protective factors derived from Resilience Theory is employed to examine the risk behaviors of substance use, violence, and delinquent behaviors associated with

adolescence and emerging adulthood and how they are moderated by contextual factors. Research on mother-son relationships is examined to elucidate the concept of connectedness in the mother-son relationship and its implications for health. The development of a definition of mother-son connectedness and an approach to measurement that has authenticity and veracity will be elucidated to enable further research.

Because this study aims to increase understanding of factors associated with criminal justice system involvement, including protective factors and moderators, this following review of the literature looks at criminal justice system involvement in the United States, health related issues, and social and economic impact on the offender and his family. It examines the variables shown to be disproportionately represented within criminal justice system involvement, including gender, age, and ethnicity. Research in the areas of substance use, violence, and delinquent behaviors are also examined for their role as moderators. The focus will be upon significant issues, study results, critical interpretation, and unaddressed areas within the current literature.

Criminal Justice System Involvement

Prevalence and impact. The United States incarcerated more people than other any country in the world during 2008. Indeed, America led the world in both actual numbers of incarcerated people and the rate in which they were incarcerated, exceeding both South Africa and Iran. China, with a larger population, had the second greatest

number of people in jail or prison with 1.5 million behind bars, significantly behind the United States. An analysis of Prison and Jail Inmates on December 31, 2007 by the United States (US) Department of Justice, Bureau of Justice Statistics showed 2,293,157 prisoners were held in federal prison, state prison, or in local jails. According to data analyzed for the Pew Report, 2,329,258 people were behind bars in the United States as of January 2008, translated to more than one in every 100 adults behind bars (Warren et al., 2008) . A total of 4.7 million adult men and women were under Federal or State probation, or parole jurisdiction with an estimated 3,995,200 on probation and 753,100 on parole. This represents more than a 200 percent increase over the past 10 years. While the numbers in state or federal prisons reached an all time high by the end of 2008, the growth rate of the state and federal prison population showed the smallest annual increase since 2000 (Sabol et al., 2009). This slower rate of increase was associated with fewer court commitments and accompanied by an increase in the number of offenders released into the community without supervision (Sabol et al., 2009). Over the past decade, these increases in incarceration have resulted from public and judicial policy changes that resulted in harsher sentences for less significant crimes, longer often mandatory sentences, fewer prisoners given early release or parole, and strict enforcement of technical infractions such as probation and parole violations. The number of jail inmates went to from 193 to 259 per 100,000 United States residents between 1995 and 2005 (U.S. Department of Justice et al., 2008). The total number of state prison inmates

serving time for violent offenses increased from 43% in 1995 to 53% in 2005 to an estimated 687,700 (U.S Department of Justice et al., 2008). On the other hand, drug related offenses went from 22% in 1995 to 20% in 2005.

There was a 1.5% growth in inmates from 2006 to 2007. Although it was less than the average annual growth of 2.6% that occurred from 2005 to 2006, it was still an increase.

Over 5.1 million adult men and women were supervised in the community, either on parole or on probation in 2007 (Justice, Programs, & Bureau of Justice Statistics 2008). At the end of the year in 2007, drug offenses were most common among those on probation (27%). Of the offenders who were on parole, 37% involved a drug offense.

Gender, age, and ethnicity. Recent studies showed that recipients of punishment involving physical custody were unevenly distributed with regard to gender, age, racial, and socioeconomic characteristics. Males far outnumber females in jail and prison in all areas of the criminal justice system. Men made up 93% of prisoners under state or federal jurisdiction. (Sabol et al., 2009).

Reports showed the majority of people going to jail were young males and that incarceration dropped with age, with significant ethnic disparities. Black males were incarcerated at a rate six and a half times higher than white males (Sabol et al., 2009). Some studies indicate that the lifetime possibility of a young Black man going to jail is one in 3 (Warren et al., 2008). Overall, Black men age 18 or older have a rate of one in

15. Black men between the ages of 20 -34, however, exhibit the highest rate of incarceration with one in nine (2009). As Black men age, this rate decreases with Black men over the age of 55 having an incarceration rate of one in 55. For Hispanic men ages 18 and older the rate of incarceration is one in 36. A recent review of year end 2008 data showed that the imprisonment rate in the U.S. resident population for males was 487 per 100,000 for white males; 1200 per 100,000 for Hispanic; and 3,161 per 100,000 Black males (Sabol et al., 2009).

Family and community consequences. Criminal justice system involvement has been shown to impact more than the arrested, convicted, and incarcerated. Over two million children have a parent behind bars, which is 50% more than a decade ago. Looking at correctional supervision in its entirety, an estimated 10 million children have experienced parental incarceration in their lifetime. Approximately seven million children currently have a parent under some type of correctional supervision such as probation, parole, or some form of alternative sentencing.

Mothers, fathers, spouses, siblings, friends, coworkers, and neighbors are all called upon to adapt to or respond to the criminal justice system involvement of those to whom they are connected by kinship or affection, and on occasion, by acquaintance or association. They are called upon to provide emotional support to frightened and anxious families often in crisis, and also provide financial and instrumental assistance such as transportation, temporary housing, and child-care. They support the implicated individual

directly through the provision of emotional support and communication by way of telephone, email, written contact, and visitation; through procuring and often taking financial responsibility for legal assistance; providing financial support for jail and prison supplies for the prisoner; and assuming the home, child care, and work duties that were the incarcerated individual's responsibilities. Several studies have shown the deleterious effects on individual family members of the added stress of having an incarcerated family member (Gilmore, 2004). The process of arrest itself, commonly perceived as a crisis, often takes place in an atmosphere of violence, and is frequently witnessed by children. Thus, criminal justice system involvement, irrespective of its ultimate outcome has been shown to have an impact on others.

Several studies demonstrated a strong link between familial criminality and subsequent criminal behavior on the part of youth. Criminal justice system involvement may be a chronic occurrence with an intergenerational prevalence (Barreras, Drucker, & Rosenthal, 2005). The reasons are unknown, but are postulated as including increased acceptability and destigmatization of criminal justice system involvement, thus diminishing the deterrent effect of criminal justice system involvement and incarceration. It has been reported that within some families and communities, criminal justice system involvement is characterized as a rite of passage, a familial legacy, and inevitability. In this context, a certain communal fellowship develops which may have involved a parent, sibling, cousin, aunt, uncle, or grandparent. In some communities it is not uncommon for

three or more generations of men and women to go through a single prison (Locy, 1999) or for two or more family members to be in the same prison concurrently. One study reported a single respondent having as many as 30 cousins who had gone through the California Youth Authority.

Substance use, violence, and delinquency. Substance use, violence, and delinquent behaviors have been associated with criminal justice system involvement in study after study. Oxford offers definitions of violence which include “behavior involving physical force intended to hurt, damage or kill”(Zimmer, 2008) and “unlawful exhibition of physical force”(Allen, 1992). The incidence of violence in the United States occurs at an alarming degree among all age groups, but particularly among youth. Homicide is the number two leading cause of death of young people overall and the number one cause of death among black men under the age of 24.

Delinquent behaviors can be construed as “guilt of minor crime or misdeed.” Although often thought of as age related and applicable to juveniles, the reference of “failing to do one’s duty” has application for all ages (Zimmer, 2008). Lesser crimes or misdeeds such as vandalism, property damage, and theft fall into this category. The trajectory of delinquent behavior generally involves an increase with age, peaking at mid to late adolescence (Rainone, Schmeidler, Frank, & Smith, 2006). In contrast, violent behavior peaks earlier and decreases with age. Though initial consequences of delinquent

behaviors may appear to have less significance, delinquent behaviors has been repeatedly shown to be associated with violence.

Within the criminal justice system environment, increased stress and anxiety, as well as diminished coping skills of both inmates and staff has been linked to increases in physical violence. This is magnified by the significant number of individuals with serious mental illness and personality disorders (Washburn et al., 2008). The overall physical and psychological environment has been shown to result in an atmosphere of extreme control. Overcrowding has made violence an ever-present threat.

Contextual factors. Youth development does not occur in isolation or along a strictly biologically determined course. Young men and woman develop through a complex process within the home environment and within a context of family and community. Peer relationships play a significant role in encouraging, rewarding, or discouraging all types of deviant and socially unacceptable behavior (Laird, Criss, Pettit, Dodge, & Bates, 2009).

High rates of incarceration, particularly in predominantly Black and Hispanic communities, have contributed to the attitude in some communities that incarceration is a transitional prerequisite to adulthood for many urban poor, particularly in inner city neighborhoods much as military service was perceived with previous generations. Participation in named gangs has been associated with an increase in interpersonal violence perpetration and victimization. Studies also report an increase in gang

membership over the past ten years. Reasons reported behind increases in gang membership include protection from violent behavior perpetrated by rivals. Research with gangs shows encouragement of violent and delinquent behavior with membership including ritualized violence and intimidation as part of induction and requisite for membership. Both perpetration and victimization rates are higher among gang members and among those with whom they have conflict. Thus membership in a named gang has been demonstrated as a risk factor for increased violent behavior and violent victimization.

Young people frequently have their debut encounters with violence and the criminal justice system when still they are under the primary supervision of a parent or parents, or parental figures. Most often, this responsibility falls to the mother, grandmother, stepmother, or other adult who performs a monitoring and supervisory role (Laird et al., 2009). Deviant socially unacceptable behavior is often carried out without parental knowledge. When it leads to criminal justice system involvement, however, particularly for underage youth, parental knowledge and involvement becomes inevitable.

Parenting styles have been implicated in criminal justice system involvement. A retrospective analysis of parenting styles was used to determine the influence on criminal justice system involvement of inmates versus non-inmates. Significant interactions between use of authoritarian and permissive styles of parenting were found (Chipman, Olsen, Klein, Hart, & Robinson, 2000). The relationship of parenting styles to later

criminal justice system involvement (Chipman et al., 2000) was examined using retrospective perceptions of parenting in 65 male and 63 female inmates in correctional facilities in Utah to determine if there were differences in parenting styles when factoring in the gender of either the parent or the child. Chipman's (Chipman et al., 2000) major purpose was to examine perceptions of adult offenders regarding the parenting they received in their family of origin. Special attention was given to gender differences and the type of parenting the inmates perceived that they received. A lower amount of authoritarian parenting was reported by inmate sons than inmate daughters. This contrasts with current literature, suggesting sons are more likely to receive authoritarian parenting. Non-inmate household sons were more likely to believe they received authoritarian treatment. This implies that inmate sons are more likely to receive different parenting than non-inmate sons.

Health and nursing implications. Prisoners are viewed as a vulnerable and protected group in the United States. They are the only group of individuals in the United States for whom adequate health care is a constitutional right. The Supreme Court ruling in *Estelle v. Gamble* in 1976 ruled that failing to provide adequate health care to prisoners was a violation of their eighth amendment rights and, in effect, cruel and unusual punishment.

Extensive studies show that men entering the criminal justice system involvement have health problems representative of the population of men in their age group. Lack of

health knowledge, an absence of health maintenance, poor nutrition, and untreated health problems combined with an increased participation in high risk behaviors and inadequate access to primary care have all been identified as contributing to acute and chronic health problems. Studies show higher rates of disease and disability related to substance use and abuse, obesity, smoking, and infectious diseases, including HIV, Hepatitis C, and tuberculosis. Diseases exacerbated by poor hygiene, exposure to the elements, and self-neglect were noted. Dental problems, often resulting from poor nutrition, absence of preventive care and treatment and methamphetamine use were particularly prominent. Recent outbreaks of H1N1 presented a new health threat.

The controlled physical and psychological environment of the criminal justice system, particularly of those in custody has also been shown to contribute to serious health problems and even death. Intentional and unintentional injuries are a continuing threat arising from close confinement with others. Higher than average rates of serious mental illness, personality disorders, and substance use have been shown to be prevalent. Conflict ridden relationships with other groups, often ethnically defined, and spanning generations are aggravated by illicit drug use. An aging population of inmates and arrestees has been brought about by changing population demographics, longer sentences, harsher treatment of parole and probation violations and drug addiction related crimes. These changes have increased the need for treatment of age-related illnesses and conditions.

Despite the increasing rate of incarceration, most prisoners are eventually released. Criminal justice system involvement may continue after release but with less intense supervision the overall expense, overcrowding of facilities, and inability to keep up with the demand has fueled arguments for alternative community based corrections. No matter the setting, the challenges of prisoner reentry, and return to the community is daunting. With the increased numbers of individuals involved in the criminal justice system, and the subsequent flow of prisoners moving from behind bars back into the communities from which they came, nursing contact is inevitable.

In addition to providing care in jails and prisons, nurses also care for prisoners in hospitals, correctional institutions, the military, and community based treatment centers. They care for their families in schools, clinics, public and private agencies, and in their own neighborhoods and families. Recognition of the frequency of incarceration within families, and disproportionately among certain ethnicities, age groups and communities will enable nurses to anticipate and provide comprehensive and compassionate care within ethical and legal parameters.

Unaddressed concerns. There is a scarcity of nursing literature measuring nursing care for individuals or aggregates involved with the criminal justice system. Minimal qualitative data is available regarding the nature of the work or working environment within the criminal justice system. Research with prisoners has been limited. There are special protections afforded prisoners because of their perceived vulnerability

resulting from captivity that present significant barriers to informed consent and research except in specific circumstances. The physical and legal constraints of the criminal justice system also make research difficult and time consuming. There is an absence of understanding what lies behind the significant ethnic disparities. Why are Blacks and Hispanics so disproportionately represented?

Minimal research has been published about the larger impact of criminal justice system on others including families, children, communities, and society. The associated hardships of disruptive family separations, socioeconomic problems, social isolation, stigma, physical, and mental health issues may have unrecognized, unintended consequences. There is a void in knowledge as to how families provide support and negotiate the criminal justice system and facilitate prisoner reentry upon release. When discussing children, most literature pertains to children of prisoners, rather than the adult child as prisoner. This represents a significant gap. Since young males are disproportionately represented in the criminal justice system, to whom do they look to for support through the process? Does the mother-son relationship confer meaningful support for responsible behavior in the days after? Little has been studied about the influence that the mother-son relationship has upon the development towards responsible, healthy adulthood.

While data exists regarding the incidence of health problems encountered within the criminal justice system, little information is available about the unique nursing

knowledge needed for working in this environment. Little is written about the recruitment, training, and job satisfaction of nurses working with this population. Nursing research examining contextual variables or preparing nurses to more competently and comfortably work in the environment is sparse.

Critical interpretation. The high divorce rates, shared child custody arrangements, dual working parents, large numbers of male and female parents on military deployment, high incarceration rates, incapacitated parents due to substance use or economic difficulties has resulted in mothers, and on occasion, grandmothers becoming the default support system for emerging adults both instrumentally and financially. Yet, retrospective analysis shows limited research related to the maternal relationship to adolescent attitudes and behavior. No studies were identified looking at the mother-son relationship in adolescence and how it moderates later involvement in the criminal justice system involvement during emerging adulthood.

The research literature does discuss the impact of parental involvement in the criminal justice system involvement on children and spouses, but little study has been done on the effects of mothers of children with criminal justice system involvement. The mother's role remains relatively unexplored throughout the process of criminal justice system involvement. Among young adult males, mothers appear to be to be the single most involved and constant support throughout the process. Perhaps due to later ages of marrying and increased time to financial independence for younger families, mothers

remain the predominant female in the relationship network for many young men. They are looked to for physical, financial, and instrumental care, emotional and social support well into adulthood. In contrast, research and interest in the role and influence of mothers of military personnel, a group with remarkably similar demographic characteristics including gender, age, and ethnicity, is well recognized.

The limited interest in the mother-son relationship has limited interventions focused on prevention, reentry, rehabilitation, and reduction of recidivism. Additionally the maternal stress goes unrecognized, unsupported, and untreated. Whatsmore, family support has been shown to be instrumental in community reentry following incarceration and in reducing recidivism. Policies and practices, which strengthen and support the mother-son relationship, may be of value.

Resilience Theory, with its focus on context and the role of protective factors is suited to a study of the quality of the mother-son relationship during adolescence and its relationship to criminal justice system involvement in emerging adulthood.

The relationship of nursing to the criminal justice system has been abstruse. The societal perception of appropriateness ascribed to male behavior has influenced nursing roles through history. Environments perceived as uncontrolled, potentially violent, unseemly or involving others not on their "best" behavior, have often been considered unsuitable or inappropriate for women. This has been evidenced on the battlefield (Revolutionary War, Civil War, within asylums, and in prisons). The exposure of women

to environments considered inappropriate has existed even before Florence Nightingale initiated changes in the practice of nursing during the Crimean war (Sarnecky, 1999). Nevertheless, contemporary policies of justice resulting in increased rates of incarceration have made an adequately prepared workforce a necessity. To meet the nursing challenge or provide the quality of care needed in the humanistic manner, greater understanding is necessary regarding the contributors, moderators, and sequelae of criminal justice system involvement. Of concern is that even with large numbers of people with demonstrated need, the nursing profession has done little to legitimize concern or involvement with this population.

The measurement of criminal justice system involvement and its effects is complicated. Much of the currently available data comes from officially collected data such as police reports. The type and amount of data collected is not uniform across jurisdictions. Differing categorizations and collection models make results incomparable.

Inadequate training or attention on the part of the data collector impacts the validity of the data collected. Much of the data is in a self-report format. Certain topics are vulnerable to the social desirability of certain answers. Memory failure or deliberate omission on the part of the respondent can also alter the reliability of the answers. Many types of violent and delinquent behaviors or crimes go unreported. The protected status of youth under the age of 18 makes records and information difficult to access. Informed

consent issues further restrict access. Additionally, lack of consistency in descriptions of contextual factors limits comparability.

There are also questions as to what comprises the most meaningful data. What is the most meaningful measurement? Even though there may be large volumes of data available, the age of the data may invalidate its research value. Relevance of the data is impacted by legal changes.

Substance Use Substance use and abuse by adolescents and young adults, while on the decline, continues as a major health concern in the United States (Johnston, O'Malley, Bachman, & Schulenberg, 2008). Scholars agree that substance use is implicated as a significant health concern for adolescents and young adults directly through the physical and psychological consequences of intense or prolonged use, or as a contributor to associated health problems such as motor vehicle accidents (Johnston et al., 2008).

Substance use has grown in American adolescents since 1960 and has been established in numerous recent studies as widespread in prevalence, diversified as to substance with new drugs being introduced over time and varying in frequency and intensity. Perceived risk and social acceptability of substance use have also changed over time and are influenced by the cohort effect (Grunbaum et al., 2003; K. Harris, Mullan, Gordon-Larsen, Chantala, & Udry, 2006; Johnston et al., 2008; Scal, Ireland, Borowsky, & 2003; Udry, 2003).

Negative outcomes of substance use, particularly when initiated at an early age, include risk of dependence, violence, sexual risk taking, accidental injury, and death (Office of Disease Prevention and Health Promotion, 2005).

An added consequence of substance use has been involvement with the illegal activities of obtaining, using, or selling illicit substances and the criminal activity undertaken to facilitate access and use. Criminal justice system involvement is frequently the result. These behaviors contribute to increased acceptability of unconventional behavior fostering further involvement with deviant peers. Increased conflict with parents at home is often the result.

Although certain factors have been shown to increase the risk or likelihood of use of specific types of substances or amount of substances used, another group of behaviors, attitudes and contextual circumstances have been shown to confer protective qualities. These factors include increased religiosity, increased family bonding, and increased parental monitoring and supervision, particularly where the adolescent identified with the parent.

Definition, cause and development. There are a number of theoretical viewpoints on the cause and developmental course of substance use in adolescents and in adults, but no theory sufficiently explains the questions. Theoretical frameworks inform the measurement of use, abuse and dependence. Some have suggested that drug involvement includes the stimulus of the specific drug and context, the response of the

individual and the negative consequences to self, others and property (Newcomb, 1989). One developmental model proposes that adolescents move from drug initiation to abuse, from licit to illicit substance (Kandel & Yamaguchi, 1993).

At present the Diagnostic and Statistical Manual of Mental Disorder (American Psychiatric Association 2000) defines substance use in four categories: substance intoxication, dependence, abuse, and withdrawal. Adults, rather than adolescents, have been the focus of inquiry and concern using these diagnostic categories. Partly because abuse develops over time, only intoxication has relevance for diagnostic and treatment purposes for adolescents. A better understanding of substance use in adolescents is important to inform optimal prevention and treatment strategies. Early research on animal models regarding the impact on maturing animals is only now being done (Levin, Rezvani, Montoya, Rose, & Swartzwelder, 2003).

Substance use measurement. While there is agreement concerning the use and abuse of substances in adolescence and young adulthood, there is little agreement about the measurement of substance use. Despite widespread and acknowledged use, problems in the measurement of substance use in both adolescents and young adults exist in virtually all setting and circumstances. Differences in theoretical perspectives lead to measurement variations.

Self-report is the measure that is most frequently used. McClellan & Templin (2004) tested the veracity of self-report against urinalysis and found that even though the

self-report asked for report of usage in the previous six months and last year, and urinalysis tested for the presence of a substance over the past two to three days, it was determined that with marijuana, the tests were over 84 percent in concurrence. There was one chance in 10 that a user would be overlooked if self-report was the only measure. With illicit drugs such as cocaine, the reliability was much lower, with approximately one in four being overlooked, thus leading to a missed referral for intervention or treatment. Other problems with self-reports include the conscious intentional honesty of answers, and the unintentional error of reporting from impaired recall due to drug use or factors impairing memory.

Another approach to measurement relied upon self-report of frequency of occurrence of substance use within a specified period of time. Frequency measures included the prior 30 day, 6 month or 12 month period. In contrast, another study (K. M. P. G.-L. Harris, Penny PhD; Chantala, Kim MS; Udry, Richard PhD., 2006) changes were measured over time for individual substances using repeated measure. The degree of impairment is also used as a basis for determining substance use and abuse (American Psychiatric Association 2000). When applied to adolescents, however, the only diagnostic description available is intoxication, because defining characteristics have a requisite time period not applicable to adolescents. This definitive text now in revision, will attempt to quantify various mental health states, including substance use, but it is

unknown how these new definitions will impact the area of substance use in adolescence and young adulthood.

The nature of the substance itself is a problem. Though certain bioassays have been developed using urine, hair or other body substance, none have been developed that do not reveal false positives related to other chemical changes that may be occurring in the body. In addition, most bioassays only detect the presence of the drugs used over the previous two to three days and are substance specific. There is no measurement of either dosage or amount of most drugs, only the presence or absence of related metabolites. There are also no markers for frequency or previous use, or for length of usage. Nor is there a way to measure for the dose tolerance of the individual, other than self-report or behavioral observation by a trained observer.

An operational definition of gateway hypothesis that includes partial gateway and complete gateway relations was proposed by Maldonado-Molina (Maldonado-Molina, 2005). In the model, an operational definition is based upon the probability of having tried a substance or a particular combination of substances. A study of 1664 participants, 58.8 percent of which were male and using data from The National Longitudinal Study of Adolescent Health examined measures of lifetime use of alcohol, cigarettes, drunkenness, marijuana, and cocaine using an 11 stage model. Answer options were *never used* or *used once or more*. Data was examined for partial or complete gateway. Conditional probabilities were estimated using latent transition analysis to estimate stage

sequential models describing substance use. Results indicated a complete gateway relationship between marijuana and cocaine, because no one initiated cocaine without trying marijuana first. A partial gateway was found between cigarettes and marijuana, because the probability of using marijuana at time two, conditional on using cigarettes at time one, was greater than the probability of using marijuana at time 2, conditional on not having tried cigarettes at time one. Findings indicated no gateway relation between alcohol and cigarettes.

In one study, 70 methadone maintenance treatment patients at a Midwestern substance use treatment facility were asked to rate their affective experiences and indicate recent drug use in a paper and pencil test. The research focused on determining premorbid physical and mental functioning, and the consequence of substance use.

Youth and substance use. Attitudes, behaviors, and contextual risk factors have been shown to increase the likelihood or frequency of youth substance use. Other factors include deviant peers, parental role modeling of substance use, easy access to drugs and alcohol, family culture and history, and absence of supervision and monitoring. Studies using the data from The National Longitudinal Study of Adolescent Health looking at substance use and related health and social consequences may add to understanding (K. M. P. G.-L. Harris, Penny PhD; Chantala, Kim MS; Udry, Richard PhD., 2006; Johnston et al., 2008; Udry, 2003).

Recent studies in neurobiology indicate that the developing adolescent brain may be particularly vulnerable to the effects of substance use. Studies show previously unrecognized long term effects due to the plasticity and resultant vulnerability of the developing adolescent brain. In a study where excessive drinking and intoxication was associated with automobile accidents 22.1% of high school seniors drove after drinking and 32.8% rode with a driver who had been drinking (Grunbaum et al., 2002). The alcohol involved fatality rate was twice as high among adolescent than adult drivers (National Institute on Alcohol Abuse and Alcoholism, 2003).

Attitudes, behaviors and the contextual factors that encourage substance use have been shown to change over time from one cohort to another. These include prevalence of specific substance usage, perceptions of perceived risk of harm, disapproval of others who use substances, and perceived accessibility.

Monitoring the Future is a long term study of American adolescents, college students and adults though age 45 done annually to generate data about smoking, drinking and illicit drug use, and the effectiveness of policy and intervention efforts. In the most recent Monitoring the Future study in 2007, University of Michigan staff members administered questionnaires in class to 16,500 8th graders, 16,400 10th graders and 15,100 12th graders in 403 nationwide secondary schools inquiring about their lifetime, annual, 30 day and, for some specific drugs, daily frequency of use. A standard set of three questions used to evaluate usage levels for individual drugs. Students were

asked “on how many occasions (if any) have you used marijuana...(a)...in your lifetime? (b)...during the past 12 months? (c)...during the last 30 days?” Each of the three questions was answered on the same scale: 0,1-2, 3-5, 6-9,10-19, 20-39 and 40 or more occasions. For the psychotherapeutic drugs, students were instructed to include “on your own without a doctor telling you to take them”. A similar question was used regarding anabolic steroids. In the same study, alcohol was measured using the same questions as used for marijuana. A second set of questions was asked about the frequency of being drunk. A separate question asked “how many times have you had five drinks or more in a row for the prior two weeks period”. After reaching peak use in the early 1970’s, a decline was shown in the use of most substances (Johnston et al., 2008). The authors assert that this is the result of a repeating cycle. When there are social marketing campaigns regarding the negative health effects of substance use, and opportunities to be personal witness to the negative results of drug usage, the subsequent generation matures with a greater reluctance to engage in drug usage. With diminished usage, the warning messages decrease as do the personal experience with negative consequences. Once again, substance use takes on an attractiveness arising out of novelty and unfamiliarity. Combined with a lack of exposure to the consequences, the result is a higher prevalence of usage. In summary, the greater the distance from the hazardous warnings and direct effects in others, the more attractive substance use has the potential to become.

Harris, Gordon–Larsen, Chantala, and Udry (2006) studied disparities in leading health indicators from adolescence and young adulthood also using the school based The National Longitudinal Study of Adolescent Health. Because both Monitoring the Future (Johnston et al., 2008) and The National Longitudinal Study of Adolescent Health (Udry, 2003) focused on adolescents in a school based setting, they failed to capture the behavior and attitudes of youth who are not in school, a group which could be significantly more at risk.

Unaddressed concerns. Outside of animal models, limited research to date has been conducted on the long term physiological consequences of substance use during adolescence (Levin et al., 2003). Most studies look at consequences for adults and not the physical, psychological or social consequences for adolescents (Anthony, Warner, & Kessler, 1994; Herting, Eggert, & Thompson, 1996; Kessler et al., 2001). The inadequacies of the current theories ability to explain the cause or development of substance use hampers measurement and the development of effective prevention and intervention efforts.

Serious and Violent Delinquency This subset examines issues of violence and delinquent behaviors and the subsequent relationship to criminal justice system involvement in the United States. Focusing on a concept of such breadth does not adequately serve to enable close examination of its relationship to specific variables. Prevalence, incidence, and cultural acceptance of violence vary radically throughout the

world. Additionally, relevant international criminal justice systems, their jurisdictions, cultural sensibilities, and legal systems make worldwide comparisons almost impossible at the present time. For purposes of this study, interpersonal violence within the boundaries of the United States is included as part of the focus of inquiry because of its relevance to the outcome of criminal justice system involvement. Self-directed violence, including suicide and all forms of self-injury, however, is excluded.

Relevant interpersonal violence research is examined for its impact on the well being and quality of life for individuals, families, and communities. Variations in attitudes and values toward violence, as well its function in managing conflict and maintaining social order, is explored in relationship to geographic and cultural perspectives. The prevalence and effects of violence are examined for the role of age, gender, ethnicity, family history, and relationship to substance use, along with associated comorbidities. Contextual factors are also discussed including parental relationships, access to weapons and supervision that have been shown to influence the nature, type, degree, and relationship to violence of perpetrator, victim, or witness. Lastly, the measurement of violence, violent behavior and delinquent behaviors and outcomes is explored for individual, family, and public health perspective.

Incidence and prevalence. An estimated 50,000 people die every year as a result of violence related injuries. Homicide ranks second in the cause of death of African American men 15 – 24 and has once more been on the increase after a period of decline

(Karch et al., 2009). Between 1979 and 1991 almost 40,000 adolescents age 15 to 19 died from firearms, 62% of which were homicides, with 33% suicides, and 3% unintentional injuries.

The elimination of violence involving youth is a major world health problem. This is echoed in the United States where Healthy People 2020 has designated the reduction of youth violence and intentional injuries, including self-directed violence, as a major health goal. Pertinent health measures have been placed to determine the change in outcomes.

Adolescents commit more acts of violent crimes than do any other age group. Homicide occurred with higher frequency among persons 20-24 years of age with the very highest rates being found among non-Hispanic black males. The majority of these homicides involved the use of a firearm and occurred in a house or apartment, or on a street or highway. Homicide was more likely to be precipitated by arguments and interpersonal conflicts, but also occurred in conjunction with another crime.

Delinquent behavior, its definition and relationship to violence and is examined to establish a definition that describes the behavior, causes, outcomes, legal consequences. Social values and the relationship of societal and cultural differences in acceptance of violence and its tacit role in conflict management is also discussed. Delinquent behavior has been shown to impact the length and quality of life for individuals, families, and communities. The incidence, prevalence, and severity of delinquent behavior using

disparate definitions is examined in relationship to gender, ethnicity, age, familial history of imprisonment, and gang involvement.

Defining delinquency. Definitions of delinquent behavior and behaviors is inconsistent across the literature. The circumstances and outcome of the behavior influence the definition and its application. Legal definitions vary with jurisdiction. Delinquent behavior has been linked to deviant behaviors but also referenced as “pranks,” “mischief,” “up to no good,” practical joke, caper, stunt, “off on a lark,” naughty, “monkey business,” and “shenanigans”. Use of these terms has suggested a mischievous, but relatively harmless involvement or participation considered outside the acceptable legal or social rules of behavior. Although they sometimes involved individuals, they are often referred to as “property crimes,” with real or threatened damage to or actual destruction of property, but not physical assault or threats on a person. Status offenses are crimes in which the involved participant is considered a violator because of age. Truancy and curfew violations are examples. Morals violations and legal misdemeanor violations also fall within this category.

The term delinquency is often used to connote age and often used interchangeably with the term juvenile delinquency, and limited to reference to minors. The term is also used to describe a category of behavior that, although commonly associated with youth, is frequently applied to adults. Delinquent behavior has also been associated with a lesser crimes scores offenses could be compared (Rainone et al., 2006). Environmental context,

including feelings of safety in the school environment and in transit to and from school have also been correlated.

Involvement in a named gang has been shown to increase the likelihood of participation in delinquent behavior.

Surveillance and measurement. The National Violent Death Reporting System (NVDRS), an active surveillance system instituted in 2002, which collected and analyzed risk data from all violence related deaths, is a major source of violence related data. It is incidence based with all decedents (both victims and alleged perpetrators) combined in one record (variances and changes in reporting even within studies, year to year, affect comparability). This program is currently active in a number of states, though not all (Karch et al., 2009). NVDRS uses complementary data sources including death certificates, coroner/medical examiner records, and law enforcement reports. Secondary sources used by some states include child fatality review team data, supplementary homicide reports, hospital data, crime laboratory data, and Bureau of Alcohol, Tobacco, Firearms, and Explosives information regarding firearms.

In 2006, data was collected from the CDC's National Violence Reporting System (NVDRS) from 16 states. Even though 17 states were enrolled in this data collection program, data from California was not included because it has been implemented in only a few cities and counties rather than statewide (Karch et al., 2009).

NVDRS defines a violent death as a death resulting from the intentional use of physical force or power against oneself, another person or a group or community. NVDRS collects data on 250 unique variables. The data included homicides, suicides, unintentional firearm injuries, legal intervention deaths (caused by those authorized to use deadly force, excluding executions) and deaths by undetermined intent. Variables analyzed included manner of death (as measured by intent of the person inflicting the violence), *mechanism of injury* (method used), *precipitating events* that led to the infliction of violence, status of the decedent as a victim or suspect or both, the nature of the incident (as measured by whether one or more people sustained a fatal injury that was connected to a common event in a 24 hour period, type of incident (a combination of the type of incident and the number of victims (Karch et al., 2009).

The NVDRS reported four changes between 2005 and 2006 that had an impact on their comparability. In 2005 the race variable was categorized into six categories (White, Black, Asian Pacific Islander (API), AI/AN, other and unknown). Ethnicity was categorized separately, as persons of any race that reported Hispanic origin. This allowed Hispanics to be counted twice. When the 2006 methodology was implemented race and ethnicity were combined into one variable. Each person was classified as non-Hispanic white, non-Hispanic black, API, AI/AN, Hispanic, other and unknown. This improved comparability. Other significant change included the addition of a new category identifying the relationship of the victim to the suspect. The term “other intimate partner

involvement” was used to refer to a death that is intimate partner related, but did not occur between the intimate partners themselves (such as when a child is killed by a parent’s partner). Additionally, “rival gang member” and “victim injured by law enforcement” were relationships isolated from a category in 2005, which previously referred to as “other unspecified relationship.” Similarly, the terms foster child and foster parent were subsumed under parent and child from the “other relative” category used in 2005. (Karch et al., 2009).

A report of fatal violent injuries for 16 participating states was received by the CDC on July 31, 2008 (Karch et al., 2009). 15,007 incidents resulting in 15,396 violent deaths occurred in the 16 NVDRS states. Of those deaths 55.9% were reported to be suicides. Homicides and deaths involving legal intervention (such as suspect killed by a police office during the line of duty) amounted to 28.2%. Violent deaths where the intent was undetermined amounted to 15.1% and unintentional firearm deaths was at 0.7%. Data was collected on 4,138 homicide incidents and 4,335 homicides in 2006. The homicide rate for males was 3.8 times that for females (8.8 and 2.3 deaths per 100,000 populations). Non-Hispanic blacks accounted for the majority with 52.8 % of the homicide deaths, and had the highest rate at 18.9 deaths per 100,000. Results from the NVDRS indicate that adults aged 20-54 years old were more likely to be affected by violent deaths resulting from self-inflicted or interpersonal violence. Males from minority populations were impacted disproportionately.

Gang involvement was measured using a single question in a 2006 study (Rainone et al., 2006) which asked middle and high school students to respond with one of three answers to the following questions: a) I am not in a gang AND I don't have friends who are in gangs; b) I am not in a gang BUT I have friends or know people who are in gangs; c) I am in a gang.

The subjective perception of feeling safe as a measure of feeling perceived threat, was assessed by asking the participant to respond to the question of whether or not they felt unsafe going to and from school. They were given the choices of very safe, somewhat safe, somewhat unsafe, and very unsafe and were scored from 1-4. Unsafe responses were given the higher scores. Similarly, students were asked to score how safe they felt in school using the same scale. Higher scores were given to feeling unsafe in school scale.

Unaddressed concerns. An inconsistency in amount and type of data across states makes comparisons difficult. (Bullying and intimidation as well as under reported sexual assault data underreported or unavailable.)

A unified definition of aspects of violence and its antecedents is needed. There are no universal definitions surrounding the concept of violence. This makes a unified approach to data collection and identification of antecedents difficult. This void makes comparisons through accurate comparable measurement difficult, and valid research results hard to obtain. There is insufficient agreement on the concept, creating barriers to

consensus on terminology. Legal definitions that vary by jurisdiction contribute to the complexity and confusion. There is an absence of data regarding one of the most significant groups available: Adolescent and emerging adult males.

Critical interpretation The potential validity and reliability of measurement vary considerably depending upon the definition. Contact with the criminal justice system influences the perceived seriousness of the offense, thus creating a myriad of consequences. However it enables a level of measurement that would be unavailable otherwise. Many delinquent acts are believed to go unreported for many reasons. Fear of retribution or community sanctions on the victim or his associates, a sense of powerlessness and futility with authorities and community policing, diminished sense of seriousness in the face of other community or personal problems, and perception of relative mechanisms available for retribution are common reasons given. Ineffective communication systems between victims and policing agencies are also named. Thus, only the most persevering and possibly more serious violent episodes find their way to reporting agencies. The rest are lost to statistics.

Relying on self- report by alleged offenders or victims becomes the next most reliable method. Self-reports have been shown to correlate with measures of accuracy with official reports. Self-reports have been collected using written questionnaires, face-to-face interviewing, and computer assisted interviewing. The use of technology to facilitate the interview process has been shown to increase the accuracy of the

information, presumably because of perceived increase in confidentiality. Self-reports can provide valuable descriptive information about the extent and nature of delinquent behavior, qualitative data about motivation, selection of targets and perceived rewards. Again, inconsistency across agencies and states makes comparisons difficult.

Mother-Son Connectedness The following literature looks at the contextual factors contributing to the parent-child relationships in childhood, adolescence, and young adulthood. Using the Resilience Theory, derived from attachment theory as a framework, the relationship between the adolescent male and his mother is explored for the concept of connectedness and its influence on attitudes and behavior during adolescence and into adulthood. Contextual factors examine the concept of protective factors and their function as moderators for risk behaviors and influence on the development of negative consequences.

Family and parent-child relationships. The importance of the parent-child relationship on child development has been a subject of considerable study. Many theorists have postulated the nature of this relationship and have attempted to describe it. The intangible socio-emotional bond between a child and his mother, has been identified and described using the concept of attachment (Bowlby, 1969). The influence of attachment has been the subject of considerable study and refers to those close social relationships during infancy and early childhood that have been theorized to confer long-lasting, even lifetime, influence on psychological wellbeing and behavior. The

attachment paradigm has been widely adopted as a construct for both study and the planning of interventions for individuals and families with the belief that it supports positive development.

Attachment theory also poses that interference with the attachment process sets the stage for impaired psychological well being including the development of self destructive or disturbing behavior later in life. Interest in the cause and development of attitudes that affect behavior increased interest in family dyads in particular, however, emphasis on the mother-child relationship has been the primary focus. Efforts to characterize the essence of attachment within the mother child relationship and reveal it through measurement has had varying success.

Research directed at contemporary concerns has focused on theory testing, knowledge acquisition, and problem solving at the individual, family, and community and policy level. Physical and intellectual development of infants and children, such as health, temperament, achievement, motor skills, language acquisition, and risk taking behavior has been of interest. Performance related behavior, such as school or athletic achievement, has been of frequent interest. More recently, research interest has been directed to risk behaviors such as substance use, intentional and non-intentional injuries, and problem behaviors such as delinquent behavior, violence, unhealthy weight related issues, mental and emotional disorders including suicide, depression and other types of mental illness (Ackard, Neumark-Sztainer, Story, & Perry, 2006).

The parent-child relationship has been defined and analyzed using different dimensions. During all ages of childhood, parents have been expected to perform a significant role in providing for the nurturance, safety, and security of the young. Parents contribute to the child's worldview through the interpretation of the world at large. Others identified the antecedents of parent child relationship through the following: biology, shared physical space, relationship over time, shared personal history, physical appearance, personality traits, shared emotional warmth, instrumental physical care, shared interest areas, emotional care and concern, provision of emotional support, financial support, dutiful monitoring, supervision and advocacy. A sense of being cared for and or cared about is central to the concept of connectedness.

Parenting styles have been studied through examination of parental attitudes and approaches to discipline. Attitudes have varied regarding the duration of parental influence and relationship effect, particularly in the United States. Some research studies describe parental influence gradually diminishing with maturity. The child has been described as naturally disengaging from parents as peer relationships strengthen. Recent research challenges the assumption of diminishing influence and suggests that parents have a stronger more potent influence on attitudes and behaviors of their children, particularly adolescents, for a longer time than previously believed (Resnick et al., 1997).

Several areas of research have shown the strength and value of maternal influence on the lives of adolescent and young adult children. Grantham (2005)

investigated the decision to initiate sexual activity in adolescence was measured in conjunction with mother-son connectedness. Other studies showed that mothers continued to play important instrumental and influencing roles beyond childhood. Another study which evaluated the factors which influence military enlistment and reenlistment indicated the second most important influence in the decision to reenlist in the military was the mother's influence. In response the military redirected marketing efforts toward changing the attitudes of American mothers about the positive benefits of a career in the military in an effort to increase support for military reenlistment. Mothers were also shown to be the most likely primary caregiver of young adults with traumatic brain injury and mental illness over spouses or peers (Wongvatunyu & Porter, 2005).

Parent-child connectedness has been shown to clearly matter in improving teens' success with coping with the challenges of maturing (Lezin, Roller, Bean, & Taylor, 2004). It has been shown to act as an important protective factor concerning a number of adolescent health outcomes. These include prevention of adolescent pregnancy, as well as acquisition, and transmission of sexually transmitted diseases including HIV (Resnick et al., 1997). Of recent interest are both the length and strength of parental relationship or influence on specific behavior of adolescents and young adults such as sexual behavior and substance use.

Connectedness. The concept of connectedness has been described as a concept which involving a perception of emotional warmth, social presence, and reciprocal caring

and attachment between a pair. Mutuality between the parent and the child forms the basis for the perception of connectedness in the relationship. This involves reciprocal feelings of affection and attachment, a desire to be understood, and finding enjoyment in sharing time and activities together. With an aim of redirecting negative behavior in a positive direction, research of late has examined connectedness and behaviors which have shown negative and destructive outcomes.

The mother-son dyad as a subset of the parent child relationship is unique. Women/mothers may play a more significant role in the life of many males for an increasingly longer period. The majority of gender related research in studies of adolescents and young adults appears to involve same-sex rather than cross gender relationships. Recent research has taken the perspective of parenting as a gender-neutral role. Public discourse regarding the disappearance of the heterosexual two-parent family coupled with changing parental roles has fueled this discussion. The emphasis on parenthood as a gender neutral role and set of behaviors has deemphasized the unique contribution of a gendered personal identity. Research looking at gender differences in parent-child relationships and the subsequent impact on development has shown renewed interest. This proposed study will add to the discourse.

Parental gender differentiation in research is not always evident without deeper examination. The National Longitudinal Adolescent Health Study (Add Health) is an example (Boonstra, 2001). Although methods and procedures may describe a “parent

interview” in general terms, on close examination of the instructions to interviewers, the clear directive to target the mother as respondent is sometimes evident, even going so far as to direct the interviewer to reschedule the interview if the mother was unavailable and only the “father” was available (Udry, 2003).

To advance research that is gender specific and elucidate the nuanced parental behaviors affected by gender interpretation of role, a unifying and clear definition of “mother” is necessary. Biological, social, and economic changes over decades have made defining “mother” increasingly difficult. Mother and the mothering role have been interpreted and defined differently and includes characteristics which are biological residential, and temporal in nature, and involve bonds of affection, kinship, provision of economic support, supervision, monitoring, and advocacy (Robinson, 2007). A “mother” need not even be female, but may be performing in the mothering role (Udry, 2003).

Gilmore (2004) uses the term mother broadly to include anyone who cares deeply for another, shows responsibility and concern for someone in a protective way, and acts as an advocate. In a study of grass roots advocacy conducted by Gilmore (2007), mother was defined liberally in promotional material, even though the primary leadership for the group under study came from a woman who was, in fact, an aunt to a young boy that was the focus of her concern. In contrast, Robinson (2007) defined the term mother much more narrowly. In her study of mothers with successful sons in poorly performing schools, only biological mothers were included. Additionally, the mothers must have

been divorced, separated, or single and the primary caregiver for their sons. Because the focus was on the central parent in the son's life, stepmothers, grandmothers, and foster mothers were excluded.

The extensive data collection done in Add Health enabled multiple definitions and collapsing of categories according to many characteristics, including current and previous biological mother, residential mother, stepmother and others. Because a broad definition was used, data collection allowed for relationship discernment and specificity.

The influence of mothers on the behavior of their adolescent and young adult sons has had limited study. Chipman et al (2000) examined retrospective perceptions of parenting in 65 male and 63 female inmates in correctional facilities in Utah, to determine if there were differences in parenting styles. Gender of either the parent or the child was specifically factored in. The author found significant interactions between use of authoritarian and permissive styles of parenting with sons and daughters depending on the gender of the parent. Chipman's (2000) major purpose was to examine the perceptions of adult offenders about the parenting they received in their family of origin. It also looked at gender differences in parenting and the type of parenting the inmates perceived that they received. This study found a lower amount of authoritarian parenting style reported in inmate's sons than in inmate daughters, in direct contrast to current literature, which suggests that sons are more likely to receive authoritarian parenting. Their findings show non-inmate households sons are more likely to receive authoritarian

treatment. This implies that inmate sons are more likely to receive different parenting than non-inmate sons.

Connectedness and influence. A case study analysis of organizational development was used to look at Mothers Reclaiming Our Children (ROC), a Los Angeles based grassroots organization focused on the actions and advocacy of an organization of mothers and others whose children of all ages had been arrested and incarcerated (Gilmore, 2004). In contrast, Robinson (2007) used a qualitative case study design and purposeful sampling to gain a deeper understanding of the nature of the relationship that Black women shared with their academically successful sons. Five mother son dyads were included in the study and included both individual interviews and focus groups as methods of data gathering. Mothers Reclaiming Our Children (ROC), uses the concepts of social or collective mothering as they fight against police abuse, false arrests, and unfair treatment throughout the criminal justice system. They educated themselves and their children about the workings of the system, and pragmatically endeavored to reclaim their children from the streets. Evidence of the power they brought to bear included negotiating the LA Gang Truce among rival inner city gang factions so that a peaceful funeral could occur (Gilmore, 2004).

The quality of relationship between parents and adolescent children, most particularly mothers and sons, was measured through the lens of acculturation among Korean Americans (Kim, Cain, & McCubbin, 2006). This study examined family data

obtained from mothers, fathers, and young adolescents in the families of 102 adolescents to see if there was a relationship to adolescent reports of parental rejection and behavioral controls to the psychological adjustment of the adolescents. Acculturation was examined for its effects as a moderator.

The Parental Acceptance-Rejection/Control Questionnaire (Rohner, 1991) is a 73-item, four-point Likert-scale instrument, using two subscales measures parental acceptance- parental rejection (PARQ, sum scores of low warmth, hostility, indifference, and undifferentiated rejection), and other measures of parental behavioral control. The sample versions form of the adolescent version of the questionnaire included some of the following: "my mother/father says nice things about me/I say nice things about my child (warmth); my mother/father is irritable with me/I am irritable with my child (hostility);" "my mother/father forgets events that I think she should remember (indifference);" "I wonder if my mother/father really loves me/ wonder if I really love my child (undifferentiated rejection);" and "my mother /father tells me exactly what time to be home when I go out/I tell my child exactly what time to be home when he/she goes out." Among the 73 items, 42 were written in the direction of perceived rejection and more behavioral control, whereas 31 items were written in the direction of perceived acceptance and permissiveness in order to minimize potential acquiescence response bias. The later 31 questions were reverse scored before summing them to create overall perceived PARQ and behavioral scores.

Robinson (2007) looked at “successful” rather than “unsuccessful” sons of impoverished black mothers who were in poorly performing schools to examine the ways in which mothers influence the educational success of their sons. Robinson provided an opportunity for both the mother and the son to tell their stories. After receiving informed consent from both mothers and sons, individual interviews were conducted, with the mother first, then with the son on the same day to avoid intervening discussion. Questions were refined from the initial list of 50 interview questions informed by the literature surrounding Black males with 12 additional questions for the son. Robinson constructed the initial questions, then input was gathered from three Black mothers to assist in revising the final questionnaire. The author believed that designing questions for the mother and the son allowed the ability to cross-reference and validate the data and identify discrepancies. (Robinson, 2007).

The continuing influence of the maternal relationship beyond childhood was shown in a study of youth influences on military recruiting (Board of Behavioral Cognitive and Sensory Science and Education, 2002. Volitional consultation with parents for advice, guidance, support or confirmation appeared to be occurring. {about military enlistment and reenlistment This study showed that young adults did not seek out the advice and guidance and approval of parents, particularly mothers, because they had to but because they wanted to {, 2002 #181). Furthermore, it was determined that the

mothers' attitudes were a significant deterrent to the reenlistment of young men ages 18 – 25.

Unaddressed concerns. At what age in development does the parent-child relationship cease to be a mediating factor in behavior of the child? Although conventional wisdom asserts a diminishing parental influence, there has been little research supporting this process or trajectory. The mother-son relationship has been minimally explored in adolescence and young adulthood. How long into adulthood does this relationship remain influential?

For instance, intergenerational studies have examined situations where grandparents substituted for parents and functioned as caregivers for grandchildren in the absence of the parents. Other intergenerational research looks at the adult child as caregiver for elderly parents. There has been no systematic investigation into the quality of connectedness within the mother-son dyad during adolescence or during emerging adulthood. Of particular interest, there has been little research on how connectedness influences the outcomes of violence behavior, delinquent behaviors, or involvement in the criminal justice system. Research to date that looks at the relationships and influence of parents on youth as they mature is lacking, and exists with emerging adults in very limited sphere.

There is increasing awareness and interest in the potency and strength of parental influence and the specific domains in which parental influence may have an effect. What

specific behavioral and/or outcome variables modify parental opinion or relationship and for how long? The question is at what age does the parent child relationship cease to influence the behavior of the child? The proposed study seeks to add to understanding in this area.

If the parent child relationship continues to influence health related behavior at later stages of development, research on how this influence can optimize health is needed. Enhanced understanding of potentially destructive influences is also of interest. What areas are sensitive to the strengths and weaknesses of the parent-child relationship at different developmental stages? Gender specific research that examines the mother-son relationship and its influences is even more limited. Increased knowledge about how to support those beneficial relationships where improved health outcomes are possible. Moreover, how to harness and redirect those same processes to avert negative outcomes may be of even greater importance.

Measurement of the parent-child bonds, attachment, and connectedness has been attempted in numerous studies. For reasons of economy and convenience, most efforts have looked at either the parent or the child, but not both, with the most commonly obtained perspective being that of the child. Thus, there is little knowledge of the process parents use to assess and evaluate connection to their children. Because self-reports are the most frequently used measure, some studies indicate the parents' perspective of the relationship between parent and child is consistently positive, while the child's is

consistently negative. Knowledge regarding the degree of concordance or discordance within the relationship is unavailable. Enhanced appreciation of this phenomenon would facilitate educational opportunities. It has been argued that the social desirability of certain outcomes of adult behavior are inclined to skew insights and, therefore, the results of the information provided by the parent. Therefore, the perspective of the child should be considered of greater validity. This theory is worthy of further testing.

Critical interpretation. Although emotional distancing has been viewed as the natural course of events, close ties between mothers and sons often continues to flourish into adulthood. Mothers often continue to play an important role with their sons in adulthood albeit with cultural variations in expectations, norms, social, and instrumental support. In the United States where individualistic behavior, rather than behavior benefitting the collective has been valued, this culturally mandated separation may have caused mothers and sons to suffer. Sons suffer because of the loss of instrumental help, pragmatic problem solving guidance, and assistance meeting the challenges of daily living. This is evidenced by diminished sense of social acceptability for familial support in the advent of financial, physical, psychological, or emotional burdens. It also means loss of assistance in developing relational skills, such as coping with feelings and personal relationships. With later age of marrying, increased military enlistment, and high rates of divorce and incarceration, mothers have continued as the primary female caretaker for many young men well into adulthood. High rates of single parent

households and shared child custody arrangements, and mothers in their role as grandmothers, are often the primary coach and support of their sons who must navigate the challenges of being a single parent.

Efforts to measure the quality of relationship between parents and children, and specifically mothers and sons, have been inconsistently applied. For example, the differences between perceived parental rejection and connectedness appear to be measured in terms of behavior rather than emotionality.

It is widely acknowledged that discrepancies often exist regarding the quality of the relationship between mothers–son, and are dependent upon whom you ask. Some authors assert the perspective of the adolescent as having greater validity, giving reasons such as the social desirability of parental roles governing self-perception on the part of the parent, and therefore cloud self-insight into actual attitudes and behaviors. Others assert that the immaturity and absence of insight on the part of the adolescent impugns the veracity of the adolescent opinion and perspective, making inferences problematic. Rational reasons are often given for a research design that focuses on data collection from a single member of a dyad, albeit the parent or the adolescent. Indications point to the physical and economic barriers in accessing data from potential responders on both sides as the most common barrier.

Few research environments offer equal ease of access to both the parent and the adolescent or emerging adult because of the generally independent and separate patterns

of daily life. Emerging adults commonly may reside in separate households, although they may be in frequent or close communication. Data collected in separate circumstances may have interceding variables that make direct comparisons difficult, thereby invalidating discrepancies that may be found within the dyadic relationship.

Increased ability to control the variables involved could make improved comparisons possible. Previously relied upon methods of communication such as face-to-face interviews require highly structured physical access to participants to control data collection process. Contemporary communication, however, relies less on physical presence than on web-based communication like social networking sites and electronic communication methods such as email, cell phone, teleconferencing, and text messaging. Increased use of these mediums may significantly contribute to the ease of ongoing communication and data collection in the future. Greater utilization of electronic and technology may facilitate future research that offers a more balanced view at a lower cost. Although some researchers have focused on the negative aspects of the mother son relationship, specifically in relationship to the letting go process in adulthood, Robinson (2007) reiterated the need to focus research on the positive aspects of what is going right by increasing the study of positive outcomes, even sometimes changing the expected of outcomes. When attempting to measure an intangible such as the quality of the relationship, evaluating the perceptions of all involved participants presents the optimum

opportunity for gaining an understanding of the deeper subtleties, especially where discrepancies exist.

Summary Evidence from a wide range of scientific disciplines and governmental sources examined the prevalence and the impact of criminal justice system involvement on young men moving from adolescence into adulthood and on those that are concerned or related to them through care or kinship. It showed the large numbers of men, women, and children who are affected within the United States. Disparities were discussed pertaining to gender, ethnicity, age and, to a lesser extent, socioeconomic status, and personal and familial history. Criminal justice system involvement was shown to be significantly higher in men than women, in Blacks and Hispanics, and in youth and young adults.

Not only are there more people going to jail and prison today, jail and prison sentences tend to be longer than 10 years ago. The problems of recidivism and disenfranchisement of such a large group is of grave concern, bringing new concern for the problems of reentry. This review examined health issues brought to light in what has been characterized as a healthy population because of age. Specific attention to health problems including stress, serious mental illness, infectious disease, intentional and unintentional injury, traumatic brain injury, chronic illnesses and issues related to aging and end of life, and the criminal justice system environment were discussed. Risk factors of substance use, violence, and delinquent behaviors were explored for their effect as

moderators of criminal justice system involvement. This review concluded with an examination of the mother-son relationship, focusing on mother-son connectedness during adolescence and its influence throughout the lifespan. This proposed study seeks to look at the interplay of factors of mother-son connectedness in adolescence and criminal justice system involvement in emerging adulthood. Substance use, violence, and delinquent behavior will be examined for their role as moderators.

This study will advance research in several important ways: 1) This study seeks to go beyond the gender-neutral definitions of parent, and child, and parent-child connectedness to the intangible and nuanced gender-specific characteristics comprising the personalities and roles of mother and son; 2) It uses a large national longitudinal database to measure the construct of mother-son connectedness from the perception of both mother and son; 3) It explores the cross-gender relationship of mother and son during adolescence, a relationship that has been minimally studied in relationship to behavior; and 4) It examines the quality of the mother-son relationship during adolescence, and its relationship with criminal justice system involvement in emerging adulthood. Because the proposed data source is a large ongoing longitudinal national study with data points available at multiple points in the life cycle, there is opportunity for continuing research on the mother-son relationship later in life.

Chapter III

Methods

The purpose of this study was to examine the relationships between mother-son connectedness, substance use, serious delinquency, violent delinquency, and criminal justice system involvement in young men. Relevant predictor variables examined included mother's perception of mother-son connectedness, son's perception of mother-son connectedness, substance use, serious delinquency, and violent delinquency. Demographic variables assessed included gender, age, ethnicity, race, and criminal justice system involvement. Resilience Theory and the concept of protective factors provided the guiding theoretical framework.

Design In this chapter the research design, sample and sample characteristics, procedures for data collection, research questions, measurement and data analysis techniques presented. The protection of human subjects is also discussed. Design A descriptive, correlational design using secondary data analysis was used for this study. Concerns and limitations involved with secondary analysis include the inability to obtain or extract data other than what has already been

collected and living with the ambiguity of having unanswered questions about the quality of the data. The problem of missing data must be reconciled.

The data for this study originally came from The National Longitudinal Study of Adolescent Health (ADD Health), a program project directed by Kathleen Mullan Harris and designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill, and funded by grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperation from 23 other federal agencies and foundations. Special acknowledgement is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Information on how to obtain the Add Health data files is available on the ADD Health website <http://www.cpc.unc.edu/addhealth>). No direct support was received from grant P01-HD31921 for this analysis.

The ADD Health study. ADD Health is a school-based study that began in 1994 to study health related behaviors of adolescents in grades 7-12 and their outcomes in young adulthood. Based on Resilience Theory, it was designed to explore the causes of these behaviors, particularly those involving health risks, and to identify predictors and protective factors. Data collection had an emphasis on the influence of social context including families, social networks, dyadic relationships, schools, neighborhoods and communities, as well as biophysical factors. A total of 132 schools throughout the United States participated. Systematic sampling methods and implicit stratification were

incorporated to insure the sample was representative with respect to region of country, urbanicity, school size, school type, and ethnicity. Ninety thousand one hundred and eighteen adolescents completed questionnaires, each self administered and taking 45-60 minutes. Following administration, the surveys were optically scanned. A subset of eligible students was selected for the in-home sample. It was not limited to those who had completed the questionnaire, but required only the adolescent's name on the school enrollment roster. In addition to demographic information, survey questions solicited information on height, weight, depression, self-rating of health, use of health services, hospitalizations, days lost because of illness, emergency room visits, injuries, and disabilities. ADD Health also asked about substance use (alcohol, tobacco, and illicit drugs), violence, prevention of HIV and other sexually transmitted disease, sexual behavior, contraceptive use, dietary habits, exercise, seatbelts, helmet use, and sun exposure.

Wave I encompassed all data from 4 instruments collected between September 1994 and December 1995. Wave II used two instruments and was conducted from April 1996 to August 1996. Wave III used several sources, including in-home interviews, and was conducted August 2001 through April 2002 when Wave III respondents were between 18-26 years old. Wave IV data was collected between January 2008 and February 2009.

Twenty thousand seven hundred and forty-five in-home interviews were completed in Wave I, and 14,738 in-home interviews were completed in Wave II. The mother (or other female head of household) of the originally sampled adolescent was asked to participate in a 40 minute interviewer administered, paper and pencil survey regarding health status and behaviors of the adolescent, home environment, and her own interpersonal relationships. The adolescent's mother (or other female head of household perceived by the son as being in that role) was the preferred respondent to complete the questionnaire because, according to the results of previous studies, mothers are generally more knowledgeable than fathers with the schooling, health status and health behaviors of their children. Although the parent survey did not contain highly sensitive information about the parent, it did ask some sensitive questions about the adolescent. Parents answering child-specific questions numbered 17,713, while 17,669 answered parent specific questions. One hundred sixty four school administrators' questionnaires were returned in Wave I and 125 were returned in Wave III. Schools received monetary incentives and individualized reports. No families received incentives for participation. Individuals did receive incentives for Wave III participation. Of the adolescents subsample for the in-home questionnaire, 78.9% participated in Wave I. Parent interviews were available for 85% of these respondents. Further attrition occurred with Wave II. In 2001 and 2002 when Add Health respondents were re-interviewed for Wave

III to investigate the influence adolescence had on young adulthood, the overall response rate was 77.4%.

Present study sample. The present study uses a subsample of the public-use dataset derived from the larger ADD Health study. The ADD Health public-use dataset was comprised of 6,504 participants obtained from two primary samples: a core sample which is representative of the population of adolescents in schools in the United States, and an oversample of black students whose parents reported being highly educated. Data pertaining to the highly educated African-American cohort were obtained from self-reports of race and parents education from the “in school” student questionnaire. These two samples were drawn independently, meaning all students from cooperating schools were eligible for the core group and all African-American adolescents with a college-educated parent were eligible for the high-education black sample, regardless of whether they had been selected for the other cohort. In the public-use data set, 5984 have a core weight only, 432 cases have a high-education black weight only, and 88 cases have both. This study focuses on the 3147 (48.4) male participants of the public use dataset who were male.

The present study examines predictor variables selected as the result of an in-depth review of the literature and the availability of relevant data from the existing data set, which had the potential to elucidate new information in the areas of interest. Variables were analyzed for 3147 males in this sample during Wave I. and again during

Wave III. Inclusion criteria: name on the roster and in home interview during Wave I, who also had a corresponding parent interview with a woman recognized by the adolescent male as his mother or serving in the maternal role. The appropriate core sample weights and recommended software was used for all analyses. Because each research question was subject to issues of missing data, multiple responses, and different approaches to inquiry, the number of participants in each analysis varies, resulting different sample size (n) for each analysis.

The variables for ethnicity and race was constructed for individual respondents consistent with program specification stated in the Program Code for Race designed by the original Add Health study. The Program Code This used a hierarchical determination of ethnicity and race according to a specifically ordered protocol when the respondent selected multiple categories of ethnicity or race.

Independent and dependent variables. Because ADD Health used no intact measures, researchers must construct variables and measures using individual items from the original ADD Health study. The independent variables for this study included mother-son connectedness, measured by the Mother Perception Scale (MPS, 6 items) and Son Perception Scale (SPS, 7 items), serious delinquency, measured by the Serious Delinquency Scale (12 items), violent delinquency measured by the Violent Delinquency Scale (8 items); and substance use, measured by five items each asking about frequency of recent use of a specific substance.

Criminal justice system involvement. The dependent variable, criminal justice system involvement was measured by a yes or no response to the single item “have you ever been arrested or taken into custody by the police?”

Self-report is a widely used method of measuring delinquency, crime, and violence due to the many variables that are involved in data collection in this sensitive area. In an effort to increase the truthfulness of the responses and reduce the number of non-responses, this and other sections of the ADD Health interview was self-administered using audio-CASI (computer assisted self-interview). Respondents listened to the questions using audio headphones and were instructed on how to answer using the computer. This procedure offered increased privacy and confidentiality with an assumption of improved veracity of the responses.

Mother-son connectedness. The independent variable, Mother-son connectedness measured by Mother Perception Scale and Son Perception Scale was comprised of data obtained during separate individual in-home interviews with the mother and the son during Wave I. The Mother Perception Scale (MPS) used six items measured on a Likert-type scale with scores that ranged from one to five. The Cronbach’s alpha coefficient, the index for internal consistency, was .682. Several attempts were made to increase reliability by discarding questions with little effect. The MPS was scored to insure the lower scores indicate perception more connectedness. Participants needed to answer at least four of the six items to be included. Two questions, (“You just

do not understand him” and He interferes with your activities”) were reverse coded to maintain the directional continuity indicating lower scores as representative of more connectedness. See Table 1 for an overview of reliabilities for each variable measure.

The Son’s Perception Scale (SPS) used seven items measured on a Likert-type scale. Scores ranged from 1-4. The Cronbach’s alpha coefficient, the index of internal consistency, was .819. Five items were originally coded so that lower scores indicated a perception of more connectedness and a higher score indicated a perception of less connectedness. Two items (“how close do you feel to your mother?” and “how much do you think she cares for you?”) were reverse coded to insure directional continuity with lower scores indicating a perception of more connectedness. When a Son Perception Scale was missing more than two responses, it was not included. See Table 1 for a comparison of Cronbach’s alphas for all four instruments. See Table 1 for a comparison of the Cronbach’s alpha for all four instruments.

Substance use. This was measured by responses to five questions related to the frequency of recent use of specific substances. Questions included, number of times respondent used marijuana during the past 30 days, number of times used any kind of cocaine in past 30 days, number of times used any other types of illegal drugs in past 30 days, number of days respondent smoked cigarettes during past 30 days and number of times respondent had 5 or more drinks on a single occasion during the past two weeks. See Appendix H for specifics.

Table 1

Reliability of Independent Variable Measures

	Serious Delinquency	Violent Delinquency	Mother Perception Scale (MPS)	Son Perception Scale (SPS)
Number of items	12	8	6	7
Cronbach's alpha	.698	.667	.682	.819
Cronbach's alpha based on standardized items	.735	.692	—	—

Serious and violent delinquency. The two independent variables, serious delinquency and violent delinquency, were measured using the constructs formulated by Guo (2008) in a previous study also using ADD Health data. It is important to note that although the definition of delinquency used by some researchers denotes behavior among youth under the age of 18, typically law-breaking behavior, this study used a broader definition. Age of the respondent was not a determinant part of the inclusion criteria. Additionally, because the ADD Health refers to the named variables in the interview module as “delinquency” without reference to age, the term delinquency is used similarly in this study.

As suggested by the delinquency and violence literature, 12 self-report items were identified and selected from the ADD Health data obtained during Wave III. The items were divided into violent and non-violent delinquency behaviors. Non-violent delinquency items included stealing amounts larger than \$50, and smaller than \$50, breaking and entering, and drug selling. Violent delinquency included serious physical fighting that resulted in the need for medical treatment, use of weapons to get something from someone, involvement of physical fighting between groups, shooting or stabbing someone, deliberately damaging property, and pulling a knife or gun on someone. The scale measuring serious delinquency behavior used all 12 items and the scale for violent delinquency behavior used a subset of 8 of the same 12 items. The Serious Delinquency Scale had a Cronbach's alpha index for internal consistency of .735. Cronbach's alpha, the index for internal consistency for The Violent Delinquency Scale had a Cronbach's alpha of .692. These scales use questions appearing in other studies using self-report data and are based on current literature on delinquency and criminal behavior. This serious delinquency scale has much in common with delinquency scales used by Haynie (2001, 2003) and by Hannon (2003). The violent delinquency scale focuses on a number of types of violent behaviors that in current practice could be classified as violent offenses by the criminal justice system. The questions used to create these scales are given in Appendix C and D.

The key dependent variable, criminal justice system involvement, was measured by a single item asked during Wave III, “Have you ever been arrested or taken into custody by the police?”

Data Analysis

Research Questions

1. Is there a difference in mother-son connectedness in young adult males with criminal justice system involvement?
2. Are there ethnic differences in mother-son connectedness?
3. Does mother-son connectedness, substance use, serious delinquency, and violent delinquency predict criminal justice system involvement?
4. Does mother-son connectedness and substance use predict serious delinquency or violent delinquency?
5. Are there factors in the mother-son dyad that predict violent delinquency?

Descriptive statistics (means, standard deviations, and percentages) were used to describe the sample. ANOVA, Logistic Regression, and Multiple regression were used to answer the research questions. Statistical Package for the Social Sciences (SPSS) Version 18 was used for all analyses.

Limitations Male participants were the focus of this study because criminal justice system involvement is a more significant and widespread problem in this population. Suicide and other forms of self-directed violence and intentional self-injury were

excluded, although it is acknowledged that these variables are of serious concern and may be related under certain circumstances. Other excluded variables included family structure, gang membership, socioeconomic status, parental criminal history, substance use or mental illness of parents, siblings or other close relatives even though these variables have been implicated in other research. Also excluded were males who did not participate in both Wave I and Wave III interviews, or who did not have a corresponding parent interview with a mother figure. The omission of youth who were out of school at the time of the initial data collection during Wave I may have overlooked individuals with particular issues.

Human Subjects In the original study parents were informed of the school survey, and their permission was obtained before each child could participate. Before any home interview was conducted, signed consent was obtained from both parent and student. For the present study use the contractual dataset (Public Use Dataset) obligates this researcher to protect the participant and respondents from deductive disclosure risk by taking exacting precautions to prevent unauthorized use of data. These special precautions included but were not limited to copying the original data set, and storing the original CD-ROM in a locked drawer; saving computer programs used to construct analysis files, but not the files themselves; retrieving paper printouts immediately; shredding printouts no longer in use; using password protectors; signing confidentiality pledges; and agreeing to use data solely for statistical reporting and analysis. Additionally

deductive disclosure concern prevented full access to all data sources. For this reason the distribution of data was limited in several ways: The public-use dataset includes only a subset of respondents; restricted use data was distributed to certified researchers who committed themselves to maintaining limited access; geocodes were never made available to outside researchers. The University of San Diego Institutional Review Board reviewed this study design, original data source and procedures and determined this study to be eligible for Exempt Review. The present study was subsequently approved

Chapter IV

Results

The purpose of this study was to examine the relationships between mother-son connectedness, substance use, serious delinquency, violent delinquency, and criminal justice system involvement in young men. This chapter presents the study findings. First, a descriptive profile of the sample will be presented, including gender, age, and ethnicity. Scores follow this on the independent variables of mother-son connectedness, substance use, serious delinquency, violent delinquency, and the dependent variable of criminal justice system involvement. All data was checked for accuracy and if not within the expected range was verified with ADD Health data administration with a decision made to include or exclude in the overall sample. The chapter concludes with the findings related to particular research questions.

Characteristics of the Sample The data for this study came from a secondary analysis of Wave I, WAVE II, and Wave III of the ADD Health public-use dataset. Due to the design of the original study, where Wave I seniors in high school were not selected to be interviewed at Wave II, retention rate was not an appropriate statistic to use to describe Add Health study participation. Any calculated retention rate would be misleading. The response rate at each wave is the best indicator to use. The response rate for Wave I was 78.9%. The response rate for Wave II was 88.2%, The response rate for Wave III was

78.4 % (although reportedly a little lower for males in the public use data set). The response rate for Wave IV was 80.3%. This study focuses on the 3147 (48.4) male participants of the public use dataset who were male. Total sample size, gender, age, and ethnicity are found in Table 2

Table 2

Summary of Sample Characteristics

	N= Number	Percent
Gender		
Male	3147	48.4%
Female	3356	51.6%
Age at Wave II		
N	4834	74.3%
System Missing	1670	25.7%
Mean 16.02		
SD 1.619		
Ethnicity		
Hispanic	358	11.4%
Race		
African-	758	24.0%
American	126	4.0%
Asian	64	2.0%
American	23	0.7%
Indian	1815	57.7%
Other		
White		
Total Sample	6504	100%

The variable of age was constructed differently in Wave I, Wave II, and Wave, III. Because in Wave I the respondents age was constructed using the interview

completion date and date of birth variables, only the month and year of birth are available. The number 15 is used as the day of birth when calculating age. During Wave II and III the age of the respondent used the actual date of birth that was not released with the data. During Wave III age was calculated by the computer-interviewing program and then verified by the respondent. For this reason age is reported in this study as the response to the question “How old are you?” during Wave I, and calculated age during Wave II (approximately one year later) and is the estimated age for Wave III based on data collection time period. The most frequent response to the question during Wave I was 15. The most frequently stated age during Wave II was 17. Respondents ranged from 18-26 as confirmed during Wave III interviews. Age results are summarized in Table 3.

Table 3

Age of Male Respondents at Wave I, II, & III				
		Wave I “How old are you?”	Wave II Calculated Age	Wave III Calculated Age
N	Valid	2247	2315	-
	Missing	900	832	-
Mean		14.96	16.11	-
Mode		15	17	-
SD		1.741	1.634	-
Range		9 (10-19)	10 (11-21)	18.26

Note. Not obtained

Race and ethnicity was determined through self-report. Because many respondents marked more than one category the ADD Health protocol ‘Program Code for Race’ was followed to maintain consistency with the original study. Using this protocol the Wave I in-home interview variables were used to construct RACE. A single race variable (RACE) was constructed from the six variables stated,; “Are you of Hispanic or Latino origin?” “What is your race? (White)”, “What is your race? (Black or African-American)”, “What is your race? (American Indian or Native American)”, “ What is your race? (Asian or Pacific Islander)”, “What is your race? (Other)?”.

If the respondent answered “yes” to “Are you Hispanic or Latin origin?” that respondent was given a race category of “Hispanic” and eliminated from any race category that was marked saying “what is your race?”

In one question, respondents were able to mark more than one answer, but they were placed in only one category in the RACE variable. If the respondent marked “Black or African American” and any other race, they were designated as Black or African-American, and eliminated from other marked categories. The process was repeated for the remaining race categories in the following order: Asian, Native American, other, white. It required the recoding of all ethnicity and race variables, including 13 that required hand computing to achieve the desired accuracy. The sample was diverse in terms of ethnicity and race. See Table 2 for frequencies and relative frequencies.

Criminal justice system involvement was measured by the response of each male and female in Wave III of the public-use dataset to the single item “ have you ever been arrested or taken into custody by police”. See Table 4 for an overview of the results

Table 4

Gender Differences and Criminal Justice System Involvement

Ever arrested or taken into custody by police	Gender		N = 949
	1 Male	2 Female	<i>n</i>
0 No Count	260	160	420
Expected Count	297.9	122.1	420.0
% Ever arrested	61.9%	38.1%	100%
or			
taken into			
custody	38.6%	58.0%	44.3%
by the police	24.4%	16.9%	44.3%
% within			
BioSex			
% of Total			
1 Yes Count	413	116	529
Expected Count	375.1	153.9	529
% Ever arrested	78.1%	21.9%	100%
or			
taken into			
custody	61.4%	42.0%	55.7%
by the police	43.5%	12.2%	55.7%
% Bio Sex			
% of Total			
Total Count	673	276	949
Expected Count	673	276	949
% Ever arrested	70.9%	29.1%	100%
or			
taken into			
custody	100%	100%	100%
by the police	70.9%	29.1%	100%
% Bio Sex			
% of Total			

A total of 949 responded either yes or no to the question. Of the 529 respondents who answered yes, 413 (78.1%) were male and 116 (21.9%) were female. Males are disproportionately represented in the criminal justice system throughout the United States.

Measurement Reliability A major challenge of using data from a source that used no standardized measures is that validity and reliability are more difficult to ascertain. As a result, a parsimonious approach to analysis of the research questions required meticulous attention to the selection of items in the design of each measure. When confirmatory factor analysis revealed little information, exploratory factor analysis was conducted for the Mother Perception Scale and the Son Perception Scale. Principal component analysis was conducted. Each measure resulted in a single factor solution.

Cronbach's alpha coefficient was calculated for the 12-item Serious Delinquency Scale resulting in a Cronbach's alpha of .698. The Violent Delinquency Scale, comprised of 8 of the same 12 items used in the Serious Delinquency Scale, showed a Cronbach's alpha coefficient of .667. A comparison of reliability for the four instruments can be found in Table 1.

Substance use was measured by response to five items asking about frequency of recent use of specific substances. One item looked at the number of cigarettes smoked per day, three items looked at the number of times the respondent used cocaine, marijuana, or illegal drugs during the past 30 days, and one item measured the incidence of binge drinking, defined as five or more drinks on one occasion during the past two weeks. For the mean, standard deviation, and the range for frequency of use of each substance see Table 5.

Table 5

Frequency of Recent Use of Specific Substances

	times used marijuana past 30 days	times used any kind of cocaine in past 30 days	times used other types of illegal drugs in past 30 days	cigarettes smoked per day	times have 5+ drinks on single occasion in past 2 weeks
<i>n</i> Valid	673	148	209	596	1299
Missing	1642	2167	2106	1719	1016
Total	2315	2315	2315	2315	2315
Mean	14.81	7.09	2.61	1.67	2.02
Standard Deviation	37.96	72.92	6.08	.755	2.77
Range	500	888	30	3	14

Findings Related to the Research Questions

This study focuses on the 3147 (48.4) male participants of the public use dataset who were male.

Research question 1. Is there a difference in mother-son connectedness in young adult males with criminal justice system involvement?

A sample ($n = 673$) of males responded to the question “Have you ever been arrested or taken into custody by the police?” Of these, 260 said no, and 413 said yes. The means, standard deviations and sample sizes for the Mother Perception Scale and the Son Perception Scale are given in Table 6.

Table 6

Mother-Son Connectedness and Criminal Justice System Involvement

		Mother Perception Scale (MPS)			Son Perception Scale (SPS)		
Ever arrested or taken into custody by police		M	SD	<i>n</i>	M	SD	<i>n</i>
No	260	1.768	.51	239	1.599	.562	247
Yes	413	1.98	.587	365	1.659	.568	388
Total	673	-	-	604	-	-	635

Note that lower scores on each scale indicate a perception of more connectedness, while a higher score indicates perception of less connectedness.

Initial data screening was conducted and Levene's Test for Equality of Error Variances was noted to be significant (.013), Log transformation coaxed normality. A repeat of Levene's Test revealed non-significance (.224), indicating homogeneity of group variances.

A one-way analysis of variance (ANOVA) was conducted to examine whether mean scores on the Mother Perception Scale or the Son Perception Scale differed when young men reported having criminal justice system involvement. Statistically significant results showed less mother-son connectedness as measured by the Mother Perception Scale when sons reported criminal justice system involvement $F(1, 603) = 20.995, p = .000$, a partial $\eta^2 = .033$ (Adjusted R squared = .032) indicating a small effect size. There were

no statistically significant differences in mother-son connectedness as measured by the Son Perception Scale, $F(1, 634) = p = .193$, partial $\eta^2 = .000$.

Research question 2. Are there ethnic differences in mother-son connectedness?

Measures of central tendency was determined by finding the mean and standard deviation for each of the ethnicity and race categories of Hispanic, African-American, Asian, American –Indian, Other and White for the respondents of the Mother Perception Scale and the Son Perception Scale. The measures for the study sample are presented in Table 7. Levene's Test of Equality of Error Variances showed no significance for either the respondents completing the Mother Perception Scale (.066) or the respondents completing the Son Perception Scale (.370), indicating that both groups had homogeneity of variances.

An analysis of variance (ANOVA) was performed to determine the interaction and main effects between mother-son connectedness by ethnicity and race. The results showed a significant relationship between the Son Perception Scale and Race $F(5, 2604) = 3.934, p = .001$, Partial Eta Squared = .008 (Adjusted R Squared = .006). These results are reported in Table 7.

Because ANOVA did not reveal which categories were significant, multiple comparisons (post hoc comparisons) were performed using Tukey's Honest Significance Difference (HSD) to determine the significant relationships. Significant differences were found between African-American, Asian, and White males. The difference showed

African-American males reported significantly more mother-son connectedness than did either white males ($p = .001$) and Asian males ($p = .034$). However, no significant differences were found between White and Asian males related to ethnicity and race. Similarly, no significant differences were found related to ethnicity and race between respondents completing the Mother Perception Scale.

See Table 7 for respondent scores on the Mother Perception Scale and the Son Perception Scale. Although direct comparisons cannot be made scores were listed in ordinal ranking to illustrate differences mother-son connectedness by ethnicity and race.

Table 7

Ethnic Differences in Mother and Son Perception of Connectedness

	Ordinal ranking most (top) to least connectedness	M	SD	n
Mother Perception Scale (MPS)				
American Indian	1	1.777	.433	56
Other	2	1.780	.575	17
Hispanic	3	1.785	.567	278
Asian	4	1.793	.539	90
African American	5	1.845	.541	604
White	6	1.859	.519	1559
Total				2604
Son Perception Scale (SPS)				
African American	1	1.518	.515	604
Hispanic	2	1.592	.531	278
White	3	1.618	.528	1559
Other	4	1.630	.565	17
American Indian	5	1.64	.447	56
Asian	6	1.695	.592	90
Total				2604

Those reporting the lowest scores indicating more connectedness are located at the top of the list. Those on the bottom of the respective lists indicate less connectedness. The differences in mother and son perception of connectedness by ethnicity and race are evident in the relative rankings.

Research question 3. Does mother-son connectedness, substance use, serious delinquency, and violent delinquency increase the odds of criminal justice system involvement?

Binary logistic regression was conducted to determine which independent variables Mother Perception Scale (mean), Son Perception Scale (mean), number of cigarettes smoked per day, number of times have 5 or more drinks on a single occasion in past two weeks, number of times used marijuana in the past 30 days, Serious Delinquency Scale (summed score) Violent Delinquency Scale (summed score) were predictors of criminal justice system involvement in young adulthood (no or yes). Data screening led to elimination of several outliers. Regression results from Omnibus Test of Model Coefficients indicated that the overall model of seven predictors was statistically reliable in distinguishing between those reporting yes to criminal justice system involvement and those reporting no ($-2\text{Log Likelihood}=143.068$, $\chi^2(7)=19.522$, $p=.007$). The model correctly classified 77.9 % of the cases. Regression coefficients are presented in Table 8.

Table 8

Regression Coefficients for Model Variables

Variable	n	B	Wald	df	Sig.	Odds Ratio
Ever arrested or taken into custody by police	673	-	-	-	-	-
Mother Perception Scale (Mean)	2760	1.398	7.554	1	.006	4.047
Son Perception Scale (Mean)	2934	.293	.517	1	.472	1.341
times used marijuana past 30 days	837	.019	1.699	1	.192	1.019
cigarettes smoked per day	758	-.297	1.037	1	.308	.750
times have 5+ drinks on a single occasion past 2 weeks	1650	.125	2.410	1	.121	1.133
Serious Delinquency Scale (summed score)	2226	0.26	.043	1	.835	1.027
Violent Delinquency Scale (summed score)	2207	.103	.256	1	.613	1.109
Valid n (listwise)	154					

Odds ratios show the only significant predictor to be scores on the Mother Perception Scale. The Odds Ratio was 4.05 meaning that for each increment of one in the Mother Perception Scale there was a 1.398 (logit) increase in the log odds of the son having criminal justice system involvement. The higher the score on the Mother Perception Scale, the less connected the mother perceived herself to be with her son, and the greater the likelihood that he would report criminal justice system involvement.

Research question 4. Does mother-son connectedness and substance use predict serious delinquency and/or violent delinquency?

Standard multiple regression was conducted to determine if the independent variables of mother-son connectedness measured by the Mother Perception Scale (*M*) and Son Perception Scale (*M*), and substance use (number times used marijuana in past 30 days, number of cigarettes smoked per day, number times have five or more drinks on a single occasion during past two weeks) were predictors on summed scores of the Serious Delinquency Scale or the Violent Delinquency Scale.

The dependent variable of Serious Delinquency Scale was analyzed first. Data was screened for missing data and outliers. A large number of non-normal residuals were revealed and five cases were eliminated. Evaluation of linearity led to log transformation of both measures showing some reduction in skew and kurtosis. Regression was conducted resulting in $F(5, 312) = 2.858, p = .015$. Adjusted R Squared = .029. Independent variables which were significant in the model related to the Serious Delinquency Scale were number of times having five or more drinks on a single occasion in the past two weeks ($p = .019$) and number of times used marijuana in the past 30 days ($p = .051$).

Standard multiple regression was conducted for the dependent variable measured by the summed score on the Violent Delinquency Scale. The independent variables were of Mother Perception Scale (*M*) and Son Perception Scale (*M*), and substance use (number

of times used marijuana in past 30 days, number of cigarettes smoked per day, number of times have five or more drinks on a single occasion during past two weeks). Data was screened for missing data and outliers and a large number of non-normal residuals were revealed. Five cases were eliminated. Evaluation of linearity led to log transformation showing some reduction in skew and kurtosis. Model summary showed small increase in $R^2 = .046$ with Adjusted $R^2 = .030$. ANOVA resulted in significance for the full model with $F(5, 313) = 2.969$ $p = .013$. The independent variable contributing most significantly to the model is number of times respondent reports having 5 or more drinks on one occasion during past two weeks ($p = .000$)

Research question 5. Are there factors in the mother-son dyad that explain the greatest amount of variance in violent delinquency?

Standard multiple regression was conducted to determine if the independent variables as measured by the Son Perception Scale were predictors of summed scores on the dependent variable Violent Delinquency. Items were run separately for those that were focused on emotions (emotional warmth, perception that mom cares about you, perceived close to mom) and those focused on perception of mom's behavior (mom encourages independence, and mom talks about ethics). The $n = 2075$ for this analysis.

The data was also screened for tolerance (measure of collinearity) and variance inflation factor. Both indicated no issues of concern. However, a scatterplot of Son Perception Scale showed high number of residuals. Evaluation of linearity led to log

transformation. While standard multiple regression indicated no significance, results showed trending toward significance, $F(3, 2077) = 2.387$, $p = .067$.

On the Mother Perception Scale ($n = 1942$) the independent variables (get along well with the adolescent, make decisions together about the adolescents life, trust adolescent, don't understand adolescent, interferes with the mother's activities) were examined using standard multiple regression analysis for their effect on dependent variable Violent Delinquency (summed score). Initial data screening to segregate variables by attitudinal, behavioral, and emotional characteristics proved futile and the approach was abandoned. The data was screened for tolerance (measure of collinearity) and variance inflation factor. No issues of concern were revealed. Data was examined using standard multiple regression for the significance in the overall model using the 5 predictors. The results are statistically significant $F(5, 1941) = 2.232$, $p = .049$, however less than 1% were responsible for dependent variable. The mother's perception of feeling less able to trust her son was a significant predictor violent delinquency.

Chapter V

Conclusions, Implications, Recommendation

Maintaining and promoting the health and well being of America's youth as they traverse adolescence into emerging adulthood is a major societal responsibility. Threats have the potential to derail this process and significantly reduce the number of productive healthy individuals that take their place in society as mature adults. Involvement in the criminal justice system has been shown to be one of the significant risks to personal achievement and societal integration. Interference in educational and career attainment resulting from criminal justice system involvement can have lifelong impact. Because the 200% increase in incarceration rates over the past 10 years has decimated the youth population in many communities, knowledge of factors which protect against criminal justice system involvement is of value. The relationship of mother-son connectedness, substance use, serious, and violent delinquency to criminal justice system involvement has had limited examination.

Discussion of the Findings

Research question 1. Is there a difference in mother-son connectedness in emerging adult males with criminal justice system involvement?

In this study mother's who perceived the quality of their relationship with their sons more negatively during adolescence were more likely to have a son with criminal justice

system involvement. If connectedness between parent and child is important as a protective factor, it is something to be fostered and encouraged. Although significant, the low reliability quotient of the six items that were used to measure this construct limit inference to other populations. Future research would benefit from development of a scale with increased precision and improved reliabilities. Nevertheless, this study suggests that a mother may have more insight into the behavior, particularly problem behavior, of her son than previously realized. She may be able to provide more insight into nuances of behavior than the perspective of the adolescent alone.

Additionally the results of this study suggest that the mother may be more sensitive and discerning in the area of problem behaviors than the son. This is in contrast with parent research showing mothers as somewhat naïve regarding the behavior of their adolescent children and subject to the distortions of societal expectations, particularly in areas that reflect upon their parenting skills. Although a mother's (other parental) perspective may be more difficult to obtain, it may offer a complementary, or even more valid indicator than the easier to obtain self-report of the youth. Even though the correlation and relationship of the scores of the respondents on the Mother Perception Scale and the Son Perception Scale would be of interest, the measures used for this study limited comparisons. While there were several related items on each scale, the majority of the items were specific to the particular measure. Improved individual and dyadic measurement is needed. Item analysis comparing individual items from the Mother

Perception Scale to the dependent variable of criminal justice system involvement could yield some direction.

Research question 2. Are there ethnic differences in mother-son connectedness?

This study shows a significant portion of the population marking multiple responses regarding ethnicity and race. This is consistent with current trends indicated by the 2010 census. This makes categorization into distinct ethnic or racial categories difficult. This is consistent with the recent census data and has become a prominent trend over the past decade. Self-report has been shown to be more reliable than administrator observation. However, it is increasingly losing effectiveness as an efficient source of reliable information, particularly for decision-making and policy formation. Future research must incorporate more decisive design strategies upfront. This study shows mother and son perceptions regarding the quality of their relationship may differ. It is informed by the cultural, generational, and interpersonal factors, which influence roles, expectations, support systems, and attitudes.

Of note, African-American males report the greatest degree of connectedness while African-American mothers perceived considerable less connectedness when compared to mothers of other ethnicities. Only White mothers show less perception of connectedness than African-American mothers. More sensitive dyadic analysis offers promise and should be the subject of future research.

Research question 3. Does mother-son connectedness, substance use, serious delinquency, violent delinquency increase the odds of criminal justice system involvement?

While the overall model did fit, one variable that is shown to be of significance is the degree of connectedness perceived by the mother (Odds Ratio = 4.05). There is growing concern about the health and well being of adolescents and how to foster an environment that nurtures healthy and productive adult citizens. Healthy People 2020 brought forth newly revised objectives for Adolescent Health, which includes connectedness. A key indicator is having a relationship with at least one other adult who they can talk and confide in. The measure used is self-report from the adolescent. The results of this study suggest that other informants, including the subject's mother, may offer meaningful information. The visibility of high-profile cases of interpersonal violence has sensitized society to the urgency of finding effective assessments and treatment approaches for mental health and behavioral problems in children and adolescents. The question remains, when does one become the best or only effective judge or interpreter of their own behavior? Do others play a role in helping to understand the observable and intangible aspects that make up relationships with self, family, friends and the world at large? Recent research on connectedness, neurodevelopment, communication, and emotional intelligence suggest that individuals are inherently more

connected, and actively involved in the connection process beginning even before birth, than has been previously recognized.

Research question 4. Does mother-son connectedness and substance use predict serious delinquency or violent delinquency? The results of this study show binge drinking, defined as having five or more drinks on a single occasion as most strongly implicated in both serious delinquency and violent delinquency. The number of times that a young man used marijuana in the past 30 days was also a significant predictor of serious delinquency. This is consistent with current literature citing substance use as correlated with both serious and violent delinquency. The absence of consistent definitions defining substance use or abuse makes measurement and comparisons difficult. Research defining substance use include definitions related to the nature of the unique substance, frequency of use, quantity of use, degree of related impairment, associated economic, legal, health, and interpersonal consequences, as well as the age and gender of the user. Most researchers, clinicians, and policy makers agree that substance use presents one of the most formidable challenges to health, and science must continue to look for answers. Much emphasis has been placed on battling the problems of drug use, while the issues of alcohol use has had less attention. The legal status and the tacit acceptance of excessive alcohol use by young adults being viewed as normative phase of the young adult experience, has been a barrier. Recent research on genetics and the adolescent brain is bringing information and theories forward at a rapid pace. Until better

science brings develops clearer to definitions enabling improved measurement, the development of translational research focused on effective interventions will remain elusive.

Research question 5. Are there factors in the mother-son dyad that explain the greatest amount of variance in violent delinquency?

The intangible perception of being are cared for by one's mother remains an important determinant of behavior in adolescence and beyond. Trust appears to be a defining interpersonal indicator of relationship quality. Whether the absence of trust results from or causes risk behavior is unclear by this study. What is clear is the need for construct that can make fine distinctions to measure the gradations of a relationship as complex as the one between mother and son. Research exploring genetic, preconception and prenatal influences and an understanding of the lifelong contribution of both gender and connectedness to the quantity and quality of life, make connectedness a fertile area for future research.

The principal conclusions drawn from this study are:

1. The degree of connectedness a mother perceives herself to have with her son during adolescence is predictive of the son's involvement in the criminal justice system.

2. The adolescent male's perception of connectedness with his mother during adolescence is not predictive of criminal justice system involvement.
3. A mother's perception of connectedness with her son and a son's perception of connectedness with his mother may not be the same.
4. Race /ethnicity are becoming increasingly difficult to discern with accuracy.
5. African-American males show significant ethnic differences from Asian and White males in their perceptions of connectedness to their his mothers.
6. Binge drinking and marijuana use by young adults continue as significant health risk behaviors with the potential for many negative consequences including serious and violent delinquency.

Limitations of the Study Males in this study were the subject of interest because they makeup the largest segment of the population with criminal justice system involvement.

It is unknown whether females exhibit similar perceptions about connectedness with their mothers or similar perceptions from mothers about their daughters. Maternal response and behavior has been shown to differ toward males and females throughout life.

Research shows gender to be a strong determinant in many areas throughout life. The

variables of interest in this study have been shown to be influenced by gender. The data used for this study came from a school-based study, which excluded adolescents who had dropped out of school at an early age, a vulnerable and at risk population. The limitations of the data available made comparisons difficult in the area of connectedness. It can be argued that differing perceptions are subject to many variables which influence perspectives, but language is one of the ways that we seek to equalize these influences. Similarly worded questions would offer a good beginning. The absence of standardized measures without established reliabilities limits the ability to generalize about the findings.

Implications for Nursing Research, Practice, Education

Nursing research. This study looked at several factors that were predictive of behavior. The study of connectedness between mothers and their children at all stages of life offers unlimited possibilities. Future research should seek to develop a more complete model with increased explanatory power in predicting behavioral outcomes.

Substance use, serious, and violent delinquency are areas of import that nursing comes in direct contact within many settings. Research that focuses on the health effects and special populations involved will offer the possibility to make important contributions.

The healthcare issues and concerns of adolescents and young adults in the areas of health promotion, disease prevention and health restoration would be an important

direction for research efforts. Nursing research with vulnerable populations such as those impacted by criminal justice system involvement; prisoners in jail or prison, on parole, or on probation and their families, and loved ones or the mentally ill for whom the criminal justice system has become the default care system. And nursing care of prisoner seeking reentry back into the community upon release. These populations and the communities in which they live would benefit from increased understanding about the challenges and they face as a result of their involvement with the criminal justice system or the lifestyle that brought them to it and the most effective approaches to care.

The short and long-term health effects that emerge from the earliest, longest lasting and arguably most significant relationship that any individual ever has, with their mother, offers the nursing profession a broad spectrum of research opportunities.

Nursing practice.

Nurses in many settings have direct access to adolescents as well as to parents. And thus they have the potential for performing many helpful assessments and interventions that address or prevent problem behaviors. Assessment of violence and substance use is an essential starting point. It is important for nurses to ask adolescents direct questions about their involvement in these issues. Failure to address these issues can be perceived as tacit permission to engage in them. Addressing topics that are uncomfortable for adolescents and adults alike openly can be a comfort for adolescents

who may have no other source of information or support for dealing with these issues. Addressing these topics in an open fashion can communicate that the nurse is a safe person to talk to and pave the way for later conversations. In any communication with an adolescent failing to inquire about an adolescent's involvement in problem behaviors may result in lost opportunities to educate the adolescent.

Because confidentiality a major issue with adolescents, nurses must understand the legal and ethical implications of gaining knowledge about the behaviors about adolescents and when not to keep this knowledge private. This includes understanding parental rights, a controversial issue in adolescent healthcare. Anytime the nurse is dealing with such sensitive information, federal and state laws, local guidelines and agency or system policies and procedures should be the guide.

Nurses who work in schools and primary care often have access to parents as well. This study reinforces the importance of listening to the parental perspective in assessing both parent-adolescent relationship quality and adolescent behaviors. While recognizing the continuing influence of parents with youth as they mature into adulthood, the nurse must also understand the limitations. These nurses must empower parents to educate themselves and their children and to monitor and intervene with their children who may be engaging in risky or even dangerous behaviors. Nurse can educate them about the risks their children face and direct them to community resources needed to help their children. Many communities have agencies focused on these concerns. For parents

expressing concerns about talking to their children or that their children are already engaging in risky behaviors, resources might include clinics, where further evaluation can be performed and or treatment services may be obtained. Including private mental health practitioners, advanced practice nurses, and school based resources like counselors and psychologists, social services and mental health services. Hospitals may be needed for those whose behavior puts them at risk for harming self or others.

School nurses are resources for school personnel and have a responsibility to educate these professionals. Research based Information about the prevalence of a problem, and the risks associated with these behaviors, the behaviors that indicate the presence of a problem is needed. School nurses must teach school personnel how they might help in preventing and identifying these problems in youth. For example, school personnel need to know the signs of intoxication and potential substance abuse in their students. They can support school personnel in being proactive in referring students for help.

Although mothers have been acknowledged as valued informants, influencers, and caregivers in the lives of their children at all ages. That is why in this study they were selected as the most desirable parental interview subject. Professionals have long been advised to listen to mothers even when clinical evidence appears to be to the contrary. Yet when youth enter adolescence, mother's perspectives are often seen as less than valid. The general belief purported in the literature is that parents may be too guided by

idealistic expectations or social pressure to present parenting skills in a positive light, thus distorting their perspective. This reason is commonly given as to why youth are the sole informants. Research highlighting connectedness to others, suggests the importance of caring parents and peers.

Opportunities for theory building are present. Transgenerational suffering is brought about a myriad of life circumstances, individual and social variables. Although past literature has focused primarily on the effects of attachment and the nurturing of children by their parents, the concept of connectedness has application across populations; for adults caring for adults. The care of frail old, old elderly by their aging adult children; the care of chronically ill adults by their siblings, The role of mothers in the care of their adult children, as well as grand children, are important area for nursing inquiry.

Another relate example, research focusing on the effects of criminal justice system involvement should be extended to include children, families, parents, siblings, partners, spouses, friends, coworkers and other member of the support system of the incarcerated. These people are effected before during and after incarceration as the prisoner makes reentry into the community. Research that explores other parallel life situations such as military deployment and its related hardships could be of significant benefit. The health effects of living and working in adverse, often hostile and violent

environments would be an important direction, with potential to effect quality of life through reduction of physical and psychological injury.

Nursing education. Adolescence has traditionally been seen as a time of health, the greatest threats coming from injury and accidents, although in recent years improved healthcare during infancy childhood has resulted in more children living into adolescence and young adulthood with chronic conditions. Still adolescence is generally thought of as a time of relative health. Of late, the risks and behavior problems leading to acute or chronic health problems in adolescents has received greater attention. Consequently, health promotion and disease prevention may be the most important role that any nurse can play in adolescence and young adulthood. The potential for increased nursing involvement with the underserved population requiring child and adolescent mental health services. Nurses have demonstrated their ability to engage and develop trusting relationships in many settings. They have proven effectiveness in working with health problems requiring sensitivity, compassion, broad theoretical knowledge, advanced communication skills and the ability to connect with people of all ages. This includes adolescents and their parents.

As more nurses assume roles in the community at an earlier stage of their career, it is crucial for student nurses to understand the impact and value of their assessment, education and guidance and to identify every teaching opportunity. The effectiveness of nurses in home visit programs with new parents and in many aspects of parent education

has been well documented, students could benefit from increased opportunities to interact with parents of children of all ages across settings, particularly in the community. The importance of the continued emphasis on the development of effective teaching and communication skills cannot be overemphasized and curriculum threads which build upon teaching and behavioral change theory should be embedded at all levels of the curriculum.

Another area nurses would benefit from is the inclusion of more exposure to nurses practice in correctional settings. Number of individuals and families impacted by the criminal justice system is staggering and is encountered across settings. Understanding the legal protections, health care obligations, and special balance of custody and caring is necessary.

Nurses need psychological and educational preparation for working with patients that are in custody and their families. The location of related patient encounters spans all levels of medical and surgical health services, maternal and infant care, in-home care, geriatric services, school and community nursing, and mental health. Comparison can also be made between military and correctional healthcare. Similarities exist in the demographics and the numbers effected. As in the military, almost all individuals involved in the correctional system will eventually return to the community. Increased mentoring with nurses working in correctional health care is needed. In the competitive job market of the past several years, correctional settings have continued to offer many

rewarding opportunities, however nurses have had limited access to role models and colleagues with experience in these settings. This is an important area for future educational endeavor.

Health care policy. The results of this study are of interest and application to health care and family related policy development. The development of policies that foster family connectedness and cohesiveness and work toward inclusion in care and decision-making are of value at all ends of the health care spectrum. from preconception decision making to end of life. Recognizing the critical role the family performs in the care and support of most individual when it comes to health-related issues is crucial to facilitating the best possible outcome. There is a need for effective patient and family education policies in all areas of healthcare. Understanding the requirements and controversies of informed consent, particularly in relationship to children and adolescents, and vulnerable populations such as prisoners and the mentally ill is necessary. Nurses have many opportunities for involvement in policy decisions pertaining to these groups. Advocacy for policies which respect the parent-child relationship, seek to correct health disparities and address the major health concerns of the adolescents and young adults and their families will be important roles for nurses in the future.

References

- (2009). One in 31: The Long Reach of American Corrections. In The Pew Center on the States (Ed.).
- Ackard, D. M., Neumark-Sztainer, D., Story, M., & Perry, C. (2006). Parent-child connectedness and behavioral and emotional health among adolescents. *Am J Prev Med*, 30(1), 59-66.
- Allen, R. E. (Ed.). (1992). *The Concise Oxford Dictionary* (Eighth Edition ed.). Oxford: Oxford University oPress.
- American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition ed.). Washington, DC: American Psychiatric Association, .
- Anthony, J. C., Warner, L. A., & Kessler, R. C. (1994). Comparative epidemiology of dependence on tobacco, alcohol, controlled substances and inhalants: Basic findings from the National Comorbidity study. *Experimental and Clinical Psychopharmacology*, 2, 244-268.
- Apel, R., & Sweeten, G. (2009). The effect of criminal justice involvement in the transition to adulthood (p. 129): National Institute of Justice,.
- Aronowitz, T. (2005). The role of "envisioning the future" in the development of resilience among at-risk youth. [Qualitative research grounded theory]. *Public Health Nursing*, 22(3), 200-208.
- Ascher-Svanum, H., Nyhuis, A. W., Faries, D. E., Ball, D. E., & Kinon, B. J. (2010). Involvement in the US criminal justice system and cost implications for persons treated for schizophrenia. *BMC Psychiatry*, 10(11). doi: 10:1186/1471-244X-10-11
- Barreras, R. E., Drucker, E. M., & Rosenthal, D. (2005). The concentration of substance use, criminal justice involvement and HIV/AIDS in the families of drug offenders. *Journal of Urban Health*, 82(1), 1099-3460 (print) 1468-2869 (online). Retrieved from doi:<http://www.springerlink.com/content/k5706533x141g344/>
- Board of Behavioral Cognitive and Sensory Science and Education. (2002). Attitudes, Aptitudes, and Aspirations of American Youth: Implications for Military Recruiting *Youth values, attitudes, perceptions, and influencers* Retrieved from <http://www.nap.edu.cdu/openbook/0309085314/html/149.html>
- Boonstra, H. (2001). The 'Add Health' Survey: Origins, purposes and design. [policy review and history]. *The Guttmacher Report on Public Policy*, 4(3), 10-12.
- Bowlby, J. (1969). *Attachment and loss* (Vol. 1): Harmondsworth, Penguin.
- Chipman, S., Olsen, S. F., Klein, S., Hart, C. H., & Robinson, C. C. (2000). Differences in retrospective perceptions of parenting of male and female inmates and non-inmates. *Family Relations*, 49(1), 5-11.

- Dyer, J., & McGuinness, T. (1996). Resilience: Analysis of a concept. *Archives of Psychiatric Nursing* 10(5), 276-282.
- Garcia, C. (2010). Conceptualization and measurement of coping during adolescence: a review of the literature. [Review of literature]. *Journal of Nursing Scholarship*, 42(2), 166-185. doi: 10.1111/j.1547-5069.2009.01327.x
- Garmezy, N. (1990). Risk and protective factors. In J. Rolf, D. Masten, K. Cicchetti, Nuechterlein & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology*. Cambridge, U.K.: Cambridge University Press.
- Gilmore, R. W. (2004). Pierce the future for hope: Mothers and prisoners in the post-Keynesian California landscape. In J. Sudbury (Ed.), *Global Lockdown: Gender, race and the prison-industrial complex*: Routledge.
- Grunbaum, J. A., Kann, L., Kinchen, S., Ross, J. G., Lowry, R., & Harris, W. A. (2003). Youth risk surveillance-United States. *Morbidity and Mortality Weekly Report* 2004;53(SS-2):1-100 2004. Retrieved November 28, 2005, 2005, from www.cdc.gov/mmwr/preview/mmwrhtml/ss5302a1.htm
- Grunbaum, J. A., Kann, L., Kinchen, S. A., Williams, B., Ross, J. G., Lowery, R., & et al. (2002). Youth risk behavior surveillance-United States 2001. *Morbidity and Mortality Weekly Report Surveillance Summaries*, 51(SS04), 1-64.
- Harris, K., Mullan, Gordon-Larsen, P., Chantala, K., & Udry, J. R. (2006). Longitudinal trends in race/ethnic disparities in leading health indicators from adolescence to young adulthood. [Research using ADDHEALTH database]. *Archives of Pediatrics & Adolescent Medicine*.
- Harris, K. M. P. G.-L., Penny PhD; Chantala, Kim MS; Udry, Richard PhD ., (2006). Longitudinal trends in race/ethnic disparities in leading health indicators from adolescence to young adulthood. [Adhealth study report]. *Archives Pediatrics & Adolescent Medicine*, 160(1), 74-81.
- Herting, J. R., Eggert, L. L., & Thompson, E. A. (1996). A multidimensional model of adolescent drug involvement. [Research]. *Journal of Research on Adolescence*, 6(3), 325-361.
- Higgins, G. O. C. (1994). *Resilient Adults: Overcoming a cruel past*. San Francisco: Jossey- Bass Publishers.
- Hunter, A. J., & Chandler, G. E. (1999). Adolescent resilience. [Mixed method research]. *Image: Journal of Nursing Scholarship*, 31(3), 243-247.
- Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2008). Monitoring the Future national results on adolescent drug use: Overview of key findings, 2007. In National Institute on Drug Abuse (Ed.), (p. 71). Bethesda, MD: National Institute on Drug Abuse.
- Justice, U. S. D. o., Programs, O. o. J., & Bureau of Justice Statistics (2008). Probation and parole statistics. Retrieved from <http://www.ojp.usdoj.gov/bjs/pandp.htm>

- Kandel, D. B., & Yamaguchi, K. (1993). From beer to crack: developmental patterns of drug involvement. *American Journal of Public Health*, 83, 851-855.
- Karch, D. L., Dahlberg, L. L., Patel, N., Davis, T. W., Logan, J. E., Hill, H. A., & Ortega, L. (2009). *Surveillance for violent deaths---National violent death reporting system, 16 states 2006*. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5801a1.htm>.
- Kelso, J. C. (2008). Achieving a constitutional level of medical care in California's prisons: The federal receivers's turnaround plan (p. 28). Sacramento: California Prison Health Care Receivorship Corp.
- Kessler, R. C., Aguilar-Gaxiola, S., SAndrade, L., Bijl, R., Borges, G., Caraveo-Anduaga, J. J., & et al (2001). Mental-substance comorbidities. *Psychiatra Fennica*, 32(Suppl.2), 62-80.
- Kim, E., Cain, K., & McCubbin, M. (2006). Maternal and paternal parenting, acculturation, and young adolescents' psychological adjustment in Korean American families. [Research empirical study. Cross sectional design]. *Journal of Child and Adolescent tPsychiatric Nursing*, 19(3), 112-129.
- Laird, R. D., Criss, M. M., Pettit, G. S., Dodge, K. A., & Bates, J. E. (2009). Parents' monitoring knowledge attenuates the link between antisocial friends and adolescent delinquent behavior. *Journal of Child Psychology*.
- Levin, E. D., Rezvani, A. H., Montoya, D., Rose, J. E., & Swartzwelder, H. S. (2003). Adolescent onset nicotine self-administration modeled in female rats. *Psychopharmacology*(169), 141-140.
- Lezin, N., Roller, L. A., Bean, S., & Taylor, J. (2004). *Parent-child connectedness: Implications for research, interventions, and positive impacts on adolescent health*. Santa Cruz, CA: ETR Associates.
- Maldonado-Molina, M. M. (2005). *The gateway hypothesis of substance use: an operational definition, alternative progression patterns, and methodological challenges*. PhD.
- National Institute on Alcohol Abuse and Alcoholism. (2003). Alcohol alert, underage drinking: A major public health challenge. 59. Retrieved from <http://www.niaaa.gov/publications/a/alerts.htm>
- Newcomb, M. D. (1989). Substance use and abuse among children and teenagers. *American Psychologist*, 44, 242-248.
- Office of Disease Prevention and Health Promotion. (2005). Healthy People Midcourse Review:
- Weapon carrying by adolescents on school property: Office of Disease Prevention and Health Promotion
- U.S. Department of Health and Human Services,.

- Paz, K. A. (2005). Predicting persistent offending using family characteristics. Retrieved October 11, 2005, 2005, from google.com/search?hl=en&lr=lso-8859-1&q=AddHealth+datsabase+Wave III & btnG=
- Rainone, G. A., Schmeidler, J. W., Frank, B., & Smith, R. B. (2006). Violent behavior, substance use, and other delinquent behaviors among middle and high school students. [Research]. *Youth Violence and Juvenile Justice*, 4(3), 247-265.
- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., . . . Udry, J. R. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 287, 823-832.
- Robinson, Q. L. (2007). *An examination of the ways in which mothers influence the educational success of their sons: A case study of successful eleventh grade males in failing schools*. PHD Dissertation, University of Oregon, Eugene.
- Sabol, W. J., West, H. C., & Cooper, M. (2009). Prisoners in 2008. Retrieved April 3, 2010, from <http://bjs.ojp.usdoj.gov/index.cfm?ty=pbdetail&iid=1763>
- Sarnecky, M. T. (1999). *A history of the U. S. Army Nurse Corps* (Vol. DNSc). Philadelphia: University of Pennsylvania Press.
- Scal, P., Ireland, M., Borowsky, I. W., & (2003). Smoking among American Adolescents: A risk and protective factor analysis. [research article looking at the impact of parental closeness]. *Journal of Community Health*, 28(2), 79-97.
- Slade, E. P., Stuart, E., A, Slakever, D. S., Karkus, M., Green, k. M., & Ialongo, N. (2008). Impacts of age of onset of substance Use disorders on risk of adult incarceration among disadvantaged urban youth: A propensity score matching approach. *Drug Alcohol Dependence*, 1(95(1-1)), 1-13.
- Tusaie, K., Puskar, K., & Sereika, S. M. (2007). A predictive and moderating model of psychosocial resilience in adolescents. [A secondary analysis of a cross sectional survey of 624 rural adolescents age 14-18 in eastern US]. *Journal of Nursing Scholarship*, 39(1), 54-60.
- U.S Department of Justice, Office of Justice Programs, & Bureau of Justice Statistics. (2008). Prison Statistics. Retrieved from <http://www.ojp.usdoj.gov/bjs/prisons.htm>
- U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, & (2008). Jail Statistics. Retrieved from <http://www.ojp.usdoj.gov/bjs/jails.htm>
- Udry, J. R. (2003). The National Longitudinal Study of Adolescent Health (Add Health), Waves I, II, 1994-1996; Wave III, 2001-2002 [machine-readable data file and documentation. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill. .
- Warren, J., Gelb, A., Horowitz, J., & Riordan, J. (2008). One in 100: Behind bars in America. In J. Warren (Ed.), *Public safety performance project* (p. 35). Washington D.C.: Pew Center on the States.

- Washburn, J. J., Teplin, L. A., Voss, L. S., Simon, C. D., Abram, K. M., & McClelland, G. M. (2008). Psychiatric disorders among detained youth; A comparison of youths processed in juvenile court and adult criminal court. [Research study]. *Psychiatric Services: A journal of the American Psychiatric Association*, 59(9), 965-973.
- Wongvatunyu, S., & Porter, E. J. (2005). Mothers' experience of helping young adults with traumatic brain injury. *Journal of Nursing Scholrship*, 37(1), 48-56.
- Zimmer, B. G. (Ed.). (2008). *Pocket Oxford American Dictionary* (Second Edition ed.). New York, New York: Oxford University Press.

Appendix: A

Predictors of criminal justice system involvement in emerging adult males

Appendix B

Summary of studies examining mother-son relationships in adolescence and young adulthood

Author/Year	Sample	Methods	Variables	Major Findings
Blum & Rinehart/1997 Division of General Pediatrics and Adolescent Health, University of Minnesota	Phase 1: 90,000 students in grades 7-12 attending 145 schools across United States Phase 2: Over 20,000 students and 18,000 parents School administrator	School based study of health related behaviors of adolescents in the United States Brief questionnaire administered in school In home interviews of student and parent (primarily mother). All data recorded on laptops Longitudinal Wave I, II, III Wave IV in process	Health status Health site utilization Nutrition Peer Networks Decision making processes Family dynamic Education aspiration Substance use Sexual activity Risk behavior Violence Exercise and fitness Contraceptive use Contextual influences Home environment Family context	Over 10% males report having committed a violent act in the last year 12.4% students have carried a weapon to school in the last month 17.9% say they drink alcohol more than monthly Parents influence adolescent's decision to delay sexual intercourse Access to guns, drugs and alcohol increases likelihood of use
Holden, Miller & Harris/1999 Journal of Marriage and the Family	Study 1: 61 mothers of 36 month old children; 32 girls 29 males 90% white Study 2:	Correlational	Use of different responses including spanking/slapping Parental responses to child misbehavior	Lack of gender differences Fathers and Ogase 1 mother reported spanking at about same likelihood.

	42 mothers 42 fathers of 36 month old children; Not married to each other		Viewed vignettes and answered follow up questions on computer Parent rates frequency of spanking response and the likelihood of 7 responses	
Chipman, Olsen, Klein, Hart, Robinson/2000 Family Relations	128 inmates of Utah Correctional Facilities 337 preschool parents	Completed 62 item parenting questionnaire (self report) about how they were parented in family of origin	Age Race Marital Status Perceived standard of living Authoritative authoritarian Permissive parenting styles Stylistic dimensions	Inmates reported higher incidence of authoritarian and permissive parenting styles Significant interaction between inmate status and parent gender and child gender
Markham, Tortolero, Escobar- Chaves, Parcel, Harrist, Addy/2003 Perspectives in Sexual and Reproductive Health	976 urban, predominantl y minority, alternative high school students	Survey using audio computer- assisted self interview Student Questionnaire from Youth Risk Behavior Survey and Add Health	Family connectedness Age Gender Family structure Sexual Behavior	Males who perceived higher family connectedness were less likely to be involved in a pregnancy The higher students scored on scale of perceived family connectedness, the less likely they were to report ever having had sex or recently having unprotected sex

				Family connectedness may be a predictive factor
Board on Behavioral, Cognitive, and Sensory Sciences and Education/2003	362 high school seniors from 6 schools in North Carolina Army & Air force enlists	Literature review	Influences on military enlistment	2/3 chose friend first; mother followed closely as most influential 80%-90% said they discussed with parent had attitudes similar to parents Mother named as the person who offered the greatest help when discussing career plans and most aware of desires Mother cited most often (father next) as most influential in decision to joining Army Same as Air Force enlists 1992, 1996, 1999
Lezin, Rolleri & Bean, Taylor/2004 Santa Cruz, CA: ETR Associates	Literature search which surfaced over 600 documents from 5 databases Think tank with 15	Literature review to study the construct of "parent-child connectedness" Comprehensive literature review 2 day think	Establish protective influences on adolescent health outcomes How is parent-child connectedness understood by	Close to 100 possible determinants Proposes new model of how established Reviews exciting interventions Dissemination

	national experts	tank Online survey Dissemination activities	users of Resource Center of Adolescent Pregnancy Prevention Expert opinion	activities presentation online forum Several models/theoretical frameworks seek to explain PCC Need to know more about interventions Need for improved measurement Differentiation by gender
Kosterman, Haggerty, Spoth, Redmond/2004 Journal of Marriage and Family	325 families with 6 th grade children	Families visited in homes Completed confidential self-report questionnaire	Parent's proactive family management Perceived opportunities with parents Involvement with parents Perceived rewards from parents Bonding to parents Pro social skills Pro social beliefs Increase in antisocial behavior	Mothers and fathers uniquely influenced their child's antisocial behavior depending on gender of child and parent Socialization with daughters directly affected daughters but not sons Cross-gender influence important for father's control of daughters antisocial behavior
Grantham/2005 The University	897 European American adolescent males	Secondary analysis of ADD Health Multiple	Age Adolescent male perception of: Subjective	Adolescent males who thought that their mothers had liberal attitudes

of Michigan, Ann Arbor	between 15- 19 years of age and their mothers from Public Use data set of ADD Health with a total of 3,147 adolescent males	ordinal regression Descriptive statistic Pearson product Moment correlations	assessment of pubertal status Maternal attitudes toward premarital sex Mother son connectedness Reported level of sexual intimacy Mother: Amount of maternal communication about sex	in general about their having sex reported a higher level of physical sexual intimacy
Wongvatuny & Porter/2005 Journal of Nursing Scholarship	7 participants; Mothers of young adults who suffered moderate to severe TBI from motor vehicle accidents, sports injuries, or recreation related injuries at least 6 months previously	Series of 3, one hour interviews in participants' homes using non-direct techniques Tape recorded and transcribed Descriptive phenomenolog y	Interview guide Open ended questions	Themes: Reconnecting my child's brain Considering my child's safety Making our lives as normal as possible Dealing with our biggest problem Advocating for my child
Ackard, Neumark- Sztainer, Story, Perry/2006 American Journal of	4746 students in public schools; 2357 girls 2377 boys	Survey Height and weight measurements	2001 Project EAT Parent-child connectedness, opinions valued Parent-child communication and caring	Perceiving low parental communication, caring associated with unhealthy weight control, substance use,

Preventative Medicine			Behavioral health Weight control behaviors Substance use Suicide attempts Emotional Health Body dissatisfaction Self esteem Depressive mood Demographics Parent marital status Race/ethnicity Socioeconomic status	suicide attempts, body dissatisfaction, depression, and low self-esteem Interventions aimed at improving the parent-child relationships may provide or deter health risk behaviors in youth
Crossman & Fenzl/2007 Arizona State University, Tempe	5,000 adolescents from Wave I and Wave III of the National Longitudinal Study of Adolescent Health (Add Health)	Ordinal and linear regression	Illicit drug use Alcohol use Cigarette smoking Closeness to mother Communication with mother Closeness to father Self-esteem	Among males (but not females), closeness with the mother during adolescence is a consistent predictor for use of all 3 substances in young adulthood; direction varies by substance For males, both the mother-son and father-son relationships are important for predicting substance use in young adulthood
Robinson & Quinton/2007 PHD	Five successful black males and their	Qualitative study using tape-recorded interviews and	High performing boys in low performing schools	Proactive mothers overcame hesitations,

Dissertation: University of Oregon, Eugene Educational Leadership	mothers in single parent homes	a focus group Conducted separately for mothers and sons Open and axial coding		taught themselves to talk with school administrators and teachers and anyone who could help sons Encouraged sons to do well in class, emphasized school importance, help with homework, solicited help from role models, encouraged college, monitored activities and behaviors
Branstetter, Furman & Cottrell/2009 Child Development	200 adolescents (14-16 years), their mothers and close friends 100 males 100 females Ethnicity representative of United States	Semi- structured Interviews transcribed and analyzed using Main and Goldwyn's scoring	States of mind Self perception of relationship with parents Relationship with mother Mothers relationship with adolescents Monitoring scale of adolescent's mother Substance use Friends report of substance use	Incorporated multiple reporters More secure attachment styles predictive of higher support, low level of negative interactions in relationships with mother More secure attachment styles related to maternal monitoring (both perspectives) Maternal monitoring associated with

				reduction in substance use
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Appendix C

Summary of studies examining substance use in adolescence and young adulthood

Author/Year	Sample	Methods	Variables	Major Findings
Hawkins, Catalano & Miller/ 1992 Psychologica l Bulletin	Review of literature	Overview of the evidence on risk factors for adolescent drug abuse	Contextual factors Individual and interpersonal factors	Lack of parent- child closeness and lack of maternal involvement with children activities related to initiation of drugs Positive family interaction and attachment discourage youth drug initiation
Brook, Whiteman, Finch, Cohen/1998 Archives of Pediatrics and Adolescent Medicine	488 mothers of 5-10 year old children (1/2 boys) Follow up 166 males, 189 females with data at all 4 points 94% White	Longitudinal interviews during early adolescence, late adolescence, and young adults Additional data from mothers when adolescents were children 2 hour interviews with mothers	Child's feelings toward parent Parent's display affection toward child Cohesiveness and minimal conflict Drug Use Aggression Maternal attachment Unconventionality	Low attachment was related to unconventionalit y which was related to drug use Provides new evidence regarding parent-child mutual attachment Influences on young adult drug use Early intervention with aggression, strengthening

		and their children at home by trained interviewers		the parent-child bond and conventional behavior, and early drug use most effective in reducing adult drug use
Hawkins, Catalano, Kosterman, Abbott, Hill/1999 Archives of Pediatric & Adolescent Medicine	643 fifth graders with follow-up on 598	Non-randomized controlled trial with follow-up 6 years after intervention involving in-service training for teachers, parenting classes, social competency, and training for children over multiple years	Self-reported violent and non-violent crime Substance use Sexual activity Pregnancy Bonding to school School achievement Grade repetition and school dropout Suspension/expulsion School misbehavior Delinquency charges GPA Disciplinary actions	Among students receiving full intervention, fewer students than control students reported Violent, delinquent acts, heavy drinking, sexual intercourse, having multiple sex partners Pregnancy or causing pregnancy by 18 years of age
Brener et al./2004 Morbidity and Mortality Weekly Report	Representative samples of students in grades 9-12 For 2003: 15,214 students, 32 states, 20 school districts	Biennial National School based survey State, territorial and local school-based surveys	Monitors 6 categories of health-risk behaviors among youth Tobacco use Alcohol and other drugs Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases including	Youth risk behavior surveillance system (VRBSS) Monitors priority health risk behaviors that contribute substantially to leading causes of death, disability and

			HIV Unhealthy dietary behaviors Physical inactivity plus overweight	social problems among youth and adults
McClelland, Teplin & Abram/2004 U.S. Department of Justice Office of Justice Programs Office of Juvenile Justice and Delinquency Prevention Juvenile Justice Bulletin	Sampling and interviews between 11/1995 – 6/1998 Sample size 1829 1742 provided urine samples	Self report and urinalysis from Northwestern Juvenile Project Longitudinal study of high risk youth Diagnostic interview schedule for children designed to assess patterns (not used in past 2-3 days) Enzyme- Multiplied Immunoassa y Tests (EMIT) used to identify illicit drug use in subjects Some EMIT- 10 categories are not exact matches for self report Recent drug charges	Self report drug use (by drug) in past 6 months and lifetime use Urinalysis of drug use detecting use in past 2-3 days	High level of veracity for self reporting, specifically for cannabis Among those with positive urinalysis, 87.7% reported use in last 6 months; 94.1% for lifetime, nearly identical to overall figure Those for any other drug lower than cannabis With combo self report and urinalysis, 85.4% of detained youth had used some kind of illicit substance in past 6 months, 94% at some point in lifetime Self report without urinalysis overlooked at least 8.2% of detained youth

				who had used in the last 6 months Overlooked 1/3 – 1/4 of other drug use
Thornberry, Krohn & Freeman-Gallant/2006 Journal of Drug Issues	Rochester Youth development study and Rochester Intergenerational Study 1000 7 th and 8 th graders Over sampling of males and students residing in area with high resident arrest rate	Longitudinal study investigating drug use and other problem behaviors in children and adolescents Multiple interviews of adolescents and primary (mostly female) caregivers.	Self reports Substance use Use of individual substances over past 12 months Levels of frequency	Intergenerational continuity for generation 2 daughters, but not sons of 61 mothers Use by G3 is significantly influenced by both G2 and G1 grandmothers For children of G2 fathers, neither prior generation's substance use is significantly related to G3 use Non-resident fathers may have contributed Measures for each generation based on generation's report of current use
Harris, Gordon & Larsen/2006 Pediatrics & Adolescent Medicine	Nationally representative data for more than 14,000 adolescents enrolled in Wave 1 (1994-	Longitudinal regression models of data from school-based study using paper and	Racial/ethnic groups Age Diet Inactivity Obesity Tobacco use	Used repeat measures using data from Add Health to measure changes in usage of individual drugs

	1995) and Wave II (1996) of National Longitudinal Study of Adolescent Health	pencil questionnaire s in home interviews and computer assisted interviews	Substance use Binge drinking Violence Sexually transmitted disease Mental Health Health Care Access	Substance use and other indicators increase with age Exposure to violence decreases with age
Johnson, O'Malley, Bachman, Schulenberg/2008 Bethesda, MD: National Institute on Drug Abuse	American adolescents, college students, and adult through 45 2007 Sample size; 403 Secondary Schools; 16,500 8 th graders 16,400 10 th graders 15,100 12 th graders (48,000 total)	Long-term school based study Compares year to year (not repeat measures) Multiple questionnaire s	Individual measures of each drug Usage levels Perceived risk Disapproval of others Perceived availability	2006- 2007; 8 th grade reports lifetime use of any drug declined from 20.9% to 19% Past year use declined from 14.8% to 13.2% Marijuana use declined from 11.7% to 10.3% Disapproval up in 8 th graders Stable for 10 th and 12 th graders Referred to as monitoring the future (MTF).
Matsueda, Huizinga, Erosheva, Kreager, Callahan/2007 University of Washington (Sociology)	Denver Youth Survey National Youth Survey Add Health Survey	Varying statistical methods and models	Different forms of crime: Marijuana use Smoking Other drugs Alcohol Co-occurrence and crime within trajectory framework	Drugs and crime causally linked or related in more complex way Examines contextual factors, individual trajectories,

Appendix D

Summary of studies relating to violence and delinquent behaviors in adolescence and young adulthood

Author/Year	Sample	Methods	Variables	Major Findings
Resnick et al./1997 Journal of the American Medical Association	12,118 adolescents grades 7-12 drawn from initial national school survey of 90,118 adolescents from 80 high schools and their feeder middle schools	Cross sectional analysis of interview data from National Longitudinal Study of Adolescent Health	Emotional distress Suicidal thoughts and behaviors Violence Use of 3 substances (cigarettes, alcohol, and marijuana) 2 types of sexual behavior (age of sexual debut, pregnancy history) School context Family context Individual characteristics	Parent-family connectedness and perceived school connectedness were protective against every health risk behavior measure except pregnancy history Recent history of family suicide attempts or completions and access to guns in the home associated with increased violence
Herrenkohl, Hill, Chung, Guo, Abbott, Hawkins/2003 Social Work Research	Data from Seattle Social Development Project. Longitudinal study of 808 parents and students recruited from 18 Seattle public elementary	Surveys collected when youths 10, 15 and 18 years of age Survey self report from students Official school records	Childhood aggression Violence at age 18 Intervening protective and risk factors at age 15	Lower probability of violent behavior at age 18 was associated with attendance at religious services Good family management by parents Bonding to

	schools Children who exhibited high rates of aggression			school at age 15 Risk and protective factors
Claes, Lacourse, Ercolani, Pierro, Leone, Presaghi/2005 Journal of Youth and Adolescence	908 adolescents in Canada, France, and Italy with equivalent number of boys and girls in Grade 11	Adolescent self-report questionnaire	Parental bonding Parental supervision Parental tolerance Orientation toward peers Involvement in physically aggressive, antisocial behavior Non-physically aggressive, antisocial behavior Drug use	For both genders, statistical relationships were found to be more striking for the mother than the father Confirms the robustness of the role of parental functions as a protective factor against deviancy in late adolescents Indicates the association between parental bonding and involvement in deviant behavior is identical in both sexes Boys more oriented to peers and diverse forms of deviancy
Teplin, McClelland Abram, Mileusnic/200 5	Random sample 1829 youth; 1172 males, 657 females, aged 10-18	Calculation of mortality rates Deaths identified during contacts with	Deaths between 15-24 years of age Counts of death in comparison group Gender Age	65 youth died 95.5% deaths were homicides or legal interventions Among

Pediatrics	from intake at Cook County Juvenile Temporary Center, Chicago Stratified gender, race/ethnicity, legal status, age	participant's friends, family members and checking death records and National Death Index Cross Reference Comparison group of all persons in general population of Cook County, Illinois Non-parametric bootstrap methods	Race/ethnicity	homicides 93% were gunshot wounds Overall mortality rate was 4 times greater than the general population rate African American male youth was highest (887 deaths per 100,000 person per year) Females nearly 8 times higher As delinquent youth age they continue higher than average mortality rates
Rainone, Schmeidler, Frank, Smith/2006 Youth Violence and Juvenile Justice	14,977 in grades 7-12 from randomly selected sample of 136 public and private schools	Statewide school survey self administered 45 minute questionnaire	Alcohol and illegal drug use Delinquent behaviors Violence	Middle school scored higher on violence than substance use or delinquent behaviors High school scored high on substance use and delinquent behavior than violence Substance use increases throughout adolescence Delinquent behavior peaks

				mid to late adolescents Violence did not increase with grade level
Stafström/2007 Substance Abuse Treatment, Prevention, and Policy	1873 of 3847 9 th grade students in Sweden (abstainers omitted)	Logistic regression analyses of cross sectional data from school based survey from anonymous questionnaire	Alcohol related violence Frequency of binge drinking Frequency of drinking distilled spirits/full strength beer Usual volume of distilled spirits /full strength beer Sensation seeking behavior Parental Control and support Delinquency last year Parents' level of education Individual purchasing power	30.3 % of respondents reported experiencing alcohol-related violence; 265 one experience, 110 two experiences, 192 three or more Synergistic effect between binge drinking and delinquency Contradicts that aggressive behavior comes before Consumption of distilled spirits most related
Kliewer & Sullivan/ 2008 Journal of Clinical Child Adolescent Psychology	358 adolescents aged 9-16 and maternal caregivers who were part of a larger, longitudinal study of consequences of exposure to community	2 waves longitudinal interview Adolescent and maternal caregivers interviewed in the home by team of 2 interviewers Adolescents who passed reading	Quality of caregiver/adolescent relationship Adjustment problems Drug use Coping behavior Threat appraisals Violence exposure	New measure for threat appraisal is supported by validity data Threat appraisal has been shown to extend threat appraisal beyond personal safety to include concerns about loss, negative evaluation by

	<p>violence 45% Male 91.3% African American Participants recruited from high violence and poverty neighborhood s</p>	<p>screening completed several scales in a booklet unassociated Completed Social Competence Interview after being prompted to discuss witnessing or experiencing violence</p>		<p>others, and concern for others well being</p>
<p>Petras, Kellam, Brown, Muthén, Ialongo, Poduska/2008</p> <p>Drug Alcohol Dependence</p>	<p>768 students from 19 Baltimore City Public Schools who participated in a randomized study of a classroom management strategy targeting aggressive, disruptive behavior and socializing children Gender equally</p>	<p>Teacher reports of child aggressive disruptive behavior 3-4 schools matched and randomly assigned Repeated measures Records of violent and criminal behavior obtained at structural clinical interview at age 19-21 meeting Criteria for Antisocial Personality</p>	<p>Aggressive, disruptive meet Antisocial Personality Disorder criteria Aggressive, disruptive behavior Measure at 19-21 Self-reports Juvenile court and adult incarceration records Violent and criminal behavior</p>	<p>686 males showed lower rates of Antisocial Personality Disorder and violence and criminal behavior by young adulthood compared to controls in the high aggressive disruptive trajectory</p>

		Disorder analyzed with growth mixture modeling	.	
Karch et al./2009 National Violent Death Reporting System	CDC's National Violent Death Reporting System (NVDRS) Data from 16 states only; 15,395 violent deaths	Analyzes data collected from death certificates, coroner medical reports, law enforcement reports; multiple complementary data sources	250 unique variables (i.e. manner of death, demographics, location, date, time of injury/death, toxicology results, bodily injuries, precipitating circumstances, decedent suspect relationships, method of injury)	Violent deaths from self inflicted or interpersonal violence affected adults aged 20-54, males, and certain minorities disproportionately Homicides higher among males and persons aged 20-24; highest in non-Hispanic Black males 55.9% Suicides Homicide is second leading cause of death for people aged 15-24
Center for Disease Control and Prevention/2010	Taken from web-based statistics query and reporting system (WISQARS), National Center for Injury Prevention	Statistical analysis	Leading causes of death Homicide Non-fatal assaults Violent crime arrests	In 2005, homicide second leading cause of death among persons aged 10-24 Homicide rates consistently higher for non-Hispanic Blacks than all other

	and Control, and Federal Bureau of Investigation. Crimes in the United States, 2006			race/ethnicity from 1991-2005 Homicide rates for non-Hispanic Blacks declined from 62.6 to 32.8 per 100,000 The homicide rate for males aged 15-24 was 15.2 deaths per 100,000 The homicide rate for males aged 20-24 was 27.2 deaths per 100,000 Males aged 10- 24 non-fatal assault related injury rate was 1,807.1 per 100,000; For females 1,139.5 per 100, 000
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Appendix E

Summary of studies examining criminal justice system involvement in the United States and related variables

Author/Year	Sample	Methods	Variables	Major Findings
Olds et al./1998 Journal of American Medical Association	315 adolescent offspring born to white mothers	15 year follow-up of randomized trial Interviews with adolescent's biological mothers or custodial parents Received average of 9 home visits (range 0-16) during pregnancy and 23 home visits (range 0-59) from birth through child's 2 nd birthday Control group received standard prenatal and well child care	Children's self reports of running away Arrests Convictions Being sentenced to youth corrections Use of illegal substances School suspensions (school reports) Teacher reports of disruptive behavior Parent reports of children's arrests and behavioral problems relating to alcohol and other drugs	Children born to women who received nurse visits during pregnancy and postnatal (unmarried women of low socioeconomic status) reported fewer instances of running away, fewer arrests, fewer convictions and probation violations than the Comparison group Also less substance use Parents reported fewer behavioral problems related to drug and alcohol use
Paschall, Ornstein & Flewelling/2001 Journal of Research in	Cohort of African American male adolescents	Audiocassette-recorded questionnaires and audio-computer assisted self		Adolescents who reported contact with the criminal justice system were 5-15 times as

Crime and Delinquency		interviewing methods (ACASI) used to collect four rounds of self report data Juvenile and adult court records used as criterion measures		likely to have a court record as adolescents who did not report contact with the criminal justice system Predictive validity analyses indicated that adolescents who reported contact with the criminal justice system or delinquent behavior were twice as likely to have future court records as adolescents who did not report prior contact with the criminal justice system or delinquent behavior
Gilmore/2004 Global Lockdown: Gender, race and the prison-industrial complex	Descriptive case study of Mothers Reclaiming Our Children (ROC), Los Angeles, CA	Action research and case analysis of action research Grass roots organization formed by mothers around intensity with which the state	Methods of outreach Demographics International mother-activists Gender Race Class	Concern for sons by mother-activists Concerns for sons of all ages Consequences of criminal justice system involvement on families

		<p>was locking up their children of all ages into the criminal justice system</p> <p>The mission “to be seen, heard and felt in the interest of justice”</p> <p>Uses outreach</p>		<p>Illustrates effects of anxieties with example of influence on male gang member</p> <p>Power through “coordinated maternal practices”</p> <p>Made critical the activities of mothering, socially consequential.</p>
<p>Green, Ensminger, Robertson, Juon, Hee-Soon/2006</p> <p>Journal of Marriage and Family</p>	<p>1,242 recruited 625(92%)</p> <p>Provided complete data for present study</p> <p>Mothers asked whether anyone in their family had gone to jail or prison and if so, who.</p> <p>138 mothers reported having a son who had been incarcerated.</p> <p>10 mothers reported having a daughter; dropped those with girls</p>	<p>Longitudinal comparing mothers with and without adult sons who have been incarcerated</p> <p>3 mother interviews:</p> <p>1966-67 when focal child in 1st grade</p> <p>1975-76 when focal child an adolescent</p> <p>1997-98 when focal child a young adult</p> <p>Data from times 1 and 3 used</p>	<p>Recency of incarceration</p> <p>Psychological distress</p> <p>Financial difficulties</p> <p>Mothers parenting self appraisal</p> <p>Burden of caring for grandchildren</p> <p>Diminishing social ties</p> <p>SES (income, ed.)</p> <p>Early measures of psycho health</p> <p>Frequency of church attendance</p> <p>Person social ties</p>	<p>Recency of son’s incarceration is associated with the mother’s psychological distress at follow-up assessment</p> <p>Having a son incarcerated more recently and associated with more financial difficulties, less church attendance, weaker personal ties, worse parenting appraisals and a greater burden of caring for</p>

	615/138 mothers make up the population in present study		Church attendance	grand-children All mediators were associated with mothers psychological distress at follow-up assessment Zero support for personal or structural ties or parenting
Slade, Stuart, Salkever, Karakus, Green, Ialongo/2008 Drug Alcohol Dependence	780 young men aged 18-24 who were originally participants in a randomized trial of 2 school based prevention interventions	Propensity scoring used to estimate association between adolescent substance use disorders and rate of incarceration Data from follow-up interviews and search of prison information center analyzed to determine if participants met criteria for substance dependence or abuse disorders and age of onset	Substance use disorder indications Any lifetime incarceration Incarceration for substance related offenses Incarceration for non-substance related offenses Covariates	Onset of substance use disorder by age 16, but not later onset, was associated with fourfold risk of incarceration For substance use related offenses in early adulthood and more extensive involvement in the criminal justice system
Warren, Gelb, Horowitz, Riordan/2008	Inmate counts from state DOC and	Analysis of mid-year 2006 rates from U.S.	Sex Ethnicity/race Age	US prison population in 2007 – 1.6%

Pew Public Safety Performance Project	federal government Prison and jail statistics Inmates at mid-year 2006 U.S. Bureau of Justice	Department of Justice	Health care costs Corrections personnel Corrections expenditures State	National Prison Census 1,596,127 Indicating slowed level of continued expansion 723,131 in local jails Total inmate count in 2008 – 2,319,258 1 in 99.1% adults Adult population estimate California spent 8.8 billion dollars from general fund; 216% increase over last 20 years Healthcare one of the principal cost drivers
Washburn, Teplin, Voss, Simon, Abram, McClelland/2008 Psychiatric Services: A journal of the American Psychiatric Association	Stratified random sample of 1,715 youths aged 10-18 who were arrested and detained in Chicago Stratified by gender, race/ethnicity, age and legal status	Interviewed for 2-3 hours within 2 days of intake; females interviewed females English and Spanish version of DISC – 2.3 Statistical analysis of	DSM III-R Disorders in past 6 months Psychosis ADHD PTSD (previous 13 months) Arrest charges Gender Age Race/ethnicity	Prevalence rates of co-morbid psychiatric disorders are as high or higher for youths processed in adult criminal court as for youths processed in juvenile court Transferred

		Cook County Juvenile Temporary Detention Center (Chicago)		youths have a higher need for psychiatric services than detained adults Disproportional representation of minority race/ethnic groups
Apel & Sweeten/ 2009 National Institute of Justice	Nationally representative 9,000 youth born between 1980-1984 National Longitudinal Survey of Youth 1997 (NLSY97) Incarceration: 823 convicted of a crime for the first time 1998-2002 Conviction: 1692 individuals arrested 1998- 2002 N=658 convicted	Self report information regarding criminal justice system involvement, employment, and education	3 types of criminal justice system sanctions: arrest, conviction, and incarceration Status attainment in emerging adulthood Labor supply Job quality Educational attainment	Incarceration has addressed impact on the likelihood of employment, particularly in the first year; mostly by non- participation Reduction in long term earnings Criminal Justice Sanctions: Associated with an increase in short term employment with long term erosion Associated with diminished formal schooling

Appendix F

Son Perception Scale

1. How close do you feel to your mother?
2. How much do you think she cares for you?
3. Most of the time, your mother is warm and loving towards you.
4. Your mother encourages you to be independent.
5. When you do something wrong your mother helps you understand why it is wrong.
6. You are satisfied with the way your mother and you communicate with each other.
7. Overall, you are satisfied with your relationship with your mother?

Appendix G

Mother Perception Scale

1. You get along well with him.
2. (your son) and you make decisions about his life together.
3. You just do not understand him.
4. You feel you can really trust him.
5. He interferes with your activities.
6. Overall, you are satisfied with your relationship (with son).

Appendix H

Substance Use Measures

1. During the past 30 days, how many times have you used marijuana?
2. During the past 30 days, how many times have you used any kind of cocaine?
3. During the past 30 days, how many times did you use other types of illegal drugs?
4. During the past two weeks, how many times did you have five or more drinks on a single occasion?
5. During the past 30 days, on how many days did you smoke cigarettes?

Appendix I

Serious and Violent Delinquency Scale

1. In the past 12 months, how often did use or threaten to use a weapon to get something from someone?
2. In the past 12 months, how often did you carry a handgun at school or work?
3. In the past 12 months, how often did you take part in a physical fight where a group of your friends were against another group?
4. In the past 12 months, how many times did you take part in a physical fight in which you were so badly injured that you were treated by a doctor or nurse?
5. In the past 12 months, how often did you hurt someone badly enough in a physical fight that he or she needed care from a doctor or nurse?
6. You pulled a knife or gun on someone.
7. You shot or stabbed someone.
8. In the past few months, how often did you damage property that did not belong to you?

9. In the past 12 months, how often did you steal something worth more than \$50.00?
10. In the past 12 months, how often did you go into a house or building to steal something?
11. In the past 12 months, how often did you sell marijuana or other drugs?
12. In the past 12 months, how often did you steal something worth less than \$50.00?