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# FACTORS INFLUENCING AMERICAN INDIAN ADOLESCENTS' ABSTENTION AND DESISTANCE FROM DRUG USAGE

By

Ruben Olegovich Pavlov
B.A., University of Louisville, 2003
M.S.S.W., University of Louisville, 2012

A Dissertation
Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Doctor of Philosophy
in Criminal Justice

Department of Criminal Justice
University of Louisville
Louisville, Kentucky

May 2022

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A Dissertation Approved on

April 22, 2022

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# DEDICATION

I dedicate this work to my Armenian grandfather Avag Garibovich Martirosyan (d. 1988) who survived the Armenian genocide. I will always remember your love for knowledge and learning. You are my inspiration.

ACKNOWLEDGEMENTS

I would like to thank my mentor and dissertation chair Dr. Viviana Andreescu for her oversight on this project and for guiding me for the last seven years. I honestly would have been lost without your calls and your emails. Thank you for setting me on the right path and keeping me on that path. You are simply the best.

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I thank my wife, children, parents, mother-in-law, and others who have offered me feedback and support during this entire time of my life, as well as providing many good times along the way.

ABSTRACT

FACTORS INFLUENCING AMERICAN INDIAN ADOLESCENTS' ABSTENTION AND DESISTANCE FROM DRUG USAGE

Ruben Olegovich Pavlov

April 22, 2022

Informed by Hirschi's (1969) social bond theory and by Gottfredson and Hirschi's (1990) general theory of crime (GTC), the proposed study intends to identify the factors more likely to differentiate drug-use desisters (i.e., adolescents who reported life-time usage, but did not report recent drug use) from those who never used drugs and from those who reported continuous use of drugs. The study is based on a quantitative analysis of survey data collected between 2009 and 2013 and obtained from a sample of American Indian (AI) adolescents, attending schools located on or near American Indian reservations. Although recent statistical information indicates that the risk of substance use is higher among AI subpopulation groups, recent analyses that identified the correlates of drug use among the subpopulation of AI adolescents are relatively sparse. Moreover, to the author's knowledge there are no studies that attempted to identify the characteristics of AI adolescents who succeeded to stop using illegal drugs. The dissertation contributes to the limited literature that focuses on an understudied population subgroup (AI adolescents) and provides a better understanding of the factors associated with variations in substance use among AI adolescents and plans to provide information that may be used when social

programs meant to prevent and reduce American Indian adolescents' substance use are designed. Different from prior research that focused on the risk factors associated with substance misuse in adolescence, this study attempts to highlight the individual-level that predict abstention and desistance from drug use. Results show that both boys and girls who did not report drug use are more likely to have high school attachment, are more likely to be monitored by parents, and tend to be younger. Additionally, abstainers are less likely to have delinquent friends and a lower level of self-control. Different from what has been hypothesized, male and female AI adolescents who did not report lifetime or recent drug use tend to have a lower level of family attachment than their counterparts who use drugs. Compared to those who continued to use drugs, male and female adolescents who ceased using drugs associate significantly less with delinquent peers. Additionally, adolescent boys who desisted from drug use are more likely to report higher levels of school attachment, parental monitoring, and self-control than their male counterparts who continued to use drugs. The implications of the findings as well as the study limitations are further discussed, and recommendations for future research are presented.

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# CHAPTER I

# INTRODUCTION

Illicit drug use and abuse in adolescence is a serious and costly societal problem, which has negative consequences on adolescents' health and their behavioral outcomes. Every year in the United States, approximately 4.2 million adolescents between the ages 12 and 17 and nearly 13.2 million young adults between the ages of 18 and 25 use illicit drugs (Substance Abuse and Mental Health Services Administration, 2019). A decade ago, a study conducted on a large nationally representative sample of adolescents aged 13 to 18 years, found that four out of ten adolescents reported lifetime drug use and 16.4% reported illicit drug abuse. For drug abuse with dependence, the median age at onset was 14 years (Swendsen et al., 2012). Although recent data show a decline in alcohol and drug consumption among adolescents, certain subpopulation groups continue to be disproportionally affected by substance misuse (Johnston et al., 2021).

Many illegal drugs are altering the activity of neurotransmitters and hormones, changing the status and function of the nervous and endocrine systems (Hanson et al., 2018). Drugs influence mental states by modifying the chemical messages of the neurotransmitters in the brain, and some drugs alter endocrine functioning. While certain drugs, like benzodiazepines, may relieve anxiety and stress due to their depressant effects on the central nervous system, other drugs such as amphetamines and cocaine are

considered major stimulants that increase alertness, excitation, and euphoria (Hanson et al., 2018).

Research shows that drug misuse has many negative effects on users, especially on young users. Adolescent drug users are more likely to report early sexual activity (i.e., having intercourse before age 15) and involvement in risky sexual behavior (i.e., unprotected sex), which may lead to unplanned pregnancies and sexually transmitted diseases, including HIV infections (Hanson et al., 2018). Zapata, Hillis, Marchbanks, Curtis, and Lowry (2008), for instance, found significant positive associations between methamphetamine use and early sexual activity, ever being pregnant or getting someone pregnant. Anderson and Mueller (2008) found that compared to abstainers, adolescent drug users were more likely to report being sexually active and engaging in unprotected sex.

Drug use not only affects the user but has negative consequences on society at large as well. McKeganey, Barnard, and McIntosh (2002) found that material deprivation and neglect, exposure to drug and drug dealing, the risk of physical abuse and violence, exposure to criminal behavior, and family break-up are negative consequences of excessive drug use. Substance use also negatively affects the workplace through lost productivity, workplace accidents, employee absenteeism, and increased illness. Moreover, there is also a long-established close association between drug abuse and criminality. Approximately 60% of individuals arrested for most types of crimes tested positive for illegal drugs at arrest (Hanson et al., 2018).

Recent statistical information provided by the *National Survey on Drug Use and Health* (NSDUH), which collects data from a nationally representative sample of American adolescents indicates that a substantial segment of the youth population is involved in

substance misuse. Results have shown that among those age 12-17 years old, 12.5% were past year users of marijuana (SAMHSA, 2019). Johnston et al. (2019) found that 16.3% of the students in the 8th, 10th, and 12th grades had reported using an illicit drug in the past month. Furthermore, there has been some increase since 2016 among 8th and 10th graders in the annual prevalence of illicit drug use. Overall, results reveal that while use of individual drugs may fluctuate widely, the proportion of adolescents using any of them is much more stable.

Studies examining illicit drug use among adolescents show inter-group variations when the race/ethnicity of the users is taken into the account. Young and Joe (2009) who reviewed the literature that examined rates of illicit drug use among adolescents concluded that among adolescents 12 to 17 years old, AI youth had higher rates for past month marijuana use and had higher lifetime rates of cocaine usage than adolescents belonging to other racial/ethnic groups. For instance, the 2007 SAMHSA report found that 18.4% of American Indians (AIs) aged 12 years or older used illicit drugs at least once in the past year, while nationally, the corresponding percentage was lower (14.6%). AI youth were also almost twice more likely to report an illicit drug use disorder (5.0% vs. 2.9%, nationally) (Dennis & Momper, 2012). Chen et al. (2012) also found considerable inter-group variation in reported rates of illicit drug use. For example, while Asian adolescents had the lowest rate (3.6%), American Indians (9.5%) had drug use rates almost three times higher. Furthermore, among females, American Indians had the highest risk (11.5%) of drug-related problems.

Moreover, Banks et al.'s (2017) study based on data from the 2011-2014 *National Survey on Drug Use and Health* reached a similar conclusion. When examining drug usage

among adolescents (age 12-18), researchers found that American Indian (AI) youth tend to report higher rates of marijuana use than White adolescents. The same study also found that AI adolescents have an increased risk for cigarette use and a higher risk of adverse health consequences. Hanson et al. (2022) reported that illicit drug use in 2015 varied from 9.2% among Asian adolescents to 23.6% among American Indians or Alaska Natives. Eitle and Eitle (2018) also concluded that among various racial/ethnic groups AI adolescents had the highest prevalence rate of past year drug use. Furthermore, research found that reservation-based AI youths have a higher risk of alcohol and drug use than AI adolescents who do not live on reservations (Swaim & Stanley, 2018).

In summary, a multitude of studies conducted during the past decade identified a higher prevalence of substance misuse among American Indian adolescents than in other racial/ethnic groups of adolescents. However, the number of recent studies exploring the correlates of illegal drug use among American Indian adolescents is limited. Moreover, most studies focusing on American Indian substance use have often employed surveys based on a single reservation or tribe (Akins et al., 2003). Yet there is considerable cultural variation among the Native American tribes (Beauvais et al., 2004) and the generalizability of the findings may be affected. By analyzing data from a relatively large sample of AI adolescents (N= 3,380) who attended schools on or near reservations in five US regions, the current study will be able to overcome the aforementioned limitation.

The aim of the current dissertation is to reduce the apparent gap in the literature and bring awareness not only of the factors that predict American Indian adolescents' drug use, but also of those that predict abstinence and desistance from drug usage. Social bond theory (Hirschi, 1969) and the general theory of crime (Gottfredson & Hirschi, 1990), as well as

the literature focusing on delinquent behavior indicate that strong social bonds in adolescence to informal institutions of social control and high self-control levels act as delinquency-protective factors. Theoretically informed by these two control theories (Gottfredson & Hirschi, 1990; Hirschi, 1969), the proposed study intends to determine if the same correlates of abstinence from drug use, for instance, appear to predict the cessation of drug use. It is anticipated that individuals with strong bonds to family and school and those with a high self-control will be more likely to report desistance from drug usage.

# CHAPTER II

# AMERICAN INDIAN YOUTH'S SOCIAL PROBLEMS

The brief review of recent statistical information showed that American Indian youth have higher prevalence rates of substance misuse than youth belonging to other racial/ethnic groups in the United States. Yet, even if comparative research based on self-reports generally indicates that the prevalence of alcohol and drug use is higher among AI/AN adolescents (Banks et al., 2017; Chen et al., 2012; Dennis & Momper, 2012; Eitle & Eitle, 2018; Johnston et al., 2021), most of the reviewed studies did not control for additional factors that might have influenced inter-group differences in substance misuse. In order to better understand why this might be the case, it is important to highlight some of the special circumstances that have shaped the lives of the AI youth and increased their risk of problematic behavior. As Pridemore (2004) noted, while the cultures, traditions, and spiritualities of Native American tribes provide unique protective factors against one's involvement in risky behavior, "[t]he social and economic conditions faced by much of the Native American population, as well as the history and treatment of Native Americans in our society, create many risk factors for criminal offending" (p. 45).

There are currently almost ten million American Indian and Alaska Native (AI/AN) people living in the United States, representing 2.9% of the total US population (U.S. Census, 2021). According to the National Congress of American Indians (NCAI) (2019), there are 573 federally recognized AI/AN tribes in the US. These tribes represent a great diversity of cultures, traditions, and sovereign power. In general, there is significant

heterogeneity among American Indians based on residential patterns, blood quantum, cultural identity, and tribal-specific factors (Hawkins et al., 2004). Yet, while tribal communities are diverse, Native Americans share a traumatic history of eradication, relocation, cultural assimilation, and the termination of their self-governance. Several scholars refer to "historical trauma" as a construct used to describe the impact of colonization, cultural suppression, and historical oppression of Indigenous peoples in North America (Kirmayer et al., 2014). Brave Heart (1999), a Native American scholar, defines historical trauma as a "cumulative emotional and psychological wounding over the lifespan and across generations, emanating from massive group trauma" and contends that it is accompanied by "historical unresolved grief" (p. 110). Brave Heart argues that self-destructive behavior, including substance abuse is one of the multiple responses to historical trauma (Brave Heart, 1999). According to Brave Heart and DeBruyn (1998, p. 56),

> American Indians experienced massive losses of lives, land, and culture from European contact and colonization resulting in a long legacy of chronic trauma and unresolved grief across generations. This phenomenon, labeled historical unresolved grief, contributes to the current social pathology of high rates of suicide, homicide, domestic violence, child abuse, alcoholism, and other social problems among American Indians.

Kirmayer et al. (2014), however, contends that "persistent suffering of Indigenous peoples in the Americas reflects not so much past trauma as ongoing structural violence" (p. 299). Nonetheless, despite conceptual disagreements, factual data show that American Indian children and adolescents are affected the most by the social maladies that

characterize tribal communities. About 29% of AI/AN persons are youth under the age of eighteen (NCAI, 2019) and most of them experience a wide range of social problems (Rees et al., 2014), which without any doubt impact the AI/AN youth's behavioral outcomes, including substance misuse.

Over 25% of AI/AN children and adolescents live in poverty and in communities with limited access to social safety net services. They are more likely to experience physical and mental health problems and about 22% of AI/AN youth display symptoms of Post-Traumatic Stress Disorder (PTSD), a rate that surpasses the incidence of PTSD among Afghanistan, Iraq, and Persian Gulf veterans (National Congress of American Indians, 2019). According to Kulis et al. (2013), AI adolescents who reported higher rates of substance use were more likely to report mental health problems, suicidality, risky sexual behavior, and violent offending. In 2017, American Indian teenagers had the highest suicide rates (28.8 per 100,000 for males; 10.2 per 100,000 for females) among all racial/ethnic groups age 15-19 years old (Child Trends, 2019). In 2015, AI youth had the second largest victimization rate among all ethnic/racial youth groups. These victimization rates were eight times higher than the victimization rates corresponding to Asian youth and 1.5 times higher than victimization rates for non-Hispanic White adolescents (U.S. Department of Health and Human Services, 2017).

The family and the school, the main socializing institutions in our society seem to have failed AI children as well. In the family, American Indian children are facing a "dual deficit" because they are subjected to higher levels of family disruption, out-of-home placements and foster care, and are more likely to experience childhood maltreatment and neglect (Turanovic & Pratt, 2017, p. 1335). Several scholars argue that, in part, the legacy

of the past is responsible for the familial problems many American Indian youth are currently experiencing. As Pridemore noted in his review of the literature, as a result of the federal policies that between 1868 and 1950 forcibly removed Indian children from their homes and placed them in boarding schools, generations of Native American parents could not acquire the necessary parenting skills because they lacked proper role models. Moreover, it is argued that this forced assimilation also negated several protective factors that were a part of many traditional Native American cultures, such as the importance of extended families and reliance on the tribal members (Pridemore, 2004, pp. 47-48). While most European American values emphasize individual success and achievement, American Indian cultural values promote respect, sharing, and non-competitive interactions (Whitbeck et al., 2002).

Additionally, it is also argued that American Indians' isolation and segregation, as well as high poverty levels that plague many tribal communities limited the youth's exposure to positive role models and pro-social opportunities (Pridemore, 2004). Recent research indicates that many AI/AN students experienced unfavorable learning conditions and contexts, as well as unjust educational policies and discriminatory practices that negatively affected their educational outcomes (Nganga et al., 2019). According to the *Native Youth Report* issued by the White House, in 2014, for instance, the high-school graduation rate for AI/AN students (67%) was the lowest of any racial/ethnic group across all schools (Reyhner & Eder, 2017). Based on American Community Survey (ACS) data, in 2014, the percentage of AI/AN youth who were high-school dropouts (11.5%), was almost twice higher than the status dropout rate (6.3%) for all 16- to 24-year-olds in the country (McFarland et al., 2018). Research, however, shows that many AI students give up

school because they find the curricula irrelevant or culturally insensitive and also because they face discriminatory disciplinary practices in the public schools, they are more likely to attend (Reyhner & Elder, 2017).

In sum, reviews of the literature (Szlemko et al., 2006; Vaeth et al., 2017) that tried to explain disparities in alcohol and drug use between AI adolescents and youth belonging to other racial/ethnic groups contended that cumulative historical trauma, racial discrimination, forced cultural assimilation processes, and governmental policies that caused family disruption contributed directly and indirectly to the higher prevalence in AI communities of risk factors generally associated with substance misuse (e.g., persistent socioeconomic disadvantage, low academic achievement, family history of abuse, association with delinquent peers, etc.) (Andreescu & Overstreet, 2020). For instance, research shows that AI youth who do not do well in school, who do not strongly identify with the American Indian culture, and who come from families who also abuse substances are more likely to abuse drugs (Moran & Reaman, 2002). As Andreescu and Overstreet (2020) noted, even if there is limited evidence suggesting that cultural factors may prevent risky and illegal behavior (Beauvais, 1998; Swaim & Stanley, 2018; Whitesell et al., 2014), it should be known that "tribal beliefs and values are almost universal in that they prohibit drug or alcohol use as well as violence toward others" (Szlemko et al., 2006, p. 444).

# CHAPTER III
# THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The proposed study will be informed by the social bond theory (Hirschi, 1969) and the general theory of crime (Gottfredson & Hirschi, 1990). Both theories are part of the control perspective, which is one of the oldest and most popular paradigms used to explain delinquency and crime. Rooted in the classical school of criminology, the control perspective assumes that people are fundamentally "selfish pleasure seekers" and that the desire to commit crime is natural to all human beings. According to control theorists, what needs to be explained is not why some people commit crime, but why most individuals resist criminal temptation (Miller et al., 2015, pp. 140-141). As Hirschi (1969) noted, "The question remains, why do men obey the rules of society? Deviance is taken for granted; conformity must be explained" (p. 10).

## Social Bond Theory

In his book *Causes of Delinquency*, published more than five decades ago, Hirschi integrated the ideas of early control theorists and presented a complete theoretical development, conceptualization, operationalization, and empirical test of his theory. Hirschi's (1969) control theory is considered now the "definitive social control model" (Miller et al., 2015, p. 141). One of the most frequently tested theories of delinquency and

crime, Hirschi's (1969) version of social control theory will be used in this study to better understand the processes conducive to adolescents' differential involvement in drug use.

Hirschi's social control theory, also known as the social bond theory, considers that strong ties to informal institutions of social control, such as the family and school, are effective means to prevent delinquency and crime in childhood and adolescence (Hirschi, 1969). According to Hirschi, social bonds represent the humans' connectedness to society and act as barriers to opportunities for delinquency and crime as well as restraints. In Hirschi's view, those who break the law are not socialized into delinquency and crime, as other theories would argue, but are *undersocialized* into conformity (Hirschi, 1969).

Hirschi identified four elements of the social bonds (1) attachment, (2) commitment, (3) involvement, (4) and belief. *Attachment* can be defined as the emotional closeness or one's feelings of sensitivity and affection for others. For children and adolescents, the bond of attachment refers mainly to the connection they have with important agents of socialization such as parents and teachers. When children and adolescents feel close to their parents and/or their teachers, they are more likely to respect them, and they are more likely to play by the rules. In addition to attachment to parents, Hirschi (1969) believed that school attachment provided additional stability in the adolescent's life. Hirschi found that weak attachment to school (e.g., low grades and poor school performance; poor school attendance) is associated with a higher risk of partaking in deviant acts.

Those with strong bonds of attachment care about what other people think about them and do not want to risk disappointing those who matter in their lives. Yet, when individuals disregard the expectations of others, there is nothing that would restrain them

from committing delinquent acts. In Hirschi's (1969) view, attachment is more like an "internal parent" and people with strong attachment to family and school may not require constant monitoring and observation because they have the inner capacity to resist temptations and avoid involvement in delinquent acts. Therefore, indirectly, attachment would act as a crime deterrent.

The second of Hirschi's (1969) social bonds, *commitment*, was defined as youths' stake in conformity towards conventional social order. Commitment refers to a youth's aspirations for attending college and obtaining meaningful employment. Commitment may be seen as the rational element of the social bond, as a component based on a cost-benefit estimation of one's involvement in delinquency and crime, which would restrict one's educational and occupational aspirations.

Hirschi (1969) defined commitment as the degree to which the individual's self-interest has been invested in hard work, high school achievements, and establishing a good reputation. The committed adolescent is a person who feels it is important to pursue goals that are socially approved and relevant to the future. According to Hirschi (1969), delinquents do not value the rewards society proposes and do not invest much time and energy in the conventional social order. For those who lack conformity to societal rules, the costs of crime are perceived as being low and the consequences of criminal behavior are irrelevant because these individuals have little to lose.

The third component of the social bond is involvement. *Involvement* refers to one's participation in conventional activities, such as spending time on schoolwork and obtaining good grades, as well as practicing sports, being involved in church groups or in other prosocial activities that are generally supervised by adults. It is the element of the bond that

takes into account the effect of time as a potential restraining factor. Hirschi (1969) argued that adolescents involved in structured conventional activities would have no time to engage in criminal activities. Thus, structured activities that are organized and supervised by adults lead to prosocial conduct. On the other hand, involvement in unstructured activities that are unsupervised may increase an individual's delinquency risk (Hirschi, 1969).

The fourth component of the social bond is *belief*. Belief refers to one's respect for societal rules and moral values. As Hirschi (1969) noted, belief depends on the strength of attachment and allegiance to conventional laws and rules. If wayward youths are not socialized properly into conventional beliefs, their respect for the rule of law is weak. They become involved in crime because they fail to internalize conventional beliefs to the degree needed to prevent them from allegiance to the criminal culture (Hirschi, 1969).

In summary, the basic idea of Hirschi's (1969) social control theory is that in the absence of ties to conventional institutions of social control, deviance would occur. Hirschi (1969) argued that lower the social bonds (i.e., attachment, commitment, involvement, and belief) to childhood/adolescence institutions of informal social control (family, school, and pro-social peer groups), higher the probability of delinquency involvement will be. Conversely, children and adolescents with strong social bonds, characterized by strong attachment and commitment to family and school or to "conventional others" as Hirschi (1969) specified, will be less likely to engage in delinquency, including illegal drug use. Following is presented a summary review of research studies that provided empirical testing of Hirschi's (1969) theoretical tenets.

## Empirical tests of the social bond theory: Adolescent substance use

Since its formulation in 1969, social bond theory has generated a substantial amount of empirical testing. And for the most part, empirical research found strong support for the theory, confirming that the strength of social bonds does influence one's involvement in delinquency and crime (Costello & Vowell, 1999; Matsueda & Anderson, 1998; Wells & Rankin, 1988), including drug use (Agnew, 1993; Cernkovich & Giordano, 1992). Moreover, based on his review of the literature, Schroeder (2015, p. 224) noted, that research did not identify gender- or race-based differences when the effects of social bonds on behavioral outcomes were examined.

### *Family*

The family is the primary agent of socialization in contemporary society and, from the social bond perspective, it is essential to examine the strength of the parent – child bond, which research showed is critical in determining various developmental outcomes, including delinquency and criminal offending (see Schroeder, 2015). According to Hirschi (1969), delinquency will be low in families with strong affective ties, because juveniles who are strongly attached to their parents are more likely to care about the normative expectations of their parents, which will offer protection against delinquent impulses (Hoeve et al, 2012, p. 771). Research conducted on samples of adolescents generally found that strong affective ties between adolescents and their parents tend to reduce the adolescents' deviance and/or delinquent behavior. Hoeve et al.'s (2012) multilevel meta-analysis of 63 independent studies that focused on a total of 55,537 subjects concluded that there is a significant positive link between poor attachment to parents and delinquency in boys and girls. Although the overall mean effect size was small to moderate (i. e., r = .18)

and there was significant heterogeneity in findings, most studies included in the analysis found a significant association between the parenting variables and delinquency.

Despite inconsistencies, most studies that examined the effects of parental bonds on adolescents' drug use also contended that low attachment to parents is more likely to predict drug misuse. Ford (2009), for example, used a nationally representative sample of youth aged 12 to 17 (N =55,905) to establish the impact of social bonds to family on nonmedical prescription drug use among adolescents. The study confirmed that adolescents with strong bonds to family are less likely to report nonmedical prescription drug use. Ford (2009) argued that a strong bond to parents makes substance use less likely because youth do value their close relationship with parents and believe that substance use will destroy these special relations. Bahr et al. (1998), also concluded that when the parent-child bonds are strong, adolescents are significantly less likely to use various drugs. And several other studies that explored the effect of attachment to parents on substance misuse reached similar conclusions (Bahr et al., 2005; Barfield-Cottledge, 2015; Farrell & White, 1998; Hart & Mueller, 2013; Hay et al., 2013; HeavyRunner-Rioux & Hollist, 2010; Henry, 2008; Kim et al., 2010; Krohn et al., 1983; Özbay & Özcan, 2006; Peterson et al., 2010; Williams & Smith, 1993).

Yet, while a relatively large number of studies found that adolescents who are attached to parents are less likely to engage in drug experimentation and/or use regularly illegal drugs, exceptions do exist. Using data from a large random sample of adolescents (N = 13,250), Bahr et al. (1995) for instance, found that mother-adolescent bonding had only a modest indirect effect on adolescent drug use, and that the effect of father-adolescent bonding on drug use was relatively weak. There were no gender differences when the

influence of parental bonding on the usage of three types of drugs was examined (Bahr et al., 1995).

In a three-year cohort study that included adolescents from a large metropolitan area in the Midwest, Hoffman and Su (1998) also found that family attachment had no significant direct effects on drug use. Similarly, Schroeder and Ford (2012) found that parental bonds did not significantly predict marijuana or other illicit drug use. Specifically, adolescents with strong parental bonds were equally likely to use marijuana or other illicit drugs as were adolescents with weak parental bonds. Additionally, when controlling for social learning theoretical concepts, Norman and Ford (2015) found that having strong attachments to family did not predict ecstasy use in a national sample of adolescents. However, the effect of parental bonds was significant and negatively related to ecstasy use before the introduction of the social learning variables in the model. In sum, although the findings of studies that explored the relationship between parental bonds or family attachment and adolescent substance use are not always consistent, the majority of the studies reviewed indicate that adolescents with strong bonds to their parents are significantly less likely to use drugs.

***School***

In addition to family, the school is generally recognized as the second most important agent of socialization for children and there is strong evidence that the school is one of the most important prosocial units (Chan et al., 2017). For instance, Hart and Mueller (2013) tested the relationship between bonds to school (i. e., attachment to school, commitment to sport activities, commitment to non-sport activities, involvement, and beliefs) and school delinquency. The study utilized a nationally representative sample of

10th graders (N =11,758) from the 2002 Education Longitudinal Study. Among the general findings, parental involvement and bonds to school had a negative significant relationship with school delinquency. For boys, stronger bonds to school appeared to be the most influential factor in combating school delinquency. For girls, results suggested that stronger bonds to school were also significantly linked to lower levels of school delinquency.

Stewart (2003) used a nationally representative sample of high school students (N=10,578) to examine the extent to which individual- and school-level factors explain variation in school misbehavior. The study findings indicate that higher levels of school attachment, school commitment, and belief in school rules are significantly associated with lower levels of misbehavior in school. Stewart (2003) found that belief in school rules was the strongest of the four social-bond predictors, followed by school attachment and school commitment.

Additionally, several other studies found a negative significant relationship between school attachment and delinquent behavior (Cernkovich & Giordano, 1992; Hay et al., 2013; Henry, 2008; Kalu et al., 2020; Li, 2004; Özbay & Özcan, 2006; Payne, 2008). Moreover, a meta-analysis of 87 experimental and quasi-experimental studies that evaluated school-based delinquency prevention programs found convincing evidence that positive changes in attachment and commitment to school resulting from the preventive interventions were consistently accompanied by positive changes in problem behavior (Najaka et al., 2001).

Studies that focused on drug use among adolescents generally concluded that various elements of the social bond, such as school attachment and commitment, and involvement in pro-social activities act as substance-misuse deterrents. Bahr et al. (2005),

for instance, found that attachment and commitment to school have significant negative direct and indirect effects on drug use. Similar findings were produced by additional studies that examined the effects of one's attachment to school on delinquent behavior, including drug use. For example, Dornbusch et al. (2001) conducted a longitudinal assessment that used a national probability sample of 13,568 adolescents in the 7th grade through the 12th grade. The authors studied whether attachment to the family and to the school predicted decreases in five forms of adolescent deviance. With the Wave 1 (1995) and Wave 2 (1996) of data, the study used cigarette smoking, alcohol use, marijuana use, delinquency, and violent behavior and examined the overall level, prevalence, and frequency of each problem behavior. Results indicated that the adolescent's attachments to the family and school tended to reduce the prevalence, intensity, and overall frequency of substance use, delinquency, and violent behaviors. The research indicated that the pattern of relations between measures of attachment and measures of deviance was not affected by differences in community type, gender, or ethnicity.

Henry and Slater (2007) tested 4,216 male and female students from middle or junior high schools across the United States. The study examined the effect on drug use of self-assessed school attachment, as well as the contextual level of school attachment. The authors noted that school attachment was a protective factor with respect to youth's substance use. Similarly, Kulis et al. (2002) found that American Indian students' academic achievement, a variable frequently used as an indicator of school attachment, was the strongest predictor of drug use. The better students performed in school as measured by grades, the stronger their adherence to antidrug personal norms were. Likewise, Nguyen

(2021) found that social bonds to school have deterrent effects on marijuana use among adolescents.

Commitment to school and to high moral standards had also been found to be correlated with drug use in Nagasawa et al.'s study of a sample that included only Asian-American students. The study results indicate that youths who adopt higher moral values and relate positively to school are less likely to use drugs than are youths who have lower moral standard and relate less positively to school, respectively (Nagasawa et al., 2000). Additionally, Kostelecky (2005) found that commitment to school and academic attainment were significant protective factors when it comes to substance use.

While a strong connectedness to school has been linked to reduced risk of adolescent drug use in other studies as well (Chan et al., 2017; Farrell & White, 1998; Ford, 2009; Galaif & Newcomb, 1999; Kalu et al., 2020; Tibbetts & Whittimore, 2002), exceptions do exist. Using a nationally representative sample of adolescents, Norman and Ford (2015) for instance, found that school attachment and a composite measure of conventional involvement that assessed one's participation in school-based, community-based, and faith-based groups, as well as in other activities (e.g., dance, piano, karate, or horseback riding) were both negatively and significantly associated with variations in ecstasy use only before social learning theoretical concepts were introduced in the statistical model. When controlling for social learning predictors, none of the social control measures continued to have a significant effect on ecstasy use.

***Peers***

In addition to family and school, the peer-group is an important socialization agent for children, particularly during adolescence. Although throughout his original

conceptualization of the social bond theory, “Hirschi (1969) repeatedly used the phrase ‘attachment to conventional others’ to stress that the normative orientation of others to whom one is bonded is important to the theory” (Schroeder, 2015, p. 231), explaining the impact of close ties to delinquent peers is still problematic for the bond theory. Nonetheless, Hirschi acknowledged the possibility that affective bonds can be formed with nonconventional others and recognized that those relationships can also control criminal behavior. Hirschi, however, argued that delinquent adolescents tend to associate with delinquent peers because they have a lot in common and that is why the delinquent peer effect is strong and significant in most research studies. Even if the debate continues, and research has not firmly established whether the delinquent peer effect on offending is due to selection or to causation, there is evidence of a reciprocal relationship between delinquent behavior and association with delinquent peers (see Schroeder, 2015 for a review).

Regarding substance misuse, a multitude of studies concluded that association with adolescent peers who use drugs is one of the strongest correlates of adolescent substance use (Bahr et al., 2005; Barfield-Cottledge, 2015; Chan et al., 2017; Farrell & White, 1998; Henry, 2008; Hwang & Akers, 2006; Marschall-Lévesque et al., 2014; Wills & Cleary, 1999). Based on their review of the literature, Sussman et al. (2007) also concluded that bonds to prosocial peers appear to have a drug-usage protective effect, while affiliation with substance using or antisocial peers has been linked to substance use.

Researchers also found that drug usage usually starts when adolescents associate with peers who use illicit drugs (Bauman & Ennett, 1994; Moon et al., 1999; Passarotti et al., 2015; Simons-Morton & Chen, 2006). Additionally, Passarotti et al. (2015) who

examined marijuana use trajectories within an adolescent cohort found that escalating marijuana use is mediated by peer influence. In sum, results of several longitudinal studies suggest that one's initiation into drug usage is a result of one's friendships with peers who were already drug users.

Studies that tried to determine if bonds to parents are more impactful than association with delinquent peers (i.e., drug users) produced mixed results. While Hwang and Akers (2006), for instance, found that the peers' influence on adolescents' decision to abstain or to use drug was stronger than the parents' influence, Kim et al. (2010), concluded that both parental and peer influences were equally strong and were significantly associated with adolescent substance use. Regarding gender effects, although prior research found that the delinquent peer influence on behavioral outcomes was stronger for male adolescents than it was for female adolescents (Piquero et al., 2005), several researchers concluded that both boys and girls who misused drugs were equally impacted by their association with delinquent peers who used drugs (Duncan et al., 2005; Weerman & Hoeve, 2012).

## The General Theory of Crime

As noted at the beginning of this chapter, the current study will be also informed by Gottfredson and Hirschi's (1990) self-control theory. In accordance with Gottfredson and Hirschi's (1990) claim that their theory would explain "all crime at all times" (Burt, 2015, p. 144), the theory is also known as the general theory of crime (GTC). Like Hirschi's (1969) social bond theory, GTC is rooted in classical criminology and shares "the view that saw crime as the natural consequence of unrestrained human tendencies to seek

pleasure and avoid pain" (Gottfredson & Hirschi, 1990, p. xiv). Yet, while invoking the hedonistic assumptions about human nature of the classical theory (Gibbs et al., 1998), Gottfredson and Hirschi (1990) also noted that they did not simply resurrect the classical model, which "tends to ignore the role of the family in crime causation" (p. xiv).

According to Gottfredson and Hirschi (1990), variation in the propensity to engage in crime and deviance is primarily a function of individual differences in self-control, which is conceptualized as a latent personality trait (Conner et al., 2009, p.137). Self-control would explain variations in behavior, including criminal acts, across time, gender, ethnicity, and crime types. Self-control refers to the individuals' ability to regulate emotions and thoughts based on cognitive factors, and their capacity to control impulses related to various environmental stressors. Gottfredson and Hirschi (1990) contended that "people who lack self-control will tend to be impulsive, insensitive, physical (as opposed to mental), risk-taking, short-sighted, and nonverbal, and they will tend therefore to engage in criminal and analogous acts" (p. 90). The authors also noted that self-control is a construct that is recognizable in childhood, prior to the age of accountability, and is stable throughout the life course. When opportunities for deviance or crime are present, low self-control would cause deviant and/or criminal behavior (Gottfredson & Hirschi, 1990).

According to Gottfredson and Hirschi's general theory of crime (GTC), "the major cause of low self-control appears to be ineffective child-rearing" (Gottfredson & Hirschi, 1990, p. 97). When parents recognize, monitor, and punish unruly behavior, children will control their impulses to misbehave. Conversely, children subjected to weak parental controls, will have a low level of self-control, will be unable to delay gratification, and will be more likely to engage in deviant and/or delinquent behavior (Pratt & Cullen, 2000). In

essence, self-control is the internalization of parental control. While, according to Gottfredson and Hirschi (1990) parents play an important role in the formation of self-control, in-school interventions can be equally effective. A recent meta-analysis that included 41 experimental studies that evaluated programs meant to improve the level of self-control of children 10 years old or younger concluded that self-control programs significantly improve a child/adolescent's self-control and also reduce delinquency (Piquero et al., 2016).

In summary, as Roussell and Omori (2016, p. 917) noted, Gottfredson and Hirschi (1990) favor a fixed trajectory of antisocial behavior (including drug use) for those with low self-control. Their theory suggests a divergence in behavior between those whose parents have instilled in them self-control by ages 8 to 10 and those who have not. Because GTC rejects the so-called age crime curve (Hirschi & Gottfredson, 2000), by the time of adolescence, the trajectories are relatively fixed.

## Empirical Tests of Self-Control Theory: Adolescent Drug Use

### *Low self-control*

Empirical tests of Gottfredson and Hirschi's (1990) theory found evidence that low self-control is significantly and positively related to involvement in deviant behavior, delinquency, and crime. Pratt and Cullen's (2000) meta-analysis shows strong empirical support for GTC. The study was based on 21 empirical studies published between 1993 and 1999 and contained 126 effect size estimates, representing the integration of 49,727 individual cases (Pratt & Cullen, 2000, p. 939). The authors concluded that, despite differences in the operationalization of self-control, as well as differences in model specifications, research design, or sample characteristics, self-control appears to be "one of the strongest known correlates of crime" (Pratt & Cullen 2000, p. 952). The authors also

determined that the mean effect size of self-control tends to be stronger in cross-sectional studies (Z = .260 vs. Z = .142 in longitudinal studies), in studies based on racially homogenous samples (Z = .281 vs .Z = .242 in racially integrated samples), in studies that included samples of adults (Z = .308 vs. Z = .169, juvenile samples), and in analyses based on female samples (Z = .573 vs. Z = .155, in male samples). Results also showed that low self-control tends to explain better variations in analogous behavior, such as drug use (Z = .352) than variations in general crime and delinquency (Z = .227) (Pratt & Cullen, 2000, p. 947).

A more recent meta-analysis that included a larger number of studies (N = 99) confirmed Pratt and Cullen's (2000) findings. Specifically, random effects mean correlation (Mr) between self-control and deviance was Mr=.415 for cross-sectional studies and Mr= .345 for longitudinal ones. Studies with more male participants, studies based on older or US-based populations, and self-report studies found weaker effects (Vazsonyi et al., 2017, p. 48). Although a large majority of studies documented a positive and significant relationship between low self-control and delinquent/criminal behavior, exceptions exist. For instance, when controlling for the social learning theoretical predictors, some studies based on cross-cultural samples found no significant relationship between self-control and delinquent behavior (e.g., Cheung & Cheung, 2008; Hwang & Akers, 2003; Meneses & Akers, 2010).

Although results are not always consistent, research studies that examined the effect of low self-control on substance misuse generally found empirical support for GTC's predictions. Using a sample of 598 college students, Tibbetts and Whittimore tested the interactive effects of school commitment and low self-control on binge drinking and drug

use. Results showed that students who had both low self-control and low commitment to school had significantly higher scores on substance abuse (Tibbetts & Whittimore, 2002).

Several longitudinal studies documented significant relationships between indicators of low self-control and drug use as well. Fergusson et al. (1993) found that low self-control and conduct problems at age 8 predicted the onset of marijuana use by age 15. Pedersen (1991) and Teichman et al. (1989) concluded that illicit substance use was more common among adolescents who sought thrills and new sensations, which are generally seen as indicators of low self-control (see Grasmick et al., 1993). Conner et al. (2009) conducted a longitudinal study based on a sample of 317 adolescent male offenders who were part of the Treatment Alternatives to Street Crime (TASC) programs implemented in five US cities in the 1990s. The authors found that those with a "volatile temper", one of the subscales of low self-control used in the study, were significantly more likely to report drug use, when interviewed six months after they entered the alternative-to-incarceration program for youth at risk. Conversely, a longitudinal study based on a nationally representative sample of adolescents found that adolescents with a high level of self-control were significantly less likely to report drug use (Chapple et al., 2005).

However, in an analysis that assessed the effect of low self-control on alcohol use in a sample of white and American Indian female adolescents, Andreescu (2019) found that when controlling for social learning theoretical predictors, self-control could not differentiate abstainers from alcohol users in the racially integrated sample and in the two subsamples differentiated by race. When examining the relationship between self-control and marijuana use among American and Bolivian college students, Meneses and Akers (2010) also did not find significant relationship between the two variables of interest, when

controlling for other theoretical predictors. Similar results (i.e., nonsignificant effect of low self-control) were obtained by Hwang and Akers (2003) in a study examining the correlates of substance misuse among Korean adolescents.

***Parental monitoring***

The role of parents as protective agents against adolescents' involvement in delinquency and crime has been explored extensively by researchers and prior studies generally found that adolescents who report parental supervision are less likely to commit delinquent acts. Specifically, a meta-analysis based on 161 studies completed between 1950 and 2007 found that active monitoring by parents had a relatively strong link to delinquency, with effect sizes varying from -.23 to -.31 (Hoeve et al., 2009).

Although results are not always consistent, several studies found evidence that parental monitoring deters adolescents from using alcohol and/or drugs (e.g., Chapple et al., 2005; Choquet et al., 2008; Farrell & White, 1998; Robertson et al., 2008; Villarreal & Nelson, 2018). Additionally, Tornay and colleagues concluded that parental monitoring was associated with a decreased risk of substance use among adolescents in Switzerland. The study utilized a large nationally representative sample of Swiss adolescents (N =7,611) from the *European School Project on Alcohol and Other Drugs* (ESPAD) survey. Furthermore, the protective effect of parental monitoring seemed to be strong enough to counterbalance the negative effect of peer pressure on adolescent substance use (Tornay et al., 2013). Furthermore, Krohn et al. (2019) who studied the role of effective parenting in relationship to the early onset of drug use, found that children monitored effectively by parents were less likely to report early onset substance use. Moreover, research suggests

that the positive effects of parental monitoring on adolescent substance use may be stronger for females than for males (Farrell & White, 1998; Webb et al., 2002).

Yet a recent study that examined various factors that differentiate alcohol users from abstainers in a sample of female adolescents found that when controlling for a set of predictors, parental monitoring had only a significant indirect negative effect on AI female adolescents' alcohol use (Andreescu, 2019). No significant direct or indirect effects of parental supervision on substance misuse (e.g., depressants or stimulants) were identified by Hwang and Akers (2006) in their analysis based on a sample of Korean adolescents. Additionally, Passarotti et al. (2015), who investigated the association between parental supervision and adolescent trajectories of marijuana use did not find a significant relationship between parental control and de-escalation of marijuana use. Moreover, a systematic review of 58 studies that focused on adolescents' drug use concluded that among studies that examined the effect of parental permissiveness on drug use, most of them (7 out of 10) did not find a significant relationship between the two variables (Petraitis et al., 1998). Nevertheless, Lac and Crano's (2009) meta-analysis of studies that estimated the effect of parental supervision on cannabis use found a statistically significant inverse relation between parental monitoring and adolescent marijuana use across 17 studies with more than 35,000 independent observations. The authors also noted that the association was significantly stronger in analyses based on female-only samples.

## Social Bonds, Self-Control, and Desistance from Delinquency in Adolescence

Although various definitions of desistance exist, desistance is generally "defined as a cessation or termination of criminal behavior" (Chu, 2007, p. 662). While Maruna (2001)

defines desistance as “the long-term abstinence from crime among individuals who had previously engaged in persistent patterns of criminal offending” (p. 26), other researchers expanded the definition of desistance and describe the process as a state of nonoffending that can be recorded in the life trajectories of those involved in delinquency and crime (Bushway et al., 2001; Fagan, 1989; Uggen & Kruttschnitt, 1998). Warr (1998), for instance, defines desisters as individuals who had reported using marijuana when first interviewed but did not report marijuana usage during the one-year period that preceded the second interview. Fagan (1989), however, defined desistance from family violence as “a process of reduction in the frequency and severity of family violence, leading to its eventual end when ‘true desistance’ or ‘quitting’ occurs” (p. 380). And Bushway et al. (2001) defined desistance as “the process of reduction in the rate of offending (understood conceptually as an estimate of criminality) from a nonzero level to a stable rate empirically indistinguishable from zero” (p. 500). Nonetheless, in most studies “desistance measures center on the discrete state of nonoffending, not on a gradual process that reduces the severity and frequency of offending behavior” (Chu, 2007, p.662).

Although little is known about the causal processes underlying desistance (Laub & Sampson, 2001; Piquero et al., 2003), one’s desistance from illegal and/or deviant behavior in adulthood has been examined frequently by criminologists. Yet the number of studies that focused exclusively on the correlates of desistance in adolescence is limited. Hirschi and Gottfredson (1983) “believed that the predictors of the onset of delinquency are similar to those of persistence and desistance from crime and that these parameters are all behavioral manifestations of one underlying construct (e.g., criminal propensity)” (Kazemian, 2007, p. 6). And Akers (1998) argued that "other than one's own prior deviant

behavior, the best single predictor of the onset, continuation, or desistance of delinquency is differential association with law-violating or norm-violating peers" (p. 164). Moreover, based on their analysis of data derived from the Pittsburgh Youth Study, Loeber et al. (1991) concluded that most factors that predicted involvement in crime, were also linked to desistance from crime and concluded that initiation and desistance from crime appear to reflect a similar process. Similarly, other studies reported that adolescent desisters and persisters have in childhood comparable individual and environmental risk factors but contended that desisters have risk profiles intermediate between persisters and non-offenders (Fergusson et al. 1996; Chung et al. 2002; Cottle et al. 2001). Accordingly, it seems reasonable to assume that factors such as social bonds to family and school, parental supervision, and self-control, which appear to deter adolescents from involvement in illegal activities, will also contribute to desistance from delinquent behavior, such as drug use. In sum, if for adult offenders, good-quality intimate relationships were found to have a 'distinct change-promoting influence', for juveniles, "parents and peers emerge as a probable context of desistance" (Sandøy, 2019, p. 581).

In a study that examined longitudinal data from the Pittsburgh Youth Study, Hoeve et al. (2008) found that parenting style influenced both persisting and desisting trajectories among boys. Specifically, the authors found that compared to serious and moderate persisters, desisters and nondelinquents were less likely to report neglectful parenting styles. Using the same data, van Domburgh et al. (2009) found that association with delinquent peers was one of the factors that discriminated adolescent boys classified as serious persisters from desisters. Compared to those classified as serious persisters, adolescent boys classified as desisters were more likely to be involved in family activities,

lived with both parents, in small families, and in good quality housing. Parenting style and measures that assessed one's attachment to school, such as academic achievement and positive attitude toward school, as well as one's personality traits were not able to discriminate desisters from those who reported continuous involvement in delinquent behavior. It should be noted, however, that findings were probably affected by a relatively small sample size (N = 275), which was subsequently divided into distinctive subgroups and by the fact that a large number of predictors were entered simultaneously in the estimated statistical models.

Another 5-year panel study that used a representative stratified sample of Korean adolescents, did not identify a direct significant relationship between parental attachment and a significant decrease in juvenile offending. Yet the study results showed a significant indirect effect of parental attachment on desistance from delinquent behavior via self-control. Results of the latent growth model indicate that juveniles within the desister group who had experienced strong parental attachment had higher levels of self-control, which in turn predicted a decreased likelihood of involvement in juvenile offending (Lee et al., 2020, p. 98).

The importance of social bonds to parents in the adolescents' desistance from drug use was documented by qualitative research as well. Sandøy interviewed 22 juvenile offenders, age 15-17, who were arrested for drug-related offenses in Norway. Most participants were arrested for minor cannabis-related offenses, while a minority were convicted of amphetamines and poly-drug use. All study participants were enrolled in an offender rehabilitation program. The author concluded that the young offenders raised similar desistance-related concerns across the interviews. For most interviewees, the family

stood out as the central context of change, parents playing a crucial role in the desistance process. As Sandøy (2019) noted, while "desistance, or a drug-free period/life, rarely came across as the objective" it was seen as "a means of restoring social bonds with parents" (p. 588). This assertion is consistent with the findings reported by Villeneuve et al. (2019), who conducted a scoping review of 26 quantitative and qualitative studies that examined processes of desistance from crime among serious juvenile offenders. As the authors noted, research indicates that the desistance process can be triggered by the fear of breaking significant bonds or damaging the adolescent's relationship with his/her parents (see Villeneuve et al., 2019, p. 482). Moreover, findings based on growth modeling analyses indicate that adolescents who reported parental monitoring were more likely to decrease substance use over time (Barnes et al., 2000; Curran et al., 2000; Curran et al., 1997; Wills et al., 2001).

Although less is known about the effects of school bonding on desistance from delinquency and crime, several researchers were able to document the existence of a link between school attachment and behavioral changes, including desistance from delinquent activities. In a two-year follow-up study of a community sample of boys (Pittsburgh Youth Study) in grades one, four, and seven when first interviewed, Loeber et al. (1991) found that among other factors, desistance was related to one's behavior and attitudes toward school. Specifically, those who reported no involvement in delinquent acts during the six months preceding the survey were more likely to have a low school suspension score and good educational achievement. Yet, as previously noted, van Domburgh et al.'s (2009) analysis based on the same data source shows that measures of attachment to school could

not discriminate desisters from those who reported persistent involvement in delinquent acts.

Using HLM growth curve models with data from a panel study based on a representative sample of students followed from age 14 to age 20, Bryant et al. (2003) identified a deceleration in marijuana use with an increase in academic achievement (i.e., reported GPA in the year preceding the survey). Conversely, an increase in school misbehavior (e.g., school suspensions; absenteeism; etc.) was significantly associated with an increase in marijuana use. However, school bonding (i.e., how much students enjoyed being in school during the year preceding the survey), did not impact significantly over-time variations in marijuana use.

**The Current Study**

Informed by two criminological theories of social control (social bond theory and self-control theory), the proposed study intends to identify the factors more likely to differentiate three groups of adolescents that vary in terms of illegal drug consumption (i.e., abstainers, desisters, and persisters). *Abstainers* are defined as persons who reported never using illegal drugs. *Desisters* are persons who used drugs in the past but did not report using drugs during the month preceding the survey. *Persisters* are those who report using drugs in the past and who were drug users when surveyed. While a multitude of studies explored the correlates of drug use and abuse among adolescents, the number of recent studies that focused exclusively on American Indian youth is relatively small. Moreover, as previously mentioned, the literature that explores desistance from delinquency and crime

during adolescence is limited and to the author's knowledge there are no studies that explored the correlates of desistance from drug use among AI adolescents.

In addition to the theoretical predictors (i.e., bonds to family, school, and delinquent peers; self-control and parental supervision) that are generally used when social bond and self-control theories are empirically tested, this analysis will control for the gender, age, and family structure effects. Prior research conducted on samples of adolescents had inconsistent results when male adolescents were compared to female adolescents in terms of substance use. For instance, in addition to the effect of race/ethnicity on variation in illegal substance use, Banks et al. (2017) also tried to determine if there are gender-based differences in substance misuse. The study used data from the 2011-2014 National Survey on Drug Use and Health that included a representative sample of adolescents ages 12-18 and concluded that, in general, male adolescents report higher rates of daily substance use than female adolescents. Similar findings were reported by Svensson (2003).

Yet Miller et al. (2012) who studied gender differences in drug use rates among AI youth reached a different conclusion. The American drug and alcohol surveys were administered to a sample of 7th and 12th graders (N =9,717), which included a sample of 4,536 boys and 4,942 girls enrolled in 130 schools. Results from the study indicated that females were more likely to have used inhalants than their male counterparts. Additionally, females were more likely to have used methamphetamine in the last 30 days compared to male youth. Finally, the study suggested that females may also be more vulnerable to drug-using peers than males. Similarly, Spear et al. (2005) found gender differences in use of marijuana among AI cohorts. Results indicated that the lifetime and the past-month timeframes use of marijuana was higher among AI girls than among AI boys. However,

other researchers did not find gender-based differences in drug use (Liu & Kaplan, 1999; Moon et al., 1999; Steinman and Hu, 2007; Zhang & Demant, 2021).

Moffitt (1993) noted that the relationship between age and antisocial behavior "is at once the most robust and least understood empirical observation in the field of criminology" (p. 675). The author referred to the fact that when official rates of crime are plotted against age, the rates for both prevalence and incidence of offending increase the most during adolescence, they peak sharply at about age 17, and drop dramatically in early adulthood (Moffitt, 1993). Yet findings are inconsistent when the effect of age on adolescents' drug use was examined. For instance, several studies concluded that drug usage increases with an increase in age (Akers & Lee, 1999; Chapple et al., 2005; Stanley et al., 2014), while other studies did not find age-related significant effects (e.g., Skeer et al., 2009).

Gottfredson and Hirschi (1990) argued that children with a high level of self - control are more likely to live with both biological parents. Following this argument, it could be expected that children/adolescents living in monoparental households would have a lower level of self-control because a single parent, which is usually the mother, would not have as many opportunities to monitor a child as two parents would have (see Gottfredson & Hirschi, 1990, p. 104). Consequently, children from single-parent families, would be expected to have a higher involvement in delinquency and crime. And in support of Gottfredson and Hirschi's (1990) predictions, the results of a recent systematic review of the literature indicate that adolescents growing up in single-parent families have indeed an elevated risk of involvement in crime (Kroese et al., 2021).

Although exceptions exist, studies that examined the effect of family structure on adolescent substance misuse also tend to show that adolescents from single-parent families have a higher risk of using alcohol and/or drugs. For instance, Barrett and Turner's (2006) findings, based on the analysis of a representative sample of young adults in South Florida, show that when controlling for race-ethnicity and gender, respondents who grew up in single-parent families reported "a significantly higher level of problematic substance use than those from mother-father families" (p. 109). Similar findings were reported by other researchers, who also found that adolescents who did not grow up in two-parent families were significantly more likely to engage in substance misuse (e.g., drinking, smoking, or using drugs) than youth who grew up in two-parent households (Andreescu, 2019; Brown & Rinelli, 2010; Hemovich et al., 2011). A study that examined cannabis use among adolescents in France found that boys and girls who grew up with both biological parents were significantly less likely to report drug use than those in single-parent families or adolescents from reconstructed families. However, the highest proportion of cannabis users was found in the subsamples of male and female adolescents who were living with one biological parent and one stepparent and not in the subsample of adolescents who grew up in single-parent families (Choquet et al., 2008). Yet other studies did not find that adolescents from single-parent families were significantly more likely to use illegal drugs than adolescents living with two parents (Skeer et al., 2009).

Additionally, researchers noted that the family structure per se might not be able to explain differences in adolescents' drug use if other factors, such as the adolescent's bonds to parents and school, as well as one's association with peers who are illicit drug users are not considered, as Bayly and Vasilenko's (2021) study results suggest. The authors

conducted a latent class analysis using data from the National Longitudinal Study of Adolescent to Adult Health, a large, nationally representative sample of adolescents in grades 7–12 in the United States and identified six latent classes that varied in terms of several characteristics, including different levels of risk for illicit drug use. While the latent class with the highest proportion of adolescents who reported at wave 1 illicit drug use included mostly adolescents from single-parent families (81%), the majority of the adolescents in this group also reported weak bonds to parents and school, they were more likely to have friends who used drugs, and they lived in poor and unsafe neighborhoods. Moreover, one of the groups identified as having a low risk for drug use included adolescents from single-parent families (83%). Most adolescents in this class, however, reported having a highly warm and involved parent, 80% of them did not have friends who used drugs, more than 70% of them reported attachment to school and teachers, and most of them reported living in safe and better-off neighborhoods. It is also worth noting that the second largest proportion of drug users could be found among adolescents who had both parents in their life (100%). Yet most adolescents in this latent class, which was identified as high risk for illicit drug use, reported not having warm parents (56%), felt teachers did not care about them (77%), and were more likely to have friends who used drugs (53%) (Bayly & Vasilenko, 2021, p. 360).

In accordance with the theoretical predictions and prior research findings, the following research hypotheses are proposed:

**Hypothesis 1:** It is hypothesized that AI adolescents who have stronger bonds to family and school and are less likely to associate with delinquent peers will be more

likely to report abstention from drug usage than AI adolescents who continue to use drugs.

**Hypothesis 2:** It is anticipated that those who ceased using drugs (desisters) are more likely to resemble drug-use abstainers (i.e., compared to drug users, they will have stronger bonds to family and school and will be less likely to associate with delinquent peers).

**Hypothesis 3**: It is hypothesized that AI adolescents who never used drugs or used drugs in the past, but not recently have a higher level of self-control than adolescents who continue to use drugs.

**Hypothesis 4:** It is hypothesized that the level of parental monitoring reported by AI adolescents who abstained or desisted from substance misuse is higher than the level of parental monitoring reported by adolescents who continued to use drugs.

It is also anticipated that one's age, gender, and family arrangements would differentiate AI adolescents who are abstainers or desisters from AI adolescents who reported recent and lifetime drug use (i.e., persisters).

# CHAPTER IV

# METHODOLOGY

## Data Source and Sampling Design

The source of the data is a large longitudinal epidemiological study conducted by researchers from Colorado State University (CSU) since the early 1990s until 2013 (Beauvais & Swaim, 2015). Included in the study were students attending schools on AI reservations or schools located in the proximity of AI reservations. Researchers obtained approval to conduct the study from tribe leaders and from the selected schools. Parental approval was also requested, and parents had the option to remove their children from the study. The students' participation in the study was voluntary. The survey was administered by school staff during regular class periods (Beauvais et al., 2008). Data access has been provided by the Inter-university Consortium for Political and Social Research (ICPSR).

The sampling frame consisted of schools with at least 20% AI students, who were representative of tribes from the major American Indian cultural/linguistic groups. The sample was stratified by region and the sampling scheme was based on a modified version of the geographic regions in which reservation-based American Indians reside. The number of schools surveyed every year, varied from eight to twelve. Although the sample was selected to represent the major AI language and cultural groups in the U.S., to respect the confidentiality and reputation of the communities participating in this research, students were not asked to identify the tribes they belonged to (Beauvais & Swaim, 2015).

The present study uses survey data collected between 2009 and 2013 from a sample (N= 5,744) of students (grades 7th to 12th) enrolled in 27 school districts located in five U.S. regions (Beauvais & Swaim, 2015). The present secondary analysis is based on a subsample of self-identified 3,380 American Indian students (1,708 male and 1,672 female), who were 12 years old or older (grades 7th to 12th), when the surveys were administered. Excluded from the analysis were cases with missing information on the respondent's gender (N= 118). Most respondents (51.6%) attended schools in the Northern Plains region. About 30.5% of the respondents went to school in the Southwest, while the rest of them were enrolled in schools in the Upper Great Lakes (11.1%), Southeast/Texas (3.5%), and Northeast (3.3%) regions.

## Measures

### *Dependent variable*

*Drug use* is the dependent variable used in this study. To form this variable, I used two sets of questions (i.e., 9 questions asked respondents *if they ever used* marijuana, uppers, cocaine, crack cocaine, LSD, other psychedelics, ecstasy, heroin, and methamphetamines; the second set of 9 questions asked respondents if they *used* any of the aforementioned *drugs during the month preceding the survey*.[1]Initial responses to these 18 questions were 'yes' or 'no'. Reliability analyses were conducted for an index that would measure the lifetime use and for an index that would measure current drug use. Reliability

[1] Hautala et al. (2019) examined onset and predictors of substance use disorders across the entire span of adolescence among a longitudinal sample (N=744) of North American Indigenous youth. The study indicated that prior research with AI youth has typically focused on the development of dependence on a single substance, yet most AI adolescent substance users tend to be polysubstance users. The authors noted that polysubstance use accelerates the transition from initial use to dependence, compared to use of only one substance.

analyses indicate that the scale was a reliable measure (i.e., alpha = .847 for lifetime drug usage and alpha = .912 for recent drug usage).

The dependent variable is a categorical variable coded 0 (if the respondent answered 'No' to all 18 questions), 1 (if the respondent answered 'Yes' at least to one question referring to lifetime drug use, but answered 'No' to all questions referring to recent drug use), and 2 (if the respondent answered 'Yes' at least once when asked about lifetime drug use and recent drug use). In sum, this variable has three attributes: abstainers (code 0), desisters (code 1), and persisters (code 2).

***Independent variables***

The independent measures selected for this analysis are 1) Attachment to family; 2) Attachment to school; 3) Association with delinquent peers; 4) Low self-control/impulsivity; 5) Parental monitoring.

*Attachment to family* is a composite measure created based on respondent's answers to the following seven questions/statements: Family would care if you skipped school; Family would care if you got a bad grade; Family would care if you didn't do homework; Family would care if you quit school; How much does your family care about you? How much do you care about your family? How much does your family care what you do? At each questionnaire items responses vary from 1 (not at all) to 4 (a lot). A summative scale was created with values ranging from 7 to 28. Higher scale values indicate a higher level of family attachment. The reliability coefficient Alpha for the scale was .925.

*Attachment to school* is a composite measure (summative scale) based on four indicators (I like school; School is fun; I like my teachers; I'm liked by my teachers). Initial responses at these questionnaire items were 1 (no), 2 (not much), 3 (some), and 4 (a lot).

The summative scale has values ranging from 4 to 16, higher values indicating a higher level of school attachment. The reliability coefficient Alpha = .862.

*Association with delinquent peers* is a composite indicator measuring the respondent's association with delinquent peers. This is a summative scale based on respondent's answers to 11 questionnaire items (Alpha = .816), each coded 1 (yes) and 0 (no). Respondents have been asked if they have friends who use drugs (i.e., marijuana, cocaine, inhalants, uppers, downers), get drunk, are gang members, flunked a year out of school, were kicked out of school, were suspended from school, and/or dropped out of school. The measure takes values from 0 to 11. Higher scale values indicate a higher level of exposure to negative role models.

*Low self-control* - A summative scale was created using seven questionnaire items (i.e., 1. I get angry a lot; 2. I am hotheaded; 3. I lose temper a lot; 4. I like to do dangerous things; 5. I feel like hitting someone a lot; 6. I get mad a lot; 7. I have a quick temper) and is an attitudinal indicator of self-control. Responses had values that varied from 1 (no) to 4 (a lot). The index is an adaptation of Grasmick, Tittle, Bursik, and Arneklev's (1993) scale and covers three dimensions of self-control (impulsivity, risk-taking behavior, and temper). The measure is reliable (Alpha = .887) and unidimensional. Higher values indicate a low level of self-control.

*Parental monitoring* - A summative scale was constructed based on four questions. (1. Parents allow me to go out as often as I want 2. Parents let me go any place without asking 3. Parents are less strict than other parents 4. Parents let me stay out as late as I want). At each question responses varied from 1 (very true) to 4 (not at all true). The

composite measure is unidimensional and reliable (Alpha = .830). The variable has values ranging from 4 to 16. Higher values indicate higher levels of parental supervision.

**Control Measures**

*Family structure:* This is a dichotomous variable coded 1 if respondents reported living with both biological parents, and zero, if they were living in other family arrangements.

*Age:* This is a continuous variable measuring the respondent's age.

*Gender:* This dichotomous variable is coded 1 for males and 0 for females.

**Analytic Strategy**

First, univariate analyses have been conducted and descriptive statistics (i.e., mean, standard deviation, and range) for all the measures included in the multivariate statistical models have been reported. The second step includes a set of bivariate analyses (e.g., independent-samples t-tests; bivariate correlations). The third step includes multivariate statistical analyses. Given the structure of the dependent variable and the main objective of the analysis, multinomial logistic regression has been used to identify the factors more likely to differentiate abstainers and desisters from those who persist using drugs. In order to determine if inter-group variations in effects exist among the subgroups differentiated by gender, additional multivariate analyses have been conducted using the AI male and female subsamples.

# CHAPTER V

# RESULTS

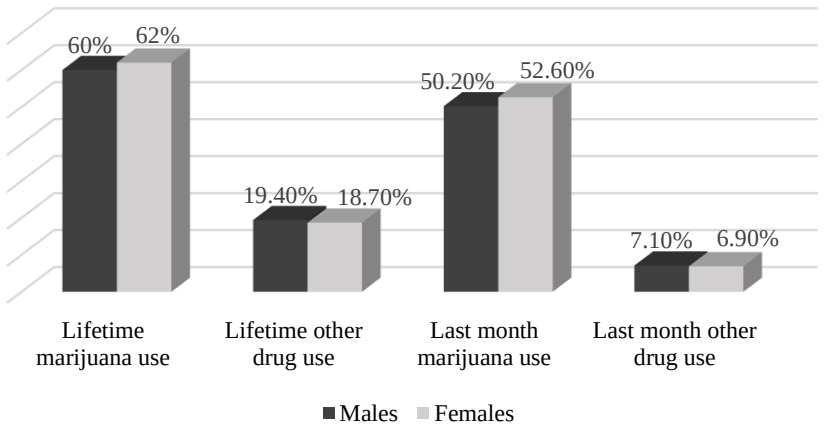
This chapter presents the results of the univariate, bivariate, and multivariate analyses. The univariate analyses will offer a brief description of the overall sample and of the two subsamples differentiated by gender in terms of the variables selected to be included in the analysis. The bivariate analyses (i.e., independent samples t-tests and chi-square tests of independence) will identify the potential inter-group differences in terms of drug usage and background characteristics. Additionally, bivariate correlations will show the association between the drug usage and the selected predictors, as well as the strength of the bivariate relationships among the independent variables. The multivariate analyses (multinomial logistic regression) will identify the factors more likely to differentiate three subgroups (i.e., abstainers, desisters and persistent drug users) within the overall sample of American Indian adolescents and in each subsample differentiated by gender.

## Univariate Analyses

Table 1 presents the descriptive statistics (means, standard deviations, and range) for the sample. In the overall sample, 37.5% of AI adolescents answered "No" to all 18 questions that asked respondents if they ever used nine different types of illegal drugs (9 questions) and if they used any of these nine drugs (9 questions) during the month preceding the survey. Results suggest that in the overall sample, about four out of ten American Adolescents abstained from illegal drug use. Data also show that 12.1% of AI

adolescents reported drug use in the past, but no usage during the month preceding the survey (i.e., they answered "Yes" at least to one question referring to lifetime drug use but answered "No" to all questions referring to recent drug use). Slightly more than half of the respondents (50.4%) reported drug usage in the past as well as recently (i.e., they answered "Yes" at least once when asked about lifetime drug use and recent drug use). It should be noted that marijuana was the drug commonly reported as being used in the past as well as during the month preceding the survey. As can be seen in Figure 1, only one in five adolescents reported lifetime use of an illegal drug other than marijuana and only 7% of the respondents reported using a drug, other than marijuana during the month preceding the survey.

Figure 1. Drug usage among American Indian adolescents by gender (N = 3,380)




Respondents' a*ge* ranged from 12 to 21 years, with a mean of 14.74, and a standard deviation of 1.69. Half (50.5%) of the respondents were males and 49.5% were females. Regarding the structure of the family of origin it can be noticed that only a third of the AI

adolescents (34.2%) lived at the time of the interview with both biological parents and four out of ten lived in single-parent households. Nearly one quarter (24.1%) of the respondents did not live with any biological parent.

On a scale from 7 (high level of self-control) to 28 (low level of self-control), the AI adolescents' level of self-control is average (Mean = 16.82; SD = 5.38), being slightly lower than the mid-point of the scale interval (17.5). In the overall sample, respondents report a relatively high level of family attachment (Mean = 23.91; SD = 5.03) on a scale that ranges from 7 to 28 (mid-point = 17.5). On a scale from 4 to 16 (mid-point = 10), the respondents' level of school attachment can be considered average (Mean = 10.72; SD = 3.09). Most respondents reported parental monitoring. For instance, 51.7% % of the respondents said their parents would not let them "go any place without asking" and 52.4% of the adolescents said their parents would not let them "stay out as late" as they wanted.

Regarding association with delinquent friends, additional analyses show that only 5% of the respondents said none of their friends used drugs or were involved in other delinquent activities. For instance, 82.1% of the respondents said they have friends who get drunk, 80% of the respondents said at least a few of their friends were marijuana users, 56.3% said they had friends who were kicked out of school, and 55.5% said some of their friends were gang members. On average, respondents reported they have at least a few friends involved in about five delinquent acts (Mean = 5.56; SD = 2.92) out of eleven.

**Table 1.** Descriptive statistics (N = 3,380)

| Variable | Range | (%) | Mean | SD | A |
|---|---|---|---|---|---|
| Drug use | 0 - 2 | | | | |
| Abstainers | | 37.50 | | | |
| Desisters | | 12.10 | | | |
| Persisters | | 50.40 | | | |
| Family attachment | 7 - 28 | | 23.91 | 5.03 | .925 |
| School attachment | 4 - 16 | | 10.72 | 3.09 | .862 |
| Delinquent friends | 0 - 11 | | 5.56 | 2.92 | .816 |
| Low self-control | 7 - 28 | | 16.82 | 5.38 | .887 |
| Parental monitoring | 4 - 16 | | 12.20 | 2.92 | .830 |
| Age | | | 14.74 | 1.69 | |
| Gender (male) | | 50.50 | | | |
| Family structure | | | | | |
| Intact family of origin | | 34.20 | | | |
| Lives with mother or father | | 41.70 | | | |
| Other family arrangements | | 24.10 | | | |

Table 2 shows the descriptive statistics (means, standard deviations) for all measures in each subsample differentiated by gender and the results of the bivariate analyses (independent-samples *t*-tests and Chi-square tests) that examine the inter-group differences in terms of drug usage and the selected predictors. Although the percentage of males who did not report life-time drug use (38.2%) or current drug use (13%) is larger than the percentage of female abstainers (36.9%) or female desisters (11.2%), and even though more females (52%) than males (48.8%) reported drug use, the inter-group difference in drug usage is not large enough to be significant ($\chi^2 = 4.070$; NS). Additionally, one's association with delinquent friends is about the same in both gender groups, and AI

males and AI females do not differ significantly in their levels of self-control (t= -.645; NS) or age (t= -.129; NS).

Yet there are some significant inter-group differences. Specifically, compared to their male counterparts, female adolescents reported a stronger family attachment (t= -4.521; p<.001), they reported higher levels of school attachment (t= -4.327; p<.001), and acknowledged higher levels of parental monitoring (t= -10.120; p<.001). While results show that about one in three girls (34.3%) and one in three boys (34.1%) live with both biological parents, it can be noticed that the percentage of boys who do not live with any biological parent is higher (27%) than the percentage of girls (21.1%) who do not live with their mothers or fathers. Additionally, more girls (44.6%) than boys (38.8%) live with at least one biological parent. Results show that one's family arrangements are not independent of gender ($\chi 2 = 19.443$; p< .01). The association between family structure and gender is significant but is relatively weak (Phi = .076; p< .001).

**Table 2.** Descriptive statistics and inter-group comparisons

| Variable | Males (N =1,708) | | | Females (N = 1,672) | | | $\chi^2$/t |
|---|---|---|---|---|---|---|---|
| | (%) | Mean | SD | (%) | Mean | SD | |
| Drug use | | | | | | | 4.070 |
| Abstainers | 38.2 | | | 36.9 | | | |
| Desisters | 13.0 | | | 11.2 | | | |
| Persisters | 48.8 | | | 52.0 | | | |
| Family attachment | | 23.52 | 5.38 | | 24.30 | 4.61 | -4.521*** |
| School attachment | | 10.49 | 3.18 | | 10.95 | 2.99 | -4.327*** |
| Delinquent friends | | 5.56 | 3.03 | | 5.56 | 2.81 | -.002 |
| Low self-control | | 16.77 | 5.30 | | 16.88 | 5.46 | -.645 |
| Parental monitoring | | 11.71 | 2.99 | | 12.71 | 2.76 | -10.12*** |
| Age | | 14.74 | 1.69 | | 14.75 | 1.70 | -.129 |
| Family structure | | | | | | | 19.443** |
| Intact family of origin | 34.1 | | | 34.3 | | | |
| Lives with mother or father | 38.8 | | | 44.6 | | | |
| Other family arrangements | 27.0 | | | 21.1 | | | |

*p< .05; **p < .01, ***p< .001, 2-tail test.

**Bivariate Analyses: Correlations**

Table 3 shows the results of the bivariate correlations for the overall sample. The bivariate correlations show the strength of the relationships between the dependent variable and independent variables as well as the strength of the associations among predictors. With one exception (gender), all the selected predictors were significantly related to the dependent variable (drug use), which in this analysis is dummy-coded (1 = current or former drug user; 0 = abstainer). As hypothesized, results show that family attachment (r= -.058; p<.01) and school attachment (r= -.122; p<.01) are negatively and significantly related to the dependent variable. Students who reported attachment to family and school

are significantly less likely to be current or former drug users. Although the correlations between these two predictors are significant, they are relatively weak.

Moreover, drug usage is positively and significantly related to association with delinquent friends (r= .350; p<.01). Compared to abstainers, respondents who reported using drugs at some time in their lives were also more likely to have friends involved in various delinquent activities (e.g., alcohol and drug use, gang membership, and/or problematic behavior in school). As predicted, former and current drug users are more likely to have a lower level of self-control (r= .223; p<.01) than adolescents who reported never using drugs.

Results also show that the level of parental monitoring reported by AI adolescents who are former or current drug users is lower than the level of parental monitoring reported by adolescents who abstained from using drugs (r= -.167; p<.01). Age and family arrangements[2] are also significantly related to the dependent variable. While drug usage increases significantly with age (r= .133; p<.01), it is less likely to be reported by adolescents who grew up with both biological parents (r= -.094; p<.01). Consistent with the results presented in Table 2, the bivariate correlations show that when the effect of other variables is not considered, AI adolescent males are not significantly less likely to use drugs than their female counterparts.

An examination of the correlation matrix suggests that multicollinearity is not going to be an issue in the multivariate analyses (i.e., the highest inter-item correlation equals .363).

[2] In this analysis, the variable "family structure" has been dichotomized (i.e., 1 = lives with both biological parents; 0 = other family arrangements).

**Table 3.** Bivariate correlations (N = 3,380)

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Drug use | - | | | | | | | | |
| 2. Family attachment | -.058** | - | | | | | | | |
| 3. School attachment | -.122** | .356** | - | | | | | | |
| 4. Delinquent friends | .350** | -.238** | -.158** | - | | | | | |
| 5. Low self-control | .223** | -.210** | -.203** | .363** | - | | | | |
| 6. Parental monitoring | -.167** | .129** | .085** | -.186** | -.171** | - | | | |
| 7. Age | .133** | .065** | .131** | .052** | -.029 | -.102** | - | | |
| 8. Gender (Male) | -.031 | -.077** | -.074** | .000 | -.011 | -.171** | -.002 | - | |
| 9. Intact family of origin | -.094** | .180** | .102** | -.158** | -.134** | .091** | .023 | -.002 | - |

**p < .01 or beyond, 2-tail test.

Table 4 shows the results of the bivariate analyses, performed to identify the strength and the direction of the relationships between the selected variables in each subsample differentiated by gender. With one exception (family attachment), in both subsamples, the selected predictors differentiate former or current drug users from abstainers. While in the male subsample, family attachment does not differentiate drug users from abstainers (r= -.035; NS), in the female subsample those who reported drug usage are significantly less likely to report strong bonds to their family (r= -.091; p<.01). In both subsamples, association with delinquent friends appears to be the strongest predictor of drug usage (male subsample: r= .341, p< .001; female subsample: r= .359, p< .001). It can be also noticed that living with both biological parents has a stronger drug-use protective effect in the female subsample (r= -.129; p< .01) than in the male subsample (r = -.058; p< .01).

**Table 4.** Bivariate correlations by gender

| Variables | | | | | | | | Males |
|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 1. Drug use (Persisters) | - | -.035 | -.112** | .341** | .193** | -.181** | .159** | -.058* |
| 2. Family attachment | -.091** | - | .350** | -.210** | -.167** | .046 | .064** | .171** |
| 3. School attachment | -.139** | .357** | - | -.127** | -.134** | -.002 | .156** | .100** |
| 4. Delinquent friends | .359** | -.277** | -.196** | - | .369** | -.164** | .095** | -.155** |
| 5. Low self-control | .252** | -.266** | -.279** | .357** | - | -.147** | -.005 | -.127** |
| 6. Parental monitoring | -.170** | .211** | .162** | -.218** | -.206** | - | -.123** | .048* |
| 7. Age | .106** | .066** | .105** | .006 | -.052* | -.084** | - | .024 |
| 8. Intact family of origin | -.129** | .192** | .106** | -.161** | -.141** | .142** | .023 | - |
| | **Females** | | | | | | | |

**p < .01 or beyond, 2-tail test.

## Multivariate Analyses

This section of dissertation presents the results of the multivariate analysis. Data have been analyzed using multinomial logistic regression. As noted earlier, the main objective of the multivariate analysis is to identify the factors more likely to differentiate abstainers and desisters from those who persist using drugs. Additionally, the analysis explores potential differences between adolescents who ceased using drugs and those who reported never using drugs.

Table 5 presents three alternative models, and all respondents are included in the analysis. The first model included in table 5 compares AI abstainers and AI persisters. Different from what has been hypothesized, when controlling for all the variables in the model, with each unit increase in family attachment, the odds of being an abstainer versus a persistent drug user decrease by 3.4% (OR = .966; p< .001). This means that when controlling for the other variables in the model, AI adolescents who reported current and lifetime drug use appear to have a significantly higher level of family attachment than AI adolescents who never used drugs.

As hypothesized, students with high attachment to school are more likely to abstain from drug use. With each unit increase in school attachment the odds of being an abstainer versus a persister increase by 8% (OR= 1.079; p< .001). Also, when compared to persisters, students who did not report drug usage are less likely to have friends who got involved in delinquent acts and are less likely to have a low level of self-control. With each unit increase in association with delinquent friends the odds of being an abstainer versus a persistent drug user decrease by 25% (OR = .752; p< .001). Similarly, with each unit increase in low self-control the odds of being an abstainer decrease by 5.1% (OR = .949; p< .001).

Relative to persistent drug users, abstainers are significantly more likely to be monitored by parents (OR = 1.082; p< .001). In addition, abstainers tend to be younger than persisters, are more likely to be males (OR= 1.186; p< .05) and are more likely to live with both biological parents (OR= 1.272; p< .01). When controlling for all the variables in the equation, the odds of being an abstainer versus a persister are almost 19% higher for males than they are for girls. And the odds of being an abstainer are 27% higher for those who live in intact families than they are for those who live with only one biological parent or do not live with any biological parent. With each year increase in age, the odds of abstaining from drug use decrease significantly by almost 22% (OR= .783; p< .001).

Model 2 shows the characteristics of AI desisters when compared to persistent drug users. Compared to persisters, AI desisters are significantly more likely to be attached to school, they are significantly less likely to have delinquent friends, and they have a higher level of self-control. For instance, with each unit increase in one's level of low self-control the odds of being a desister versus a persister decrease by 2.4% (OR = .976; p< .05).

Adolescents who ceased using drugs report a significantly higher level of parental monitoring than their peers who continue to use drugs. With each unit increase in parental monitoring, the odds of desisting from drug use increase by 7% (OR = 1.07; $p < .001$). When compared to persisters, desisters are more likely to be males. When controlling for all the other variables, the odds of desisting from drug usage are almost 35% higher for males than they are for females (OR= 1.349; $p < .01$). Family attachment, age, as well as one's family structure are no longer differentiating desisters from persistent drug users.

Model 3 compares AI desisters and abstainers in the overall sample of adolescents. When controlling for all the variables in the model, with each unit increase in association with delinquent friends, the odds of being a desister versus an abstainer increase by 19% (OR= 1.192; $p < .001$). In short, students who used drugs in the past (desisters) tended to have more delinquent friends than abstainers did. Relative to abstainers, desisters tend to have a lower level of self-control and they are older than abstainers. With each year increase in age the odds of being a former drug user versus an abstainer increase almost by 29% (OR= 1.287; $p < .001$). Family attachment, school attachment, parental monitoring, gender, as well as one's family structure are no longer differentiating desisters from abstainers.

In summary, in the overall sample, it can be noticed that desisters tend to have more in common with abstainers than they have with persistent drug users. When compared to adolescents who continue to use drugs, abstainers and desisters tend to have a higher level of school attachment, they are less likely to associate with delinquent friends, they report higher levels of parental monitoring, they have a higher level of self-control, and they are more likely to be males. The estimated statistical model shows a 23% ($R^2 = .232$) reduction

in the error of predicting who is going to be an abstainer, a desister, or a persistent drug user.

**Table 5.** Logit estimates for drug usage among American Indian adolescents

| Variable | Model 1 | | | Model 2 | | | Model 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Abstainers vs. Persisters* | | | *Desisters vs. Persisters* | | | *Desisters vs. Abstainers* | | |
| | B | SE | OR | B | SE | OR | B | SE | OR |
| Family attachment | -.034*** | .010 | .966 | -.017 | .013 | .983 | .018 | .014 | 1.018 |
| School attachment | .076*** | .015 | 1.079 | .053** | .021 | 1.054 | -.023 | .021 | .978 |
| Delinquent friends | -.285*** | .018 | .752 | -.110*** | .023 | .896 | .176*** | .024 | 1.192 |
| Low self-control | -.052*** | .009 | .949 | -.025* | .012 | .976 | .027* | .012 | 1.028 |
| Parental monitoring | .079*** | .016 | 1.082 | .068*** | .021 | 1.070 | -.011 | .023 | .989 |
| Age | -.245*** | .027 | .783 | .008 | .035 | 1.008 | .252*** | .037 | 1.287 |
| Gender (male) | .170* | .087 | 1.186 | .299** | .117 | 1.349 | .129 | .123 | 1.138 |
| Family structure (intact) | .241** | .091 | 1.272 | .014 | .125 | 1.014 | -.227 | .128 | .797 |
| Constant | 4.525*** | .543 | | -1.611* | .731 | | -6.136*** | .765 | |
| Model $\chi^2$ | 706.981*** | | | | | | | | |
| Pseudo $R^2$ (Nagelkerke) | .232 | | | | | | | | |
| N = 3,188 | | | | | | | | | |

*p< .05; **p< .01; ***p< .001. B = logistic regression coefficient; SE = standard error; OR = odds ratio.

## Examining the Conditional Effect of Gender on Variations in Drug Use

As previously noted, when controlling for the selected predictors, the results included in Table 5 show that compared to AI girls, AI boys are more likely to abstain or desist from drug use. Further analyses are conducted to explore the potential moderating effect of gender when examining the effects of the social control and self-control theoretical predictors on variations in drug use. The results of the multivariate analyses conducted in two subsamples differentiated by gender are included in tables 6 and 7. The main objective of this analysis is to determine if gender moderates the effects of the selected predictors on variations in drug use. This analysis will show if the theoretical predictions are gender invariant. In order to avoid multicollinearity issues, which have been detected when interaction terms have been included in the statistical models (see Allison, 1999), analyses have been conducted separately in each subsample. Additionally, when the sample is stratified by gender, the impact of the estimated effects can be more clearly detected.

### *Abstaining from Drug Use*

Table 6 presents the logistic regression models for the male subsample and Table 7 summarizes the results of the analysis conducted in the female subsample. The first model included in each table compares abstainers and persisters in each gender group. When controlling for all the variables in the model, with each unit increase in family attachment, the odds of being an abstainer versus a persistent drug user decrease by 3.3% (OR = .967; $p < .01$) for males and by 3.5% (OR = .965; $p < .05$) for females, suggesting that the effects of social bonds on the dependent variable are similar when the two subsamples are compared. In both gender groups, adolescents who never used drugs tend to have lower levels of family attachment than their peers who are current and former drug users.

Findings also show that with each unit increase in school attachment the odds of being an abstainer versus a persister increase by 9.2% (OR= 1.092; p< .001) in the male subsample and by 6.1% (OR= 1.061; p< .01) in the female subsample. While in both gender groups adolescents with stronger bonds to school are more likely to abstain from using drugs, the delinquency protective effect of school attachment appears to be stronger for boys than it is for girls. However, additional tests for the equality of the regression coefficients (see Paternoster et al., 1998) show that the effect of school attachment for males is not significantly higher than the effect of school attachment for females, when abstainers are compared to persistent drug users (Z= .95; NS).

When examining the effect of association with delinquent friends, results indicate that with each unit increase in the independent variable the odds of being an abstainer decrease by 24% (OR = .758; p< .001) for boys and by 26% (OR = .741; p< .001) for girls. Additional tests of the equality of the logistic regression coefficients show that one's association with delinquent friends does not affect males and females differently when abstainers are compared to persistent drug users (Z= .65; NS). In both gender groups, association with delinquent peers predicts persistent drug usage.

With each unit increase in low self-control, the odds of abstaining from drug use decrease by 3.1% (OR = .969; p< .01) for adolescent males and by 7.1% (OR = .929; p< .001) for adolescent females. Although in both subsamples low self-control is significantly associated with persistent drug use, additional analyses indicate that gender moderates the effect of self-control on the dependent variable. Specifically, the effect of self-control in differentiating abstainers from current and former drug users is significantly stronger in the female subsample (Z= 2.47; p< .05).

Relative to persistent drug users, male abstainers as well as female abstainers are significantly more likely to be monitored by parents. With each unit increase in parental monitoring the odds of abstaining from drug usage decrease by 9.2% for AI boys and by 6.8% for

AI girls. Although the effect of parental monitoring appears to be higher for the adolescent males, the difference in the logistic regression coefficients is not sufficiently large to be significant (Z= .689; NS). In short, parental monitoring has a comparable and significant delinquency preventive effect in both subsamples.

In both gender groups, with each year increase in age the probability of never using drugs decreases significantly. Additional analyses show that the effect of age in differentiating abstainers from persistent drug usage is not significantly different when boys (OR= .789; p< .001) and girls (OR= .771; p< .001) are compared (Z= .45; NS). Conversely, while family structure does not differentiate the male adolescents who never used drugs from their male peers who are drug users, living with both parents appears to have a delinquency protective effect for the American Indian girls. Compared to their female counterparts who do not live with both biological parents, girls who grew up in intact families are significantly more likely to abstain from drug use (OR= 1.501; p< .001).

***Desistance from Drug Use***

Further analyses are conducted to identify the factors that differentiate adolescents who ceased using from their peers who reported lifetime and recent drug use (Tables 6 & 7; Model 2). In both gender groups, results show that adolescents who did not report recent drug use do not differ from persistent drug users in terms of family attachment, age, and family structure. In both subsamples differentiated by gender, when compared to their peers who continued to use drugs, adolescents who desisted from drug use are significantly less likely to associate with delinquent friends. With each unit increase in association with delinquent friends the odds of desisting from drug use decrease by 8.2% for boys and by 12.6% for girls. Tests for differences in effects show

that the impact of association with delinquent friends is similar when the two subsamples are compared (Z = 1.06; NS).

Yet, while girls who succeeded the stop using drugs do not appear to have a significantly higher level of attachment to school, or higher levels of self-control, and they do not report more intense parental monitoring than the female drug users, boys who ceased using drugs do. Compared to persisters, male desisters are significantly more likely to be attached to school, they report higher levels of parental supervision, and they have higher levels of self-control. For instance, with each unit increase in low self-control the odds of being a desister versus a persister decrease by 3.4% (OR = .966; $p < .05$) for boys. These results suggest that for AI boys, directly and indirectly, the school and the parents may play an important role in encouraging desistance from drug use. Indirectly, through parental supervision, parents may influence the adolescents' selection of friends, which in turn can help female and male adolescents resist the temptation to continue drug usage.

***Similarities and Differences between Abstainers and Desisters***

Model 3 in tables 6 & 7 compares male and female desisters with their peers who did not report drug usage. It can be noticed that for the most part, in both subsamples adolescents who stopped using drugs have a lot in common with their peers who never used drugs. Both males and females who abstained from drug usage or ceased to use drugs have comparable levels of family and school attachment, they report a similar level of parental monitoring, and they are more likely to live with both biological parents. However, both boys and girls who used drugs at some point tend to associate with delinquent friends more frequently than adolescents who never used drugs and on average, they tend to be older than those who abstained from drug use. Additionally, while

self-control does not differentiate adolescent boys who stopped using drugs from male peers who never used drugs, girls who abstained from drug use tend to have a significantly higher level of self-control than girls who reported lifetime drug use, but not recent drug use.

*

To summarize, the results of the multivariate analyses conducted in each subsample show that gender has a relatively low ability to moderate the relationship between the selected predictors and variations in drug use.

- Results indicate that for the most part, the same predictors differentiate adolescents who abstained from drug use or temporarily used drugs from adolescents who reported lifetime and recent drug use and that gender-based comparisons showed more similarities than differences when abstainers and persistent drug users were compared.

- Except *family attachment*, the selected predictors impact drug use significantly and in accordance with the theoretical predictions.

- Although most tests for differences in the logistic regression coefficients did not detect significant interaction effects, results showed that the effect of *self-control* as a predictor of substance misuse is significantly higher for female adolescents than it is for boys.

- Findings show that living with both biological parents appears to have a delinquency protective effect for girls.

- Both boys and girls who reported lifetime drug usage but did not report recent drug use (i.e., desisters) were significantly less likely to report association with delinquent friends when compared to their counterparts who continued to use drugs.

- Compared to persistent drug users, male desisters are significantly more likely to be attached to school, they report higher levels of parental supervision, and they have higher levels of self-control.

- Boys and girls who desisted from drug use share more similarities than differences with their counterparts who never used drugs.

**Table 6.** Logit estimates for drug usage among American Indian male adolescents

| Variable | Model 1 | | | Model 2 | | | Model 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Abstainers vs. Persisters* | | | *Desisters vs. Persisters* | | | *Desisters vs. Abstainers* | | |
| | B | SE | OR | B | SE | OR | B | SE | OR |
| Family attachment | -.033** | .013 | .967 | -.016 | .017 | .984 | .017 | .017 | 1.017 |
| School attachment | .088*** | .021 | 1.092 | .071** | .028 | 1.074 | -.017 | .028 | .983 |
| Delinquent friends | -.277*** | .024 | .758 | -.086** | .031 | .918 | .192*** | .032 | 1.211 |
| Low self-control | -.032** | .012 | .969 | -.034* | .016 | .966 | -.003 | .017 | .997 |
| Parental monitoring | .088*** | .021 | 1.092 | .090*** | .028 | 1.094 | .002 | .030 | 1.002 |
| Age | -.237*** | .038 | .789 | -.037 | .048 | .964 | .201*** | .051 | 1.222 |
| Family structure (intact) | .081 | .128 | 1.084 | -.069 | .172 | .934 | -.149 | .175 | .861 |
| Constant | 4.013*** | .719 | | -1.072 | .958 | | -5.084*** | .990 | |
| Model $\chi^2$ | | | | 340.797*** | | | | | |
| Pseudo $R^2$ (Nagelkerke) | | | | .223 | | | | | |
| N = 1,604 | | | | | | | | | |

*p< .05; **p< .01; ***p< .001. B = logistic regression coefficient; SE = standard error; OR = odds ratio.

**Table 7.** Logit estimates for drug usage among American Indian female adolescents

| Variable | Model 1 | | | Model 2 | | | Model 3 | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Abstainers vs. Persisters* | | | *Desisters vs. Persisters* | | | *Desisters vs. Abstainers* | | |
| | B | SE | OR | B | SE | OR | B | SE | OR |
| Family attachment | -.036* | .016 | .965 | -.014 | .021 | .986 | .021 | .023 | 1.021 |
| School attachment | .059** | .022 | 1.061 | .037 | .031 | 1.038 | -.022 | .033 | .978 |
| Delinquent friends | -.300*** | .026 | .741 | -.135*** | .034 | .874 | .165*** | .037 | 1.180 |
| Low self-control | -.074*** | .012 | .929 | -.013 | .017 | .987 | .060*** | .018 | 1.062 |
| Parental monitoring | .066** | .024 | 1.068 | .039 | .032 | 1.040 | -.027 | .035 | .974 |
| Age | -.261*** | .038 | .771 | .054 | .051 | 1.055 | .314*** | .054 | 1.369 |
| Family structure (intact) | .406** | .129 | 1.501 | .103 | .182 | 1.109 | -.303 | .188 | .739 |
| Constant | 5.512*** | .812 | | -1.884 | 1.101 | | -7.396*** | 1.174 | |
| Model $\chi^2$ | | | | 380.930*** | | | | | |
| Pseudo $R^2$ (Nagelkerke) | | | | .251 | | | | | |
| N = 1,584 | | | | | | | | | |

*p< .05; **p< .01; ***p< .001. B = logistic regression coefficient; SE = standard error; OR = odds ratio.

# CHAPTER VI
# DISCUSSION AND CONCLUSIONS

Informed by two control theories (Hirschi's [1969] social bond theory and Gottfredson and Hirschi's [1990] general theory of crime) this dissertation sought to identify the factors more likely to predict differences in substance misuse in an understudy population subgroup – American Indian adolescents. In accordance with the social control paradigm, which states that normative behavior and not delinquent/deviant behavior should be explained (Hirschi, 1969), the author of this study was interested in identifying the predictors of abstention from drug use and cessation from drug use.

While results show that about a half of adolescent American Indian males (49%) and females (52%) reported substance misuse when the study was conducted, findings also show that a relatively important segment of the population subgroup under study desisted from drug use (i.e., 13% of the male adolescents and 11% of the female adolescents). Findings also show that marijuana was the illegal drug most frequently used by the respondents included in this analysis. Only 7% of the respondents in each gender group reported recent use of drugs other than marijuana. Nonetheless, even though data used in this study have been collected between 2009 and 2013 and recent information indicates that substance misuse decreased nationally among adolescents, recent research continues to show that Native American adolescents continue to have higher rates of substance misuse than adolescents belonging to other ethnic/racial groups in the United States (Lee et al., 2021). Therefore, the current study is timely and the information it provides might

help policy makers, tribal leaders, school administrators, and parents take theoretically informed measures that could prevent drug use or deter adolescents from substance misuse.

For the most part, findings included in this dissertation show empirical support for the theories that framed the analysis. To reiterate, social bond theory suggests that strong ties to informal institutions of social control, such as the family, school, and pro-social peers are effective means to prevent delinquency and crime in childhood and adolescence (Hirschi, 1969). Following the theoretical predictions, this study hypothesized that AI adolescents who have stronger bonds to family and school and are less likely to associate with delinquent peers will be more likely to abstain from using drugs and to show desistance from drug use. Different from prior research (Hart & Mueller, 2013; HeavyRunner-Rioux & Hollist, 2010; Özbay & Özcan, 2006) that examined the correlates of the parent – child bond, drug users reported a higher level of family attachment than those who did not report drug usage. Although, as Schroeder and Ford (2012) noted, some prior studies found that parental bonds and drug use were not always related, results presented here show significant effects but not in the direction anticipated by Hirschi's (1969) theory of social control. Yet it should be noted that adolescents who use drugs might be influenced not only by peers, but also by family members. Empirical research, for instance, shows that parents or older family members who use drugs or misuse alcohol, or who break the law, can increase youth's risk of future drug problems (Biederman et al., 2000). In the case of AI adolescents, it is possible that attachment to family did not have the anticipated effect because, as Meldrum et al. (2022) found, adolescents attached to parents who do not discourage drug use are less likely to abstain from and/or to stop using drugs. This finding suggests that one of the social learning theoretical concepts (i.e.,

differential reinforcement) (Akers et al., 1979) might be able to offer a better explanation of variations in substance use than the social control theoretical concept (i.e., family attachment) used in this study. In support of this assertion are the results of a recent study that examined the 2015 – 2019 marijuana use among a nationally representative sample of adolescents. The study found that Native American adolescents reported the lowest parental disapproval rate for using drugs among seven ethnic/racial groups. Moreover, the odds of being discouraged by parents to use drugs were 32% lower for Native American adolescents than they were for White adolescents (Lee et al., 2021). Furthermore, knowing that illegal drug usage is common among AI adults (Brave Heart et al., 2011; Luna et al., 2019; Skewes & Blume, 2019), it seems plausible to assume that AI adolescents experience higher exposure to family members who use drugs. And if a child is attached to family members who are drug users, then the child may not be motivated to abstain from using drugs and might be discouraged to stop using drugs. Yet due to data limitations, it is not known if substance misuse was occurring or not in the respondent's family and the effect of this potentially important variable could not be examined. Future research, however, should examine the effect of exposure to illegal drugs in the family environment and its potential moderating effect when the impact of family/parental attachment on the adolescents' substance misuse is examined.

Nevertheless, as anticipated and consistent with prior research (Bahr et al., 2005; Chan et al., 2017; Farrell & White, 1998; Ford, 2009; Galaif & Newcomb, 1999; Henry & Slater, 2007; Nguyen, 2021; Kalu et al., 2020; Tibbetts & Whittimore, 2002), students with high attachment to school were significantly more likely to abstain from drug and to desist from drug use, as other studies also found (Bryant et al., 2003; Loeber et al., 1991). Also,

as anticipated, adolescents who did not report drug use were significantly less likely to report association with delinquent friends. This finding is consistent with previous research showing that there is a positive link between strong social bonds to delinquent friends and substance misuse (Barfield-Cottledge, 2015; Chan et al., 2017; Sussman et al., 2007).

For the most part, results also show gender invariant effects of the selected social control theoretical predictors on drug use. As previously noted, gender does not appear to moderate the relationship between family attachment, bonds to delinquent peers, and variations in drug use. For example, for both male and female adolescents, family attachment had comparable effects on variations in drug use. And association with delinquent peers had the anticipated effects in both gender groups. Meanwhile, although both male and female adolescents who did not report drug use had a higher level of school attachment than AI students who were drug users, school attachment appears to play a more important role in the desistance process for boys than it does for girls.

Regarding the general theory of crime, as anticipated by Gottfredson and Hirschi (1990) and consistent with prior research findings (Fergusson et al., 1993; Pedersen, 1991; Tibbetts & Whittimore, 2002), a low level of self-control significantly predicted drug use. When compared to students who continued to use drugs, both abstainers and desisters had a higher level of self-control. This is consistent with the findings reported in previous studies (Chapple et al., 2005; Conner et al., 2009). Additional analyses show that gender moderated the effect of self-control on drug use. Specifically, the effect of self-control when differentiating abstainers from persistent drug users is significantly stronger for girls. This difference in effect indicates that in the long run the negative effects of a low level of self-control might be more pronounced for female adolescents. While both girls and boys

with low levels of self-control are more likely to use drugs, American Indian parents or legal guardians should pay special attention to girls during their formative years because as Gottfredson and Hirschi (1990) noted, "the major *cause* of low self-control is ineffective child rearing" (p. 97).

Following Gottfredson and Hirschi's (1990) predictions, it has been anticipated that the level of parental monitoring reported by AI adolescents who acknowledged drug usage would be lower than the level of parental monitoring reported by adolescents who abstained or desisted from using drugs. Findings show that in both gender groups, students who did not report drug usage were significantly more likely to report increased parental supervision. These results are congruent with prior research findings showing that parental monitoring was more likely to deter drug use among adolescents (Chapple et al., 2005; Choquet et al., 2008; Farrell & White, 1998; Robertson et al., 2008; Villarreal & Nelson, 2018). Similarly, as prior research also found (Barnes et al., 2000; Curran et al., 2000; Curran et al., 1997; Wills et al., 2001), students who stopped using drugs also reported higher levels of parental monitoring than those who continued to use drugs. Yet results also show that gender appears to impact the effect of parental supervision when predicting desistance from drug usage. Specifically, findings indicate that parental monitoring might play a more important role in the desistance process for boys than it does for girls. This is not surprising given the fact that American Indian girls included in the analysis reported on average a higher levels of drug use even if they reported more intense parental supervision boys did. In short, because parental supervision is less common among boys it might be more effective in encouraging desistance if it would intensify.

Gottfredson and Hirschi (1990) posited that children who grow up with both parents would benefit from higher levels of parental supervision and as a result, would have higher levels of self-control. Consistent with the theoretical predictions and prior research (Andreescu, 2019; Barrett & Turner, 2006; Brown & Rinelli, 2010; Hemovich et al., 2011; Kroese et al., 2021), results showed that in the overall sample, adolescents living with both biological parents were significantly less likely to report drug use. Gender-based analyses suggest that living in an intact family seems to be especially beneficial for AI girls. If family structure does not appear to differentiate male drug users from male non-users or desisters, girls living with both parents are more likely to abstain from drug use. As bivariate analyses show, AI female adolescents who live with both parents also report higher levels of parental monitoring ($r= .142$; $p< .01$), while for boys who live in intact families, parental supervision is not much higher than it is found among boys in different living arrangements ($r= .048$; $p< .05$). This might explain why living with both parents deters girls from using drugs but has no significant effect on boys.

The study also examined the effects of one's age and gender on variations in drug use. When compared to persistent drug users, both boys and girls who abstain from drug use tend to be younger, as other studies also found (Akers & Lee, 1999; Chapple et al., 2005; Moffitt, 1993; Stanley et al., 2014). Consistent with prior studies (Miller et al., 2012; Spear et al., 2005), results also show that compared to AI girls, males are more likely to abstain from drug use and are more likely to desist from drug use (i.e., the odds of being an abstainer are almost 19% higher for males than they are for girls and the odds of desisting from drug usage are almost 35% higher for males than they are for females).

Additionally, it has been anticipated that adolescents who ceased using drugs (desisters) would be more likely to resemble adolescents who abstained from using drugs. And as other studies also found (Choquet et al., 2008; Lee et al., 2020; Loeber et al., 1991; Wills et al., 2001), results show that abstainers and desisters share more similarities than differences. Family attachment, school attachment, parental monitoring, family structure, as well as one's gender are no longer differentiating desisters from abstainers.

Although the current study provides useful information and contributes to a better understanding of the individual and contextual factors that shape the American Indian adolescents' behavior as it relates to substance misuse, this research has several limitations that should be mentioned.

**Study Limitations and Recommendations for Future Research**

The data used for this dissertation came from a large longitudinal epidemiological study conducted by researchers from Colorado State University (CSU) between 2009 and 2013. Even though data have been collected over a period of several years, this is a cross-sectional study based on aggregated data and causal inferences cannot be made. In order to better observe desistance processes, future research may overcome this limitation by using longitudinal panel data that would allow a more rigorous identification of the factors able to influence desistance from drug use. The data set used in this study was based on self-report surveys and some potential bias in responses is possible. As Murphy and Rosenman (2019) noted, self-reports might not accurately reflect reality, especially when respondents are required to refer to sensitive information, such as illegal behavior. The study relied on data collected almost a decade ago, and the age of the data may be another limitation that

future research should overcome. Although American Indian youth are regularly included in studies based on nationally representative samples of adolescents, the actual sample of AI adolescents is usually very small because there are only 1.6 million AI youth 18 years old and younger. For instance, less than one percent (0.63%) of the respondents included in Lee et al.'s (2021) study based on the *National Survey on Drug Use and Health* were Native Americans adolescents. Because substance misuse continues to plague AI communities it is important to collect detailed information using larger samples of AI youth, that would represent all the tribal communities.

Furthermore, this study was based on a secondary data analysis, which limited the selection of the variables relevant for the analysis. For instance, important questions, such as drug usage by family members (e.g., parents, siblings) could not be operationalized because the survey used in the original study did not include questions pertaining to drug use at the family level. Another study limitation relates to the way desistance has been operationalized in the current study. Although desisters have been defined as respondents who used any illegal drug in the past but not during the month preceding the survey, there is no way of knowing if the respondent did not use drugs again, after the survey has been completed. As noted earlier, the use of panel data collected over a longer period might overcome this limitation and the process of desistance from drug use might be more clearly defined. Moreover, the sample used in this analysis included only adolescents enrolled in school when the study was conducted. Consequently, the findings might not generalize to AI students who have dropped out of school. Future research might be able to overcome this study limitation by using a more inclusive sample that would incorporate not only AI youth living on reservations but also AI living outside of tribal communities.

Moreover, future research should combine quantitative research methods of data collection with qualitative research, such as in-depth interviews with adolescents and their parents, focus groups with adolescents and members of the tribal communities, and systematic observation. Formalized surveys restrict the information that can be collected and, in many instances, limit our understanding of the problems that affect Native Americans youth and impact their behavior. For example, in one of the few studies that specifically focused on trajectories of substance use among young AI adolescents, Whitesell et al. (2014) highlighted the importance of early substance use prevention programs that address the impact of stressful events and deviant peers on the adolescents' behavioral outcomes. For many researchers, who are frequently outsiders that are not familiar with the history and trauma experienced by Native Americans it might be difficult to design comprehensive data collection instruments if interviews with the potential subjects are not conducted before surveys are designed. Furthermore, future research should involve Native American scholars and tribal representatives in the planning and design of any study that intends to collect data about AI youth. Additionally, future research that plans to address substance misuse within AI communities should pay attention to the heterogeneity of the AI population and should promote tangible health benefits to the community under study. To develop a robust substance abuse research program, researchers should adopt a partnered approach guided by the research priorities of the tribal community and the facts that are important to native people. Moreover, Etz and her colleagues recommend that systematic efforts to increase the research capacity of the tribal communities (by training qualified indigenous investigators to conduct interventions, collect and analyze data) should be made as well (Etz et al., 2012, p. 374).

**Policy implications**

Available epidemiological research as well as the information included in this study demonstrate that substance misuse is a serious public health problem Native American communities are facing with. This study shows that the family, the school, and the peer group have interconnected roles that play an important part in the socialization process of the AI youth and their adherence to normative social behavior. Specifically, findings show that a high level of self-control, weak bonds to delinquent peers, strong social bonds to school, and sustained parental supervision may not only prevent substance misuse but may also play an important role in the desistance process. Although, as one author noted, the family and the school may have a limited capacity to influence the adolescents' selection of friends or their level of attachment to a particular peer group, by stressing the long-term costs of substance misuse, these two important socializing agents can change the adolescents' thinking patterns and pro-drug use rationalizations (Andreescu, 2019). Moreover, parents and educators should cooperate to effectively monitor the children's behavior and help them develop self-control at an early age. Even though "in the contemporary American society the school has a difficult time teaching self-control", research shows that the school can be an effective socializing agency, especially when parents support the rules and the disciplinary measures instituted to correct the students' lapses in self-control (Gottfredson & Hirschi, 1990, pp. 105-106). As previously noted, the findings of this study are consistent with the results presented in a multitude of prior studies and the policy implications of the current research do not differ from those included in research studies that addressed the adolescents' substance misuse for the past decades. The

school, the family, and the community should combine efforts to prevent and dissuade adolescents from using drugs. However, even if many drug-prevention programs targeting adolescents have been implemented in schools and communities, not all have been successful. Most of these programs are *developmental prevention interventions*, which are designed to prevent delinquent behavior and target risk and protective factors discovered in studies of human development (Farrington & Welsh, 2007)

A recent systematic review of evaluation studies that examined the effectiveness of various family- and school-based interventions meant to prevent adolescents from using drugs found that programs that succeeded to improve the parent – child communication skills and the parents' monitoring skills and increased the adolescents' attachment to school showed positive outcomes, as they related to substance misuse. In sum, school-based programs which include both student and parent components are effective in reducing drug use among youth (Newton et al., 2017). Among programs that target the children and their parents, four types of programs are particularly successful. These programs involve parent education (in the context of home visiting), parent management training, child skills training, and preschool intellectual enrichment programs (Farrington & Welsh, 2007). Piquero et al.'s (2009) systematic review also shows that many of these programs are effective.

One program specifically designed to address substance misuse is *Creating Lasting Family Connections* (CLFC). The program targets adolescents aged 9-17 years and families living in high-risk environments. The program intends to enhance family bonding and communication skills among parents and youth and has been delivered over a 20-week period by trained facilitators. Post-treatment outcome evaluation results showed less

frequent drug use among adolescents and a reduction in family violence and substance misuse at the family level, 12 months after the program ended (Griffin & Botvin, 2010).

The *Brief Strategic Family Therapy* (BSFT) is another program that produced positive results. The intervention targets parents with behavior management issues, whose children exhibit early substance use and delinquency problems. The program lasts 8 to 12 weeks and is administered by BSFT counselors, who provide focus interventions in combination with training meant to improve their parental skills. Evaluation results revealed BSFT produced reductions in youth marijuana use and overall substance use. Similar results were found for adolescent girls who showed significantly greater reductions in substance use at the 1-year follow-up assessment compared with girls in the control group (Griffin & Botvin, 2010).

The available literature indicates that school-based prevention programs can play an essential role in reducing youth's risk for substance use as well. Several programs are designed especially for targeting the adolescents considered to be at high risk for substance use initiation. For instance, research has shown that personal and social skills training, and refusal skills may effectively reduce incidence and prevalence of drug use (Moran & Reaman, 2002). Furthermore, the *Life Skills Training* (LST) program is a universal program designed for middle or junior high school students. The program combines drug resistance skills with social competence skills to build resilience. The program is based on 30 class sessions over 3 years. Evaluation results revealed LST produced reductions in marijuana and other illicit drug use (Griffin & Botvin, 2010).

Another program that showed promising results is the *Project Toward No Drug Abuse* (TND). The program is designed to help high-risk students (14 to 19 years old) resist

substance use and abuse. The program intends to improve the students' self-control, coping skills, and plans to increase the students' ability to resist the temptation to use drugs. The program is based on 12 lessons with a video component showing how substance abuse can impede life goals. Outcome evaluations revealed that TND produced a 25% reduction in rates of hard drug use and a 22% reduction in marijuana use in the experimental group relative to the control group at the 1-year follow-up (Griffin and Botvin, 2010).

Yet, although many interventions meant to prevent and deter substance misuse proved to be effective when applied to youth in the general populations, scholars who conduct research in Native communities argue that the adaptation and implementation in Native American communities of evidence-based interventions designed for non-Native youth is "decidedly a sub-optimal approach" (Walters et al., 2020, p. 54). These scholars argue that in order to be successful, health-promotion interventions, including programs meant to prevent adolescent substance misuse, should incorporate in the program design the cultural worldviews and protocols of the Native communities (Baldwin et al., 2021; Walters et al., 2020). And a review of the literature demonstrates that substance abuse prevention programs that targeted AI youth and reported positive outcomes are indeed programs that incorporated the Native Americans' cultural, traditional, spiritual, and family values. Research also shows that interventions that include "talking circles", an important concept for many indigenous groups today, appear to contribute to a reduction in substance use. Furthermore, research indicates that interventions targeting AI youth have an increased rate of success if they are culturally tailored to each Native American community and if they actively engage the community in the development and implementation of these programs (see Baldwin et al., 2021).

Although the number of rigorous outcome evaluations of programs meant to prevent and reduce the AI adolescents' substance use and abuse is limited, there are programs that showed promise. Among them is the *Cherokee Talking Circle and Self-Reliance Model (CTC),* which is a community-based substance abuse intervention designed for Keetoowah Cherokee students in the early stages of substance abuse. The program is developed in collaboration with Keetoowah-Cherokee community representatives and a tribal Elder, and targets students ages 13 to 18 who are substance users. An outcome evaluation based on a quasi-experimental design showed that students involved in the CTC program registered a significant reduction in substance use and related problems when compared to students exposed to a standard intervention (*Be a Winner/Drug Abuse Resistance Education*) that was not culturally based (Lowe et al., 2012). Another intervention that used a community-based and tribal participatory research (CBPR/TPR) approach and showed promising results is *Healing of the Canoe*. Developed through a partnership between the Alcohol and Drug Abuse Institute at the University of Washington and the Suquamish and Port Gamble S'Klallam tribes, the program aims to prevent substance use disorders among tribal adolescents through a culturally grounded social skills intervention. The program consists of an 11-session curriculum, attempting to prevent initiation of substance use among those not yet using and de-escalation among those who have already used drugs. An outcome evaluation conducted four months after exposure to treatment showed a significant reduction in substance use compared to baseline data (Donovan et al., 2015). Although promising results were obtained, the evaluation design did not include a control group and the experimental group included a very small number of students.

Nevertheless, a recently published ethnographic study that described the implementation of a culturally centered manualized intervention specially designed for three unique/different tribal communities also presents effective strategies that should be incorporated in programs that address adolescent substance misuse in Native communities. These programs should promote a dialogue between many generations of community members including youth, parents, elders, and educators. They should also include community-based activities that promote positive social relationships in the community, develop traditional skills, incorporate traditional cultural activities and teachings, and draw on cultural sources of resilience. Moreover, programs should inform the youth about the consequences of substance use and the program design should address a wide array of social issues that form the roots of the substance-use problem (Baldwin et al., 2021, pp. 784-785).

## Conclusion

Despite the extensive body of research that examined the correlates of substance misuse among adolescent population groups, limited research has been conducted on desistance from substance use during adolescence. Additionally, the number of theoretically informed studies that explored the risk and protective factors associated with substance misuse among American Indian adolescents is relatively small. Moreover, to the author's knowledge no study examined the individual-level factors contributing to American Indian youth's desistance from drug use. Furthermore, theoretically informed research that explored the correlates of abstention and desistance from drug use in adolescent samples differentiated by gender is limited as well. This dissertation sought to

advance the scholarship on desistance processes in adolescence in general and the American Indian youth's desistance from substance misuse in particular, by addressing the aforementioned gaps in the literature.

Findings show that strong bonds to school, parental supervision, weak association with delinquent friends, and high self-control predict abstention from drug use in both gender subgroups. Different from the theoretical predictions, strong family bonds are more likely to be reported by persistent drug users, suggesting that the quality of the parent – child relationship is not always a valid predictor of the adolescent's behavioral outcomes, especially when the parents' tolerance to delinquent behavior is not considered. Results also show that both boys and girls who ceased using drugs associated with delinquent friends much less than persistent drug users did, suggesting that for American Indian youth exposure to positive role models may significantly impact desistance from substance misuse. Although for the most part the effects of the selected predictors are gender invariant, results also show that increased bonds to school and parental monitoring are conducive to desistance from drug use among AI boys and that living in intact families protects AI girls from using drugs. This suggests that policies and programs that intend to prevent or reduce illegal drug use should consider tailoring intervention in accordance with the adolescents' gender-specific vulnerabilities and needs.

The findings derived from this dissertation have important implications for theory, research, and practice. This dissertation advances theory by testing the validity of two prominent social control theories as potential explanations of desistance from delinquent behavior. By expanding the general knowledge regarding the factors that predict resistance to drug in an understudied population subgroup - American Indian youth, the current study

advances research as well. By highlighting the importance of the family and school during a child's formative years and by showing that adolescents who abstain from drug use and those who desist from substance misuse have a lot in common, this dissertation also informs evidence-based interventions meant to prevent and reduce substance use in a high-risk population subgroup.

REFERENCES

Agnew, R. (1993). Why do they do it? An examination of the intervening mechanisms between “Social Control” variables and delinquency. *Journal of Research in Crime and Delinquency, 30*(3), 245-266.

Akers, R. L. (1998). *Social learning and social structure: A general theory of crime and deviance.* Northeastern University Press.

Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radosevich, M. (1979). Social learning and deviant behavior: A specific test of a General Theory. *American Sociological Review, 44*(4), 636-655.

Akers, R. L., & Lee, G. (1999). Age, Social learning, and social bonding in adolescent substance use. *Deviant Behavior, 20*(1), 1-25.

Akins, S., Mosher, C., Rotolo, T., & Griffin, R. (2003). Patterns and correlates of substance use among American Indians in Washington State. *Journal of Drug Issues, 33*(1), 45-72.

Allison, P. D. (1999) *Logistic Regression Using the SAS System: Theory and Application*. Cary, NC: SAS Institute.

Anderson, J. E., & Mueller, T. E. (2008). Trends in sexual risk behavior and unprotected Sex among high school students, 1991-2005: The role of substance use. *Journal of School Health, 78*(11), 575-580.

Andreescu, V. (2019). Family, school, and peer influences on alcohol abstinence and use among American Indian and white female adolescents. *Deviant Behavior, 40,* 56-73. DOI: 10.1080/0163925.2017.1411032.

Andreescu, V. & Overstreet, S. M. (2020). Violent victimization and violence perpetration among American Indian adolescents. *Journal of Interpersonal Violence,* 1-42.

Bahr, S. J., Hoffmann, J. P., & Yang, X. (2005). Parental and peer influences on the risk of adolescent drug use. *Journal of Primary Prevention, 26*(6), 529-551.

Bahr, S. J., Marcos, A. C., & Maughan, S. L. (1995). Family, educational and peer influences on the alcohol use of female and male adolescents. *Journal of Studies on Alcohol, 56,* 457-469.

Bahr, S. J., Maughan, S. L., Marcos, A. C., & Li, B. (1998). Family, Religiosity, and the risk of adolescent drug use. *Journal of Marriage and the Family, 60,* 979-992.

Baldwin, J. A., Lowe, J., Brooks, J., Charbonneau-Dahlen, B. K., Lawrence, G., Johnson-Jennings, M., Padgett, G., Kelley, M., & Camplain, C. (2021). Formative research and cultural tailoring of a substance abuse prevention program for American Indian youth: Findings from the intertribal talking circle intervention. *Health Promotion Practice, 22*(6), 778-785.

Banks, D. E., Rowe, A. T., Mpofu, P., & Zapolski, T. C. B. (2017). Trends in typologies of concurrent alcohol, marijuana, and cigarette use among US adolescents: An ecological examination by sex and race/ethnicity. *Drug and Alcohol Dependence, 179,* 71-77.

Barfield-Cottledge, T. (2015). The triangulation effects of family structure and attachment on Adolescent substance use. *Crime & Delinquency, 61*(2), 297-320.

Barnes, G. M., Reifman, A. S., Farrell, M. P., & Dintcheff, B. A. (2000). The effects of parenting on the development of adolescent alcohol misuse: A six-wave latent growth model. *Journal of Marriage and Family, 62*(1), 175-186.

Barrett, A. E., & Turner, R. J. (2006). Family structure and substance use problems in adolescence and early adulthood: Examining explanations for the relationship. *Addiction, 101,* 109-120.

Bauman, K. E., & Ennett, S. T. (1994). Peer influence on adolescent drug use. *American Psychologist, 49*(9), 820-822.

Bayly, B. L., & Vasilenko, S. A. (2021). An ecological latent class model of adolescent risk and protective factors: Implications for substance use and depression prevention. *International Journal of Behavioral Development, 45*(4), 355-367.

Beauvais, F. (1998). American Indians and alcohol. *Alcohol Health & Research World, 22*, 253-259.

Beauvais, F., Jumper-Thurman, P., & Burnside, M. (2008). The changing patterns of drug use among American Indian students over the past thirty years. *American Indian and Alaska Native Mental Health Research, 15*(2), 15-24.

Beauvais, F., Jumper-Thurman, P., Helm, H., Plested, B., & Burnside, M. (2004). Surveillance of drug use among American Indian Adolescents: Patterns over 25 years. *Journal of Adolescent Health, 34*(6), 493-500.

Beauvais, F., & Swaim, R. (2015). *Drug use among young American Indians: Epidemiology and prediction, 1993-2006 and 2009-2013* (ICPSR35062-v3) [Dataset]. Inter-university Consortium for Political and Social Research. http://doi.org/10.3886/ICPSR35062.v3

Biederman, J., Faraone, S. V., Monuteaux, M. C., & Feighner, J. A. (2000). Patterns of alcohol and drug use in adolescents can be predicted by parental substance use disorders. *Pediatrics, 106*(4), 792-797.

Brave Heart, M. Y. H. (1999). Oyate Ptayela: Rebuilding the Lakota Nation through addressing historical trauma among Lakota parents. *Journal of Human Behavior in the Social Environment, 2*(1-2), 109-126.

Brave Heart, M. Y. H., Chase, J., Elkins, J., & Altschul, D. B. (2011). Historical trauma among Indigenous peoples of the Americas: Concepts, research, and clinical considerations. *Journal of Psychoactive Drugs, 43*(4), 282-290.

Brave Heart, M. Y. H., & DeBruyn, L. M. (1998). The American Indian holocaust: Healing historical unresolved grief. *American Indian and Alaska Native Mental Health Research, 8*(2), 56-78.

Brown, S. L, & Rinelli, L. N. (2010). Family structure, family processes, and adolescent smoking and drinking. *Journal of Research on Adolescence, 20*(2), 259–273.

Bryant, A. L., Schulenberg, J. E., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (2003). How academic achievement, attitudes, and behaviors relate to the course of substance use during adolescence: A 6-year, multiwave National longitudinal study. *Journal of Research on Adolescence, 13*(3), 361-397.

Burt, C. (2015). Self-control and crime: A sociological perspective. In K. M. Beaver, J.C. Barnes, & B. B. Boutwell (Eds.), *The nature versus biosocial debate in criminology: On the origins of criminal behavior and criminality* (pp. 143- 171). SAGE Pub.

Bushway, S. D., Piquero, A. R., Broidy, L. M., Cauffman, E., & Mazerolle, P. (2001). An

Empirical framework for studying desistance as a process. *Criminology, 39*(2), 491-516.

Cernkovich, S. A., & Giordano, P. C. (1992). School bonding, race, and delinquency. *Criminology, 30*(2), 261-291.

Chan, G. C. K., Kelly, A. B., Carroll, A., & Williams, J. W. (2017). Peer drug use and adolescent polysubstance use: Do parenting and school factors moderate this association? *Addictive Behaviors, 64,* 78-81.

Chapple, C. L., Trina L. Hope, T. L., & Whiteford, S. W. (2005) The direct and indirect effects of parental bonds, parental drug use, and self-control on adolescent substance use. *Journal of Child & Adolescent Substance Abus*e, 14(3), 17-38, DOI: 10.1300/J029v14n03_02

Chen, H.-J., Balan, S., & Price, R. K. (2012). Association of contextual factors with drug use and binge drinking among White, Native American, and Mixed-Race adolescents in the general population. *Journal of Youth & Adolescence, 41*(11), 1426-1441.

Cheung, N.W. T., & Cheung, Y.W. (2008). Self-control, social factors, and delinquency: A test of the general theory of crime among adolescents in Hong Kong. *Journal of Youth and Adolescence, 37,* 412–430.

Child Trends. (2019). *Teen homicide, suicide, and firearm death.* https://www.childtrends.org/indicators/teen-homicide-suicide-and-firearm-deaths

Choquet, M., Hassler, C., Morin, D., Falissard, B., & Chau, N. (2008). Perceived parenting styles and tobacco, alcohol and cannabis use among French adolescents: Gender and family structure differentials. *Alcohol & Alcoholism, 43*(1), 73–80.

Chu, D. C. (2007). Religiosity and desistance from drug use. *Criminal Justice and Behavior, 34*(5), 661-679.

Chung, I., Hawkins, J. D., Gilchrist, L. D., Hill, K. G., & Nagin, D. S. (2002). Identifying and predicting offending trajectories among poor children. *Social Service Review, 76*(4), 663-685.

Conner, B. T., Stein, J. A., & Longshore, D. (2009). Examining self-control as a multidimensional predictor of crime and drug use in adolescents with criminal histories. *Journal of Behavioral Health Services Research*, 36(2), 137-149.

Costello, B. J., & Vowell, P. R. (1999). Testing Control Theory and Differential Association: A reanalysis of the Richmond Youth Project Data. *Criminology, 37*(4), 815-842.

Cottle, C. C., Lee, R. J., & Heilbrun, K. (2001). The prediction of criminal recidivism in juveniles: A meta-analysis. *Criminal Justice and Behavior, 28*(3), 367-394.

Curran, G. M., White, H. R., & Hansell, S. (1997). Predicting problem drinking: A test of an Interactive social learning model. *Alcoholism: Clinical and Experimental Research, 21*(8), 1379-1390.

Curran, G. M., White, H. R., & Hansell, S. (2000). Personality, environment, and problem drug use. *Journal of Drug Issues, 30*(2), 375-406.

Dennis, M. K., & Momper, S. L. (2012). "It's bad around here now": Tobacco, alcohol and other drug use among American Indians living on a rural reservation. *Journal of Ethnicity in Substance Abuse. 11*(2), 130-148.

Donovan, D. M., Thomas, L. R., Sigo, R. L. W., Price, L., Lonczak, H., Lawrence, N.,

Ahvakana, K., Austin, L., Lawrence, A., Price, J., Purser, A., & Bagley, L. (2015). Healing of the canoe: Preliminary results of a culturally grounded intervention to prevent substance abuse and promote tribal identity for Native youth in two Pacific Northwest tribe. *American Indian and Alaska Native Mental Health Research, 22*(1), 42-76.

Dornbusch, S. M., Erickson, K. G., Laird, J., & Wong, C. A. (2001). The relation of family and school attachment to adolescent deviance in diverse groups and communities. *Journal of Adolescent Research, 16*(4), 396-422.

Duncan, G. J., Boisjoly, J., Kremer, M., Levy, D. M., & Eccles, J. (2005). Peer effects in drug use and sex among college students. *Journal of Abnormal Child Psychology, 33*(3), 375-385.

Eitle, D., & Eitle, T. M. (2018). Weight status and substance use among urban American Indian adolescents: Findings from the national longitudinal study of adolescent to adult health. *Journal of Alcohol and Drug Education, 62*(3), 23-42.

Etz, K. E., Arroyo, J. A., Crump, A. D., Rosa, C. L., & Scott, M. S. (2012). Advancing American Indian and Alaska Native substance abuse research: Current science and future directions. *American Journal of Drug and Alcohol Abuse, 38*(5), 372-375.

Fagan, J. (1989). Cessation of family violence: Deterrence and dissuasion. In L. Ohlin & M. Tonry (Eds.), *Family Violence* (pp. 377-425). University of Chicago Press.

Farrell, A. D., & White, K. S. (1998). Peer influences and drug use among urban adolescents: Family structure and parent-adolescent relationship as protective factors. *Journal of Consulting and Clinical Psychology, 66*(2), 248-258.

Farrington, D. P., & Welsh, B. C. (2007). *Saving children from a life of crime: Early risk factors and effective interventions.* New York: Oxford University Press.

Fergusson, D. M., Lynskey, M. T., & Horwood, L. J. (1993). Conduct problems and attention deficit behaviour in middle childhood and cannabis use by age 15. *Australian and New Zealand Journal of Psychiatry, 27*(4), 673-682.

Fergusson, D. M., Lynskey, M. T., & Horwood, L. J. (1996). Origins of comorbidity between conduct and affective disorders. *Journal of the American Academy of Child & Adolescent Psychiatry, 35*(4), 451-460.

Ford, J. A. (2009). Nonmedical prescription drug use among adolescents: The influence of bonds to family and school. *Youth & Society, 40*(3), 336-352.

Galaif, E. R., & Newcomb, M. D. (1999). Predictors of polydrug use among four ethnic groups: A 12-year longitudinal study. *Addictive Behaviors, 24*(5), 607-631.

Gibbs, J. J., Giever, D., & Martin, J. S. (1998). Parental management and self-control: An empirical test of Gottfredson and Hirschi's general theory. *Journal of Research in Crime and Delinquency, 35*(1), 40-70.

Gottfredson, M. R., & Hirschi, T. (1990). *A General Theory of Crime.* Stanford, CA: Stanford University Press.

Grasmick, H. G., Tittle, C. R., Bursik Jr., R. J., & Arneklev, B. J. (1993). Testing the core empirical implications of Gottfredson and Hirschi's General theory of crime. *Journal of Research in Crime and Delinquency, 30*(1), 5-29.

Griffin, K. W., & Botvin, G. J. (2010). Evidence-based interventions for preventing substance use disorders in adolescents. *Child and Adolescent Psychiatric Clinics of North America, 19*(3), 505-526.

Hanson, G. R., Venturelli, P. J., & Fleckenstein, A. E. (2018). *Drugs and Society* (13th ed.). Burlington, MA: Jones & Bartlett Learning.

Hanson, G. R., Venturelli, P. J., & Fleckenstein, A. E. (2022). *Drugs and Society* (14th ed.). Burlington, MA: Jones & Bartlett Learning.

Hart, C. O., & Mueller, C. E. (2013). School delinquency and social bond factors: Exploring gendered differences among a national sample of 10th graders. *Psychology in the Schools, 50*(2), 116-133.

Hautala, D., Sittner, K., & Walls, M. (2019). Onset, comorbidity, and predictors of nicotine, alcohol, and marijuana use disorders among North American Indigenous adolescents. *Journal of Abnormal Child Psychology, 47*(6), 1025-1038.

Hawkins, E. H., Cummins, L. H., & Marlatt, G. A. (2004). Preventing substance abuse in American Indian and Alaska Native youth: Promising strategies for healthier communities. *Psychological Bulletin, 130*(2), 304-323.

Hay, C., Meldrum, R. C., & Piquero, A. R. (2013). Negative cases in the Nexus between Self-Control, Social Bonds, and Delinquency. *Youth Violence and Juvenile Justice, 11*(1), 3-25.

HeavyRunner-Rioux, A. R., & Hollist, D. R. (2010). Community, family, and peer influences on alcohol, marijuana, and illicit drug use among a sample of Native American youth: An

analysis of predictive factors. *Journal of Ethnicity in Substance Abuse, 9*(4), 260-283.

Hemovich, V., Lac, A., & Crano, W. D. (2011). Understanding early-onset drug and alcohol outcomes among youth: The role of family structure, social factors, and interpersonal perceptions of use. *Psychology, Health & Medicine*, *16*(3), 249–267.

Henry, K. L. (2008). Low prosocial attachment, involvement with drug-using peers, and adolescent drug use: A longitudinal examination of mediational mechanisms. *Psychology of Addictive Behaviors, 22*(2), 302-308.

Henry, K. L., & Slater, M. D. (2007). The contextual effect of school attachment on young adolescents' alcohol use. *Journal of school health, 77*(2), 67-74.

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

Hirschi, T., & Gottfredson, M. R. (1983). Age and the explanation of crime. *American Journal of Sociology, 89*(3), 552-584.

Hirschi, T., & Gottfredson, M. R. (2000). In defense of self-control. *Theoretical Criminology, 4*(1), 55-69.

Hoeve, M., Blokland, A., Dubas, J. S., Loeber, R., Gerris, J. R. M., & van der Laan, P. H. (2008). Trajectories of delinquency and parenting styles. *Journal of Abnormal Child Psychology, 36*(2), 223-235.

Hoeve, M., Dubas, J. S., Eichelsheim, V. I., van der Laan, P. H., Smeenk, W., & Gerris, J. R. M. (2009). The relationship between parenting and delinquency: A meta-analysis. *Journal of Abnormal Child Psychology*, *37*, 749 – 775.

Hoeve, M., Stams, G. J. J. M., van der Put, C. E., Dubas, J. S., van der Laan, P. H., & Gerris, J. R. M. (2012). A Meta-analysis of attachment to parents and delinquency. *Journal of Abnormal Child Psychology, 40*(5), 771-785.

Hoffmann, J. P., & Su, S. S. (1998). Parental substance use disorder, mediating variables and adolescent drug use: A non-recursive model. *Addiction, 93*(9), 1351-1364.

Hwang, S., & Akers, R. L. (2003). Substance use by Korean adolescents: A cross-cultural test of social learning, social bonding, and self-control theories. In R. L. Akers, & G. F. Jensen (Eds.), *Social learning theory and the explanation of crime: A guide for the new century* (pp. 39–63). New Brunswick, NJ: Transaction.

Hwang, S., & Akers, R. L. (2006). Parental and peer influences on adolescent drug use in Korea. *Asian Criminology, 1*(1), 51-69.

Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2019). Monitoring the future national survey results on drug use 1975-2018: Overview, key findings on adolescent drug use. Ann Arbor: Institute for Social Research, University of Michigan.

Johnston, L. D., Miech, R. A., O'Malley, P. M., Bachman, J. G., Schulenberg, J. E., & Patrick, M. E. (2021). Monitoring the future national survey results on drug use, 1975-2020: 2020 Overview key findings on adolescent drug use. Ann Arbor: Institute for Social Research, University of Michigan. http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2020.pdf

Kalu, S. R., Menon, S. E., & Quinn, C. R. (2020). The relationship between externalizing behavior and school and familial attachments among girls from diverse backgrounds. *Children and Youth Services Review, 116*,1-11.

Kazemian, L. (2007). Desistance from crime: Theoretical, empirical, methodological, and Policy considerations. *Journal of Contemporary Criminal Justice, 23*(1), 5-27.

Kim, E., Kwak, D-H., & Yun, M. (2010). Investigating the effects of peer association and

parental influence on adolescent substance use: A study of adolescents in South Korea. *Journal of Criminal Justice, 38*(1), 17-24.

Kirmayer, L. J., Gone, J. P., & Moses, J. (2014). Rethinking historical trauma. *Transcultural Psychiatry, 51*(3), 299-319.

Kostelecky, K. L. (2005). Parental attachment, academic achievement, life events and their relationship to alcohol and drug use during adolescence. *Journal of Adolescence, 28*(5), 665-669.

Kroese, J., Bernasco, W., Liefbroer, A. C., & Rouwendal, J. (2021). Growing up in single-parent families and the criminal involvement of adolescents: a systematic review. *Psychology, Crime & Law*, *27*(1), 61-75. DOI:10.1080/1068316X.2020.1774589.

Krohn, M. D., Larroulet, P., Thornberry, T. P., & Loughran, T. A. (2019). The effect of childhood conduct problems on early onset substance use: An examination of the mediating and moderating roles of parenting styles. *Journal of Drug Issues, 49*(1), 139-162.

Krohn, M. D., Massey, J. L., Skinner, W. F., & Lauer, R. M. (1983). Social Bonding Theory and adolescent cigarette smoking: A longitudinal analysis. *Journal of Health and Social Behavior, 24*(4), 337-349.

Kulis, S., Dustman, P. A., Brown, E. F., & Martinez, M. (2013). Expanding urban American Indian youths' repertoire of drug resistance skills: Pilot results from a culturally adapted prevention program. *American Indian and Alaska Native Mental Health Research, 20*(1), 35-55.

Kulis, S., Napoli, M., & Marsiglia, F. F. (2002). Ethnic pride, biculturalism, and drug use norms of urban American Indian adolescents. *Social Work Research, 26*(2), 101-112.

Lac, A. & Crano, W. D. (2009). Monitoring matters: Meta-analytic review reveals the reliable linkage of parental monitoring with adolescent marijuana use. Perspectives on Psychological Science, *4*, 578–586.

Laub, J. H., & Sampson, R. J. (2001). Understanding desistance from Crime. *Crime and Justice, 28,* 1-69.

Lee, M. H., Kim-Godwin, Y. S., & Hur, H. (2021). Race/ethnicity differences in risk and protective factors for marijuana use among U.S. adolescents. *BMC Public Health, 21*(1), 1-10.

Lee, W., Moon, J., & Garcia, V. (2020). The pathways to desistance: A longitudinal study of juvenile delinquency. *Deviant Behavior, 41*(1), 87-102.

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

Liu, X., & Kaplan, H. B. (1999). Explaining the gender difference in adolescent delinquent behavior: A longitudinal test of mediating mechanisms. *Criminology, 37*(1), 195-216.

Loeber, R., Stouthamer-Loeber, M., Van Kammen, W., & Farrington, D. P. (1991). Initiation, escalation and desistance in juvenile offending and their correlates. *The Journal of Criminal Law and Criminology, 82*(1), 36-82.

Lowe, J., Liang, H., Riggs, C., & Henson, J. (2012). Community partnership to affect substance abuse among Native American adolescents. *American Journal of Drug and Alcohol Abuse, 38*(5), 450-455.

Luna, J. A. A., Moore, R. S., Calac, D. J., Grube, J. W., & McGaffigan, R. P. (2019). Practices surrounding pain management among American Indians and Alaska Natives in rural Southern California: An exploratory study. *Journal of Rural Health, 35*(1), 133-138.

Marschall-Lévesque, S., Castellanos-Ryan, N., Vitaro, F., & Séguin, J. R. (2014). Moderators of the association between peer and target adolescent substance use. *Addictive Behaviors, 39*(1), 48-70.

Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives* (1st ed). Washington, DC: American Psychological Association.

Matsueda, R. L., & Anderson, K. (1998). The dynamics of delinquent peers and delinquent behavior. *Criminology, 36*(2), 269-308.

McFarland, J., Cui, J., & Stark, P. (2018). *Trends in high school dropout and completion rates in the United States: 2014 (NCES 2018-117).* National Center for Education Statistics. https://nces.ed.gov/pubs2018/2018117.pdf

McKeganey, N., Barnard, M., & McIntosh, J. (2002). Paying the price for their parents' addiction: Meeting the needs of the children of drug-using parents. *Drugs: Education, prevention and policy, 9*(3), 233-246.

Meldrum, R. C., Lehmann, P. S., Kakar, S., & Silverthorn, R. (2022). Revisiting the association between attachment to parents and adolescent substance use:

Conditional effects of parental disapproval. *American Journal of Criminal Justice,* https://doi.org/10.1007/s12103-022-09673-w

Meneses, R. A., & Akers, R. L. (2010). A comparison of four general theories of crime and deviance: Marijuana use among American and Bolivian university students. *International Criminal Justice Review*, *21*, 333–352.

Miller, J. M., Schreck, C., Tewksbury, R., & Barnes, J. C. (2015). *Criminological Theory: A brief introduction.* Boston, MA: Prentice Hall.

Miller, K. A., Stanley, L. R., & Beauvais, F. (2012). Regional differences in drug use rates among American Indian youth. *Drug and Alcohol Dependence, 126*(1-2), 35-41.

Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*(4), 674-701.

Moon, D. G., Hecht, M. L., Jackson, K. M., & Spellers, R. E. (1999). Ethnic and gender differences and similarities in adolescent drug use and refusals of drug offers. *Substance Use & Misuse, 34*(8), 1059-1083.

Moran, J. R., & Reaman, J. A. (2002). Critical issues for Substance Abuse prevention targeting American Indian youth. *The Journal of Primary Prevention, 22*(3), 201-233.

Murphy, S. M., & Rosenman, R. (2019). The “Real” number of Washington State adolescents using Marijuana, and why: A misclassification analysis. *Substance use & misuse, 54*(1), 89-96.

Nagasawa, R., Qian, Z., & Wong, P. (2000). Social control theory as a theory of conformity: The case of Asian/Pacific drug and alcohol nonuse. *Sociological Perspectives, 43*(4), 581-603.

Najaka, S. S., Gottfredson, D. C., & Wilson, D. B. (2001). A meta-analytic inquiry into the relationship between selected risk factors and problem behavior. *Prevention Science, 2*(4), 257-271.

National Congress of American Indians (NCAI). (2019). *Tribal juvenile justice: Background and recommendations.* http://www.ncai.org/policy-issues/tribal-governance/public-safety-and-justice/Tribal_Juvenile_Justice_Background_and_Recommendations.pdf

Newton, N. C., Champion, K. E., Slade, T., Chapman, C., Stapinski, L., Koning, I., Tonks, Z., & Teesson, M. (2017). A systematic review of combined student- and parent-based programs to prevent alcohol and other drug use among adolescents. *Drug and Alcohol Review, 36*(3), 337-351.

Nganga, L., Kambutu, J., & Han, K. T. (2019). Caring schools and educators a solution to disparities in academic performance: Learners of colors speak. *SAGE Open, April-June 2019,* 1-12.

Nguyen, N. N. (2021). The significance of school-based programs, school-based activities and community-based activities against marijuana use among adolescents. *Journal of Drug Issues, 51*(4), 711-721.

Norman, L. B., & Ford, J. A. (2015). Adolescent ecstasy use: A test of Social Bonds and Social Learning Theory. *Deviant Behavior, 36*(7), 527-538.

Özbay, Ö., & Özcan, Y. Z. (2006). A test of Hirschi's Social Bonding Theory: Juvenile

Delinquency in the High Schools of Ankara, Turkey. *International Journal of Offender Therapy and Comparative Criminology, 50*(6), 711-726.

Passarotti, A. M., Crane, N. A., Hedeker, D., & Mermelstein, R. J. (2015). Longitudinal trajectories of marijuana use from adolescence to young adulthood. *Addictive Behaviors, 45*, 301-308.

Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology, 36*(4), 859-866.

Payne, A. A. (2008). A multilevel analysis of the relationships among communal school organization, student bonding, and delinquency. *Journal of Research in Crime and Delinquency, 45*(4), 429-455.

Pedersen, W. (1991). Mental health, sensation seeking and drug use patterns: A longitudinal study. *British Journal of Addiction, 86*, 195-204.

Peterson, C. H., Buser, T. J., & Westburg, N. G. (2010). Effects of familial attachment, social support, involvement, and self-esteem on youth substance use and sexual risk taking. *The Family Journal: Counseling and Therapy for Couples and Families, 18*(4), 369-376.

Petraitis, J., Flay, B. R., Miller, T. Q., Torpy, E. J., & Greiner, B. (1998). Illicit substance use among adolescents: A matrix of prospective predictors. *Substance Use & Misuse, 33*(13), 2561-2604.

Piquero, A. R., Farrington, D. P., & Blumstein, A. (2003). The criminal career paradigm. *Crime and Justice, 30*, 359-506.

Piquero, A. R., Farrington, D. P., Welsh, B. C., Tremblay, R., & Jennings, W. G. (2009). Effects of early family/parent training programs on antisocial behavior and delinquency. *Journal of Experimental Criminology, 5*(2), 83-120.

Piquero, N. L., Gover, A. R., MacDonald, J. M., & Piquero, A. R. (2005). The influence of delinquent peers on delinquency: Does gender matter? *Youth & Society, 36*(3), 251-275.

Piquero, A. R., Jennings, W. G., Farrington, D. P., Diamond, B., & Reingle, J. M. (2016). A meta-analysis update on the effectiveness of early self-control improvement programs to improve self-control and reduce delinquency. *Journal of Experimental Criminology, 12*, 249-264.

Pratt, T. C., & Cullen, F. T. (2000). The empirical status of Gottfredson and Hirschi's general theory of crime: A meta-analysis. *Criminology, 38*(3), 931-964.

Pridemore, W. A. (2004). Review of the literature on risk and protective factors of offending among Native Americans. *Journal of Ethnicity in Criminal Justice, 2*(4), 45-63.

Rees, C., Freng, A., & Winfree Jr., L. T. (2014). The Native American adolescent: Social network structure and perceptions of alcohol induced social problems. *Journal of Youth & Adolescence, 43*(3), 405-425.

Reyhner, J., & Eder, J. (2017). *American Indian education: A history.* University of Oklahoma Press.

Robertson, A. A., Baird-Thomas, C., & Stein, J. A. (2008). Child victimization and parental monitoring as mediators of youth problem behavior. *Criminal Justice and Behavior, 35*, 755–771. DOI: 10.1177/0093854808316096.

Roussell, A. & Omori, M. (2016). Normalising desistance: Contextualising marijuana and cocaine use careers in young adults. *Sociology of Health & Illness*, *38*(6), 916-938.

Sandøy, T. A. (2019). Beyond personal reform: Adolescent drug-law offenders and the desistance process. *Punishment & Society*, *21*(5), 578-595.

Schroeder, R. D. (2015). Social bonding and crime. In K. M. Beaver, J. C. Barnes, & B. B. Boutwell (Eds.), *The nature versus biosocial debate in criminology: On the origins of criminal behavior and criminality* (pp. 218- 252). SAGE Pub.

Schroeder, R. D., & Ford, J. A. (2012). Prescription drug misuse: A test of three competing criminological theories. *Journal of Drug Issues*, *42*(1), 4-27.

Skeer, M, McCormick, M. C., Normand, S. T., Buka, S. L., & Gilman, S. E. (2009). A prospective study of familial conflict, psychological stress, and the development of substance use disorders in adolescence. *Drug and Alcohol Dependence* 104, 65–72.

Skewes, M. C., & Blume, A. W. (2019). Understanding the link between racial trauma and substance use among American Indians. *American Psychologist*, *74*(1), 88-100.

Simons-Morton, B., & Chen, R. S. (2006). Over time relationships between early adolescent and peer substance use. *Addictive Behaviors*, *31*(7), 1211-1223.

Spear, S., Longshore, D., McCaffrey, D., & Ellickson, P. (2005). Prevalence of substance use among White and American Indian young adolescents in a Northern Plains state. *Journal of Psychoactive Drugs*, *37*(1), 1-6.

Stanley, L. R., Harness, S. D., Swaim, R. C., & Beauvais, F. (2014). Rates of substance use of American Indian students in 8th, 10th, and 12th grades living on or near reservations: Update, 2009-2012. *Public Health Reports, 129*(2), 156-163.

Steinman, K. J. & Hu, Y. (2007). Substance use among American Indian youth in an Eastern city. *Journal of Ethnicity in Substance Abuse, 6*(1), 15-29.

Stewart, E. A. (2003). School social bonds, school climate, and school misbehavior: A multilevel analysis. *Justice Quarterly, 20*(3), 575-604.

Substance Abuse and Mental Health Services Administration. (2019). *Key substance use and mental health indicators in the United States: Results from the 2018 National Survey on Drug Use and Health* (HHS Publication No. PEP19-5068, NSDUH Series H-54). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Available at https://www.samhsa.gov

Sussman, S., Pokhrel, P., Ashmore, R. D., & Brown, B. B. (2007). Adolescent peer group identification and characteristics: A review of the literature. *Addictive Behaviors, 32*(8), 1602–1627.

Svensson, R. (2003). Gender differences in adolescent drug use: The impact of parental monitoring and peer deviance. *Youth & Society, 34*(3), 300-329.

Swaim, R. C., & Stanley, L. R. (2018). Substance use among American Indian youths on reservations compared with a National sample of U.S. adolescents. *JAMA Network Open, 1*(1), 1-11.

Swendsen, J., Burstein, M., Case, B., Conway, K. P., Dierker, L., He, J., & Merikangas, K. R. (2012). Use and abuse of alcohol and illicit drugs in US adolescents. *Arch Gen Psychiatry, 69*(4), 390-398.

Szlemko, W. J., Wood, J. W., & Thurman, P. J. (2006). Native Americans and Alcohol: Past, Present, and Future. *The Journal of General Psychology, 133*(4), 435-451.

Teichman, M., Barnea, Z., and Ravav, G. (1989). Personality and substance use among adolescents: A longitudinal study. *British Journal of Addiction, 84*, 18 I-190.

Tibbetts, S. G., & Whittimore, J. N. (2002). The interactive effects of low self-control and commitment to school on substance abuse among college students. *Psychological Reports, 90*(1), 327-337.

Tornay, L., Michaud, P-A., Gmel, G., Wilson, M. L., Berchtold, A., & Surís, J-C. (2013). Parental monitoring: a way to decrease substance use among Swiss adolescents? *European Journal of Pediatrics, 172*(9), 1229-1234.

Turanovic, J. J., & Pratt, T. C. (2017). Consequences of violent victimization for Native American youth in early adulthood. *Journal of Youth & Adolescence, 46*(6), 1333-1350.

Uggen, C., & Kruttschnitt, C. (1998). Crime in the breaking: Gender differences in desistance.*Law & Society Review, 32*(2), 339-366.

U.S. Census (2021). American Indian and Alaska Native Data Links. https://www.census.gov/about/partners/cic/resources/data-links/aian.html

U.S. Department of Health and Human Services. (2017). *Child maltreatment 2015.* https://www.acf.hhs.gov/sites/default/files/cb/cm2015.pdf

Vaeth, P. A. C., Wang-Schweig, M., & Caetano, R. (2017). Drinking, alcohol use disorder, and treatment access and utilization among U.S. racial/ethnic groups. *Alcoholism: Clinical & Experimental Research, 41,* 6-19. https://doi.org/10.1111/acer.13285

van Domburgh, L., Loeber, R., Bezemer, D., Stallings, R., & Stouthamer-Loeber, M. (2009). Childhood predictors of desistance and level of persistence in offending in early onset offenders. *Journal of Abnormal Child Psychology, 37*(7), 967-980.

Vazsonyi, A. T., Mikuška, J., & Kelley, E. L. (2017). It's time: A meta-analysis on the self-control-deviance link. *Journal of Criminal Justice, 48,* 48-63.

Villarreal, D. L., Nelson, J. A. (2018). Parental monitoring and adolescent risk behavior: The moderating role of adolescent internalizing symptoms and gender. *Journal of Child and Family Studies, 27,* 3627 – 3637. DOI: 10.1007/s10826-018-1203-4.

Villeneuve, M-P., F.-Dufour, I., & Turcotte, D. (2019). The transition towards desistance from crime among serious juvenile offenders: A scoping review. *Australian Social Work, 72*(4), 473-489.

Walters, K. L., Johnson-Jennings, M., Stroud, S., Rasmus, S., Charles, B., John, S., Allen, J., Kaholokula, J. K., Look, M. A., de Silva, M., Lowe, J., Baldwin, J. A., Lawrence, G., Brooks, J., Noonan, C. W., Belcourt, A., Quintana, E., Semmens, E. O., & Boulafentis, J. (2020). Growing from our roots: Strategies for developing culturally grounded health promotion interventions in American Indian, Alaska Native, and Native Hawaiian communities. *Prevention Science, 21(*Suppl 1), 54-64.

Warr, M. (1998). Life-course transitions and desistance from crime. *Criminology, 36*(2),

183-216.

Webb, J. A., Bray, J. H., Getz, J. G., & Adams, G. (2002). Gender, perceived parental monitoring, and behavioral adjustment: Influences on adolescent alcohol use. *American Journal of Orthopsychiatry, 72*(3), 392-400.

Weerman, F. M., & Hoeve, M. (2012). Peers and delinquency among girls and boys: Are sex differences in delinquency explained by peer factors? *European Journal of Criminology, 9*(3), 228-244.

Wells, L. E., & Rankin, J. H. (1988). Direct parental controls and delinquency. *Criminology, 26*(2), 263-286.

Whitbeck, L. B., McMorris, B. J., Hoyt, D. R., Stubben, J. D., & Lafromboise, T. (2002). Perceived discrimination, traditional practices, and depressive symptoms among American Indians in the Upper Midwest. *Journal of Health and Social Behavior, 43*(4), 400-418.

Whitesell, N. R., Asdigian, N. L., Kaufman, C. E., Big Crow, C., Shangreau, C., Keane, E. M., Mousseau, A. C., & Mitchell, C. M. (2014). Trajectories of substance use among young American Indian adolescents: Patterns and predictors. *Journal of Youth & Adolescence, 43*(3), 437-453.

Williams, J. G., & Smith, J. P. (1993). Alcohol and other drug use among adolescents: Family and peer influences. *Journal of Substance Abuse, 5*(3), 289-294.

Wills, T. A., & Cleary, S. D. (1999). Peer and adolescent substance use among 6th – 9th graders: Latent growth analyses of influence versus selection mechanisms. *Health Psychology, 18*(5), 453-463.

Wills, T. A., Cleary, S. D., Filer, M., Shinar, O., Mariani, J., & Spera, K. (2001). Temperament related to early-onset substance use: Test of a developmental model. *Prevention Science, 2*(3), 145-163.

Young, R. S., & Joe, J. R. (2009). Some thoughts about the epidemiology of alcohol and drug use among American Indian/Alaska Native populations. *Journal of Ethnicity in Substance Abuse, 8*(3), 223-241.

Zapata, L. B., Hillis, S. D., Marchbanks, P. A., Curtis, K. M., & Lowry, R. (2008). Methamphetamine use is independently associated with recent risky sexual behaviors and adolescent pregnancy. *Journal of School Health, 78*(12), 641-648.

Zhang, S. Y., & Demant, J. (2021). Effects of self-control, drug-use peers and family attachment on drug use among Chinese users: A gender-specific analysis. *Drug and Alcohol Review,* 1-8.

CURRICULUM VITAE

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**EDUCATION HISTORY**

2022 Ph.D., Criminal Justice, University of Louisville
Dissertation: *Factors Influencing American Indian Adolescents' Abstention and Desistance from Drug Usage.* Prospectus Defended: 02/2022
Committee: Dr. Viviana Andreescu (Chair), Dr. Gennaro Vito, Dr. Elizabeth Grossi, and Dr. Mark Austin

2012 MSSW, University of Louisville – Social Work with Alcohol and Drug Counselor Specialization

2003 BA, University of Louisville – Psychology with Natural Science concentration

**EMPLOYMENT HISTORY**

2002-Present: Corrections Supervisor II, Louisville Metro Department of Corrections
2013-Present: Counselor, New Beginnings Education and Counseling Center, Inc.
2018 – 2021: Adjunct Faculty, Department of Criminal Justice, University of Louisville
2014-2017: Counselor, Alcohol Education and Counseling Services, Inc.
2013-2016: CD Counselor II, Jefferson Alcohol & Drug Abuse Center
2007-2009: Residential Counselor, Brooklawn Child & Family Services

**CERTIFICATIONS AND LICENSURE**

2015-present: Certified Social Worker #7292
2016-present: Licensed Clinical Alcohol and Drug Counselor #166934
2014-present: Autonomous Batterer Intervention Provider #0290
2012-present: Prime for Life Driving Unimpaired 20 Hour Education Program

**AWARDS**

2013 Supervisor of the Year

2013 Volunteer of the Year

**TEACHING EXPERIENCE**

2013-present: Batterer Intervention Provider (Domestic Violence and Anger Management)
2013-present: PRIME for LIFE (DUI)
2017-present: Marijuana Education Program
2018 – 2021: CJ 415: *Substance Abuse, Crime and Criminal Justice,* Department of Criminal Justice, University of Louisville, Spring 2018 – enrollment 41; Spring 2019 – enrollment 34; Spring 2020 – enrollment 28; Spring 2021 – enrollment 44/on-line.

**CONFERENCE PRESENTATIONS**

2017 Ruben Pavlov, Kristin Swartz, and Ashley French. Disentangling the effects of trauma experienced at work and at home and the mental health of Correctional Staff. American Society of Criminology, Philadelphia, PA.

2017 Viviana Andreescu and Ruben Pavlov. Pro-violence definitions and violent behavior among college students in USA and Canada. Poster session. American Society of Criminology, Philadelphia, PA.

2018 Viviana Andreescu and Ruben Pavlov. Examining violence perpetration against intimate partners among female college students in United States and the European Union. Southern Criminal Justice Association, Pensacola Beach, FL.

2018 Viviana Andreescu and Ruben Pavlov. Violence perpetration in early adulthood among College students in Russia and the United States. Indiana Academy of Social Sciences Annual Conference, New Albany, IN.

2018 Ruben Pavlov. The social dynamics of family violence. 20th Ending Sexual Assault and Domestic Violence Conference, Lexington, KY.

2019 Ruben Pavlov. Elder Abuse. 21st Ending Sexual Assault and Domestic Violence Conference, Lexington, KY.

**PROFESSIONAL DEVELOPMENT**

2007 National Incident Management System (NIMS)
2007 Initial Safe Crisis Management Training
2007 Family Violence Awareness Training
2010 Survival Strategies: Facing the Challenges of Reentry
2010 Family Engagement
2010 Verbal De-escalation Skills for Support Staff
2010 Boundaries/Confidentiality
2010 Managing Conflict in the Workplace
2010 Advanced Motivational Interviewing Training
2011 Ethics/Dual Relationships for Clinicians
2011 Bridging the Gap: 180 Days is not enough
2011 Client Violence and Social Worker Safety
2011 Moral Reconation Therapy
2012 Offender Employment Specialist: Building Bridges
2012 Women's Risk Needs Assessment Administrators' Training
2012 Your role: Responding to Sexual Abuse
2012 LSI-R Assessment Training
2012 Preparing for the CSW & LCSW Examination
2012 Offender Workforce Development Specialist Training
2012 Kentucky School of Alcohol and Other Drug Studies
2012 Kentucky DUI Assessment Instrument Training
2012 First Aid/CPR/AED/Bloodborne Pathogen Instructor
2012 PRIME for Life Training
2013 Reporting Physician Quality Reporting System (PQRS) Measures in Clinical Practice
2013 Risky Business: Understanding Risk Management and Malpractice Protection
2013 Understanding Drug & Alcohol Addiction
2013 Family Law 101
2013 Navigating the New Multigenerational Workplace in Child Welfare
2013 Batterer Intervention Provider Training
2013 Emerging Issues in Adolescent Health: Implications for Clinical Social Work Practice
2013 The Underage Drinking Prevention Conference
2013 Engaging Men in the Prevention of Violence against Women: Implications for Social Work
2013 Kentucky School of Alcohol and Other Drug Studies
2013 15th Ending Sexual Assault and Domestic Violence Conference
2013 Keeping an Eye on the Pharm: Educating and Equipping the Faith Community
2014 Reaching Individuals Beyond the Bars Conference
2014 Motivational Interviewing
2014 Employment and Transitions over the Lifespan
2014 Substance Use and Violence Against Women
2014 Trauma-Informed Care within an Organization
2014 Forensic SW in KY: Evidence-informed and Evidence-Based Approaches
2014 16th Ending Sexual Assault and DV Conference
2014 Evidence Based on Forensic Social Work Practice
2015 HIV/AIDS: Medical and Social Issues
2015 Pediatric Abusive Head Trauma
2015 Motivational Interviewing – Advanced: Developing Discrepancy
2015 Setting and Maintaining Professional Boundaries: An Ethical Framework

2015 Mindfulness-Based Wellness and Resiliency Training
2015 Domestic Violence
2015 KY School of Alcohol and Other Drug Studies
2015 Group Therapy
2016 MAT and Harm Reduction Strategies in Opioid Treatment
2016 Suicidality: Assessment, Treatment and Management
2016 Parenting After Trauma
2016 Strong Collaborative, Strong Families: Co-located DV Services within Child Welfare
2016 Working with Men who Batter
2016 Individual Counseling and Addictions
2016 LCSW Supervision Training
2016 Intimate Partner Violence and Social Work: Factors for Consideration
2016 Social Work Ethics: Addressing Complexity
2016 Group Counseling and Addictions
2016 Trauma-Informed Support for Children Exposed to Domestic Violence
2017 An Overview of Changes in DSM-5
2017 Delphi U: Principles of Online Course Design
2017 KY School of Alcohol and Other Drug Studies
2017 Implementing Safer Suicide Care with a Focus on Substance Abuse and Chronic Pain
2020 Pediatric Abusive Head Trauma and Safe Sleep for Social Work Professionals
2020 Mindfulness seminar
2020 Borderline Personality Disorder
2020 Dialectical Behavioral Therapy
2020 DSM-5 for Social Workers
2021 Social Work Ethics: Addressing Complexity
2021 Trauma Focused Cognitive Behavioral Therapy
2021 Suicide Risk Assessments for Clinicians
2021 Case Management with Substance Abusers
2021 Crisis Intervention
2022 Motivational Interviewing for Addictive Behavior
2022 Professional Ethics for Certification of Alcohol and Drug Counseling
2022 Using Cognitive Behavioral Therapy for Addictive Behavior

## SERVICE

Mayor's Community Conversations
Incarcerated Battered Women's Advocacy Project with Kentucky Domestic Violence Association
Kentucky Association of Volunteer Administrators
Mayor's Volunteer Committee
Louisville Metro Reentry Task Force
Louisville Urban League
Shawnee JRI Project Team
Shawnee RING meetings
Newburg RING meetings

## RESEARCH INTERESTS

Victimization
Family Violence
Domestic Violence
Substance Abuse and Crime
Human Trafficking and Sexual Exploitation

**TEACHING INTERESTS**

Crime and Justice in the United States
Criminal Behavior
Juvenile Justice
Violence in the United States
Domestic Violence
Corrections in the United States
Substance Abuse, Crime and Criminal Justice

**PROFESSIONAL AFFILIATIONS**

2016-present: Academy of Criminal Justice Sciences
2016-present: American Society of Criminology
2016-present: Southern Criminal Justice Association
2017-present: Kentucky Council on Crime and Delinquency
2018-present: Indiana Academy of Social Sciences

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