FAMILY STRUCTURE AND MARIJUANA USE AMONG ADOLESCENTS

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Family structure as a predictive variable of juvenile delinquency has been studied for the last hundred years. This relationship originated due to societal belief that divorce was detrimental to adolescents. Due to the changing societal roles in the United States, family structure has been changing. More children are growing up in non-intact families, such as single-parent households, households with stepparents, cohabitating families, and households without a parent present. To study the effect family structure has on juvenile delinquency, researchers have utilized social control theory, differential association, self-control theory and general strain theory to conceptualize variables to explain why family structure influences delinquent behavior. A review of previous literature on this topic indicates that living in intact households, which are households with two biological parents who are married, have, on average, the lowest rates of delinquency. This thesis investigates the relationship between family structure and lifetime marijuana use among eighth and tenth grade adolescents in the United States through the use of secondary data analysis of Monitoring the Future Study, 2012. The results provide support for the relationship between family structure and lifetime marijuana use.

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CHAPTER 1

INTRODUCTION

History of Family Structure

The structure of the family in the United States has changed drastically in the last century. According to the Centers for Disease Control and Prevention, the divorce rate in 1900 was 0.9 divorces per 1,000 people compared to 3.5 divorces per 1,000 people in 2009 (1973, p. 27; 2010, p. 5). During the beginning of the twentieth century, several studies were conducted analyzing the effect a "broken home" has on juvenile delinquency. Broken home is defined as "a home where one (or both) natural parent is permanently absent because of events such as death, desertion, or divorce" (Shoemaker, 2000, p. 173). Between 1900 and 1932, the variable broken home went through a period of acceptance among researchers because society viewed divorce as a threat to adolescent well-being. During this period, sociologists and Child Savers had the same agenda. Sociologists viewed the family as the most important institution and thus, divorce was seen as problematic and leading to instability in the household. These two groups also worried about the growth of cities because rapid urbanization could lead to a lack of familial bonds, cultural tradition, and stability (Wilkinson, 1974). Child Savers supported sociologists because they wanted to defend the traditional family and they put emphasis on the importance of intact families on the socialization of children (Wilkinson, 1974). Fourteen studies were conducted during this period and all found a link between the broken home and delinquency. Looking at family structure of juveniles who have interacted with the court system, Bushong (1926) found that families that had "abnormal" family structure, such as divorced households, were producing more juvenile delinquents than families with both biological parents present. Despite these results, broken family as an indicator of juvenile delinquency started to lose support.

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From 1933 to 1950, the family experienced a period of declining importance. The school and city life were starting to be seen as methods of socialization for adolescents. Because of these additional avenues of socialization, divorce was not viewed as detrimental as it was previously. Divorce was viewed as a method of adaptation and "a broken home would not necessarily be considered unhealthy and therefore a contributor to delinquency" (Wilkinson, 1974, p. 733). Sociologists and Child Savers were also taking a different stance. Sociologists concluded that urban life was not as detrimental to the family as previously thought and more women were moving beyond the role of homemaker or reformer (Wilkinson, 1974). Another major contributor to this period is an article written by Shaw and McKay (1932). This study did not find support for the broken home variable and set a tone of excluding it from research for several reasons (Wilkinson, 1974). First, Shaw and McKay (1932) argue that "it is the belief that the broken home is one of the most important causes of delinquency [that] is widely accepted" and that this belief rests not on statistical probability but on previously faulty research (p. 514). The limitations of previous research included failing to control for important variables like age or nationality and utilizing control groups that did not match the experimental group. Secondly, Shaw and McKay (1932) argue that the dynamics of a family are complicated and that simply considering whether a family is intact misses the nuanced interactions that occur at the familial level. Lastly, Shaw and McKay's (1932) research did not find a meaningful difference in rates of delinquent behavior between a control group and an experimental group and thus did not find support for a broken home theory of delinquency.

Since the 1950s, there has been a renewed interest in family structure and juvenile delinquency. Wilkinson (1974) argues that this renewed interest arose because family structure may still be important and also because studies that do not look at the family were not yielding

answers. Due to this resurgence of the broken home as an acceptable variable, numerous research has been published on this topic. There is a consensus that family structure does influence delinquent behavior among adolescents (Gove & Crutchfield, 1982; Coughlin & Vuchinich, 1996; Bushong, 1926; Wilkinson, 1974; Schroeder, Osgood, & Oghia, 2010). Despite this consensus, some researchers argue that the relationship between family structure and delinquency is weak or spurious. Shoemaker (2000) argues "evidence consistently points to the importance of parent-child relationships as a key factor in the explanation of delinquency" (p. 180). There appears to be a divide among researchers when it comes to the topic of family structure. On one hand, researchers argue that the structure of a family plays a role in the outcomes of adolescents, whereas, on the other hand, researchers argue that it is not necessarily the structure but rather the interactions and situations that occur within a household that affect adolescents. This dilemma may never be resolved, but this research hopes to provide more evidence as to what role family structure plays in adolescent marijuana use.

Juveniles and Marijuana Use

Illicit drug use has been a major public health concern for decades and the concern is even greater when dealing with adolescents. According to Monitoring the Future survey, in 1979 about half of all twelfth graders in public and private schools in the United States had used marijuana at least once in the previous year. By 1992, this rate of use had fallen to about 22% marking an all-time low. This low point was soon followed by an uptick in use during the 1990s and from about 2010 to 2012, the percentage of twelfth graders who have used marijuana in the previous twelve months was around 25%. Key findings from Monitoring the Future in 2012 indicate that historically a decline in the perceived risk of marijuana use among adolescents is

shortly followed by an increase in rates of marijuana use, suggesting a correlation between the attitude and the behavior (Johnston, O'Malley, Bachman, & Schulenberg, 2013).

According to the United States Department of Justice Drug Enforcement Administration, marijuana is "a mind-altering (psychoactive) drug, produced by the Cannabis sativa plant" ("Drugs of Abuse," p. 68). Hashish and hashish oil are drugs made from the cannabis plant but have a much stronger effect than marijuana. Delta-9-tetrahydrocannabinol, referred to as THC for short, is one component of marijuana that scientists believe causes it to be a psychoactive drug. By smoking marijuana, THC enters the bloodstream and is carried to the brain. Once in the brain, the THC "connects to specific sites called cannabinoid receptors on nerve cells and influences the activity of those cells" ("Drugs of Abuse," p. 68). Many of these receptors are responsible for functions such as memory, coordination and time perception. Because these receptors are connected to those bodily functions, some of the short-term effects of marijuana use include "problems with memory and learning, distorted perception, difficulty in thinking and problem-solving and loss of coordination" ("Drugs of Abuse," p. 68). In addition to psychological effects, marijuana can also have long-term physical effects that include asthma, bronchitis, emphysema, and cancer. According to research conducted by Fergusson and Horwood (1997), use of marijuana prior to the age of sixteen is strongly correlated with "higher rates of later substance use, juvenile offending, mental health problems, unemployment and school dropout" (p. 279). As of 2012, the time that the data for this research was collected, marijuana was illegal in the United States. Due to the short-term and long-term psychological and physical effects of marijuana use, the illegality of marijuana and marijuana being a stepping stone to other drug use, marijuana use among adolescents is seen as a delinquent behavior.

Theory

There are several theories regarding juvenile delinquency and criminal offending that this paper explores. The theories considered in this research include social control and bonding theory, self-control theory, general strain theory, and differential association. The literature reviewed in this paper finds the most support for social control and bonding theory, differential association, and general strain theory. To explain the differences in single-mother households and single-father households, the same sex hypothesis and the maternal hypothesis are explored as they relate to adolescent marijuana use.

The Purpose of this Study

The purpose of this study is to investigate the relationship between family structure and juvenile delinquency, which is measured by lifetime marijuana use by adolescents. Data for this study comes from the 2012 Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth survey of eighth and tenth graders. This data is used to help answer the question as to whether or not family structure influences rates of adolescent marijuana use. The differences in rates of marijuana use among adolescents in single-parent households with the same gendered parent and adolescents in single-parent households with the opposite gendered parent are also explored.

Research Questions

The following research questions are asked in this study:

1. Does family structure influence rates of marijuana use? That is, are rates of delinquency different for families with two parents present than for single-parent households?

2. Is the effect on marijuana use different for single-mother households than for single-father households?

3. Does the gender match-up of the adolescent and the parent in single-parent households matter?

Organization of the Following Chapters

Chapter 2 provides a review of the previous literature and the theoretical framework used in this study. Extant research on intact households, single-parent households, cohabitating households and stepfamily households is presented. Theory, including social control/bonding theory, differential association, strain theory, and self-control theory, are presented within the discussion of literature. A discussion of the maternal hypothesis and the same-sex hypothesis are presented within the review of single-mother and single-father households research. Chapter 3 provides information regarding the methods employed for this research and a detailed description of the dataset used. The dependent variable, the independent variables, and the control variables are discussed in this chapter as well. The chapter concludes with a discussion of the data screening, the analytic strategy used, and the hypotheses that are tested. Chapter 4 presents the analyses and findings with a detailed discussion of the descriptive statistics and the results from the ordinary least squares regression. The final chapter presents a conclusion of the research, the limitations of the study, and suggestions for future research.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Introduction

In this chapter, extant literature and theoretical research on family structure and juvenile delinquency are presented. First, this chapter discusses intact households, which are households where the biological parents are married and living together. Next single-parent households are addressed with an emphasis on mother-only households as compared to single-father households. The same-sex hypothesis and the maternal hypothesis are both explored when discussing single-parent households. Lastly, research on the effects of other household types, including cohabitating households and stepfamily households, on delinquent adolescent behavior is explored.

Intact Households

For the purpose of this discussion on intact households, intact households are defined as a household where the biological parents are married and living together. To assess the effect of family structure, a review of previous literature is presented. Regarding the effect family structure has on adolescent drug use, Broman, Li, and Reckase (2008) argue that family structure does not necessarily have a direct effect but rather an indirect effect through other variables. Broman et al. (2008) hypothesized that the relationship between adolescent drug use and family structure would be meditated by parenting, peer substance use, neighborhood composition, and religiosity. Using data from the National Longitudinal Study of Adolescent Health and employing structural equation modeling, Broman et al. (2008) looked at three family structures: two biological parents who are married, single-parent household, and the third category included all other types of family structure, such as a step parent and a biological parent and grandparents.

Drug use included a measure regarding alcohol intake and another regarding marijuana use. Broman et al. (2008) found that the direct effect of family structure on adolescent drug use was not statistically significant. Thus, they found support for the hypothesis that the relationship between family structure and drug use is mediated by other variables. Those mediating variables were parenting, peer drug use, and religiosity with peer drug use having the biggest effect. However, there is an issue with the way parenting was measured. One measure of parenting was how the adolescent viewed his/her relationship with the mother. Five questions were asked of the adolescent regarding the degree of warmth the child feels, the level satisfaction of communication, if the child feels cared for, degree of closeness, and the happiness of the relationship (Broman et al., 2008). The problem with this variable is that those children who live in households without a mother would not be able to answer these questions. Though it is not addressed in the research, this variable seems biased to those families that have a mother present. This would make it difficult to capture parental attachment an adolescent feels for other parental figures. Ultimately, Broman et al. (2008) argue that "family structure is associated with differences in peer contacts, neighborhoods, religious behavior, and even parenting" and this relationship can lead to delinquency or drug use (p. 1645).

Barrett and Turner (2006) also investigated the possible mediating variables between family structure and substance abuse. In order to try to understand why family structure influences substance abuse among adolescents, Barrett and Turner (2006) apply theory to variables that are related to family structure. First, they draw from general strain theory. General strain theory rests on the idea that strain from relationships or events can lead to negative emotions. As it relates to family, strain can result from abusive parent-child interactions, extreme discipline from parents, or lack of economic resources. Physical or emotional trauma, such as the

death of a parent or abuse from a parent, can lead to strain, which can result in delinquency. Strain can result from the loss of a positive stimuli, like the death of a parent, or by the introduction of a negative stimuli, like physical abuse from parents (Agnew, 2001). Agnew (2001) argues "criminal coping may be the only or the most effective way to address the perceived injustice and reduce the perceived magnitude of that type of strain" (p. 337). In addition to this, strains are more likely to result in crime or delinquency when those strains are "seen as unjust, are seen as high in magnitude, are associated with [or caused by] low social control, and create some pressure or incentive to engage in criminal coping" (Agnew, 2001, p. 326).

Applying this theory, Barrett and Turner (2006) looked at socio-economic status. Adolescents living in a household with limited economic resources may feel that the strain is of high magnitude. When strain is viewed as high in magnitude, it can be difficult for adolescents to cope in a noncriminal way. To illustrate, if an adolescent's parents lose their jobs this puts a strain on the family as a whole. If the adolescent is too young to legally work, he or she may steal the things he or she needs and is unable to obtain legally. Compounding this issue is that "strain often reduces the ability to cope… [and] generates more anger and so also influences the perceived costs of crime" (Agnew, 2001, p. 332). Thus, the higher the magnitude of strain, the more likely an adolescent will cope through delinquent behavior. Economic strain more than likely is also caused by low social control, meaning the adolescent had no control over the situation. This would only add to the strain the adolescent feels. Regarding socio-economic status, Barrett and Turner (2006) found that "only 15% of children in two-parent families live in low-income families, compared to 65% of single-mother families, 45% of single-father families and 60% of households with neither parent present" (p. 110). Lower economic status has been

linked to higher levels of juvenile delinquency because of the strain adolescents feel and the stress they encounter due to lack of economic resources. Engaging in delinquency or substance abuse may be a coping mechanism (Barrett and Turner, 2006).

Secondly, Barrett and Turner (2006) applied differential association to their research. Developed by Edwin H. Sutherland, this theory states "a person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to violation of law" at that specific time (Sutherland, Cressey, & Luckenbill, 1992, p. 91). Definitions in this context refer to the attitudes an adolescent has. If those attitudes at the time support deviant behavior over obeying the law, then the adolescent will be deviant. Barrett and Turner (2006) apply differential association to family processes, meaning that children model parents' behavior and if parents engage in substance abuse, it is likely children will as well. While this theory provides insight as to why adolescents commit delinquent acts, it is a difficult theory to test because an "excess of definitions" or attitudes can be difficult to measure. It is also important to note that Sutherland thought of this theory as a hypothesis and "differential association is not a precise statement of the process by which a person becomes a criminal" (Sutherland et al., 1992, p. 102).

Barrett and Turner (2006) also looked at family processes as they relates to social control and bonding theory. Shoemaker (2000) states that the "assumption of social control theory is that bonds and attachments are a strong protection against delinquency" (p. 167). Social institutions, such as the school, provide the bond or connection between the adolescent and the larger society. The stronger these bonds are, the lower the delinquency. As Hirschi (1977) argues, nondelinquents and delinquents both have motivation to commit crime. What separates nondelinquents from delinquents is the extent to which this motivation is controlled by restraints

from the larger society. There are four elements to the social bond; Barrett and Turner (2006) focus on attachment. Attachment is the "connection one feels toward other persons or groups and the extent to which one cares about their opinions and feelings" (Shoemaker, 2000, p. 168). As it relates to family structure, attachment would be the connection a child feels to his/her parent(s). Adolescents who lack attachment with their parent are "more likely to commit delinquent acts because they have less to lose," meaning the respect they get from their parents (Hirschi, 1977, p 332). Thus, the higher the attachment, the lower the rates of offending.

Lastly, Barrett and Turner (2006) examined friendship networks and once again drew from differential association theory. According to differential association, "all behavior is learned and thus delinquent acts are learned behavior, the learning of delinquent behavior primarily occurs in small, informal group settings, and the learning of delinquent behavior develops from collective experiences [and] from specific situational, current events" (Shoemaker, 2000, p. 139). Barrett and Turner (2006) state that adolescents who have a higher number of delinquent friends are more likely to engage in delinquency compared to adolescents with a lower number of delinquent friends. This relates to family structure because adolescents whose parents are not as active in their children's lives may spend more time with peers. Households that have only one active parent may have a more difficult time being active in their children's lives due to numerous commitments. Lastly, Barrett and Turner (2006) argue that adolescents who live in a blended or single-family environment experience more stressful events because of the family transitions they live through and the stressors their family members live through because of a blended lifestyle.

Barrett and Turner (2006) interviewed 1803 adolescents in South Florida between 1998 and 2000. Family structure was measured in four ways: mother-father household, single-parent

household, single parent household with an adult relative present, and households where a step parent is present. Delinquency was measured by twenty-two questions relating to substance abuse and dependence. Utilizing ordinary least squares regression, Barrett and Turner (2006 found that living in an intact family could provide protection from substance abuse and dependence. This protection is observed because adolescents from intact families "have high levels of perceived family support and authoritative parenting, lower exposure to stress and life-time traumas, lower substance use by family and lower parental approval of substance use" (Barrett & Turner, 2006, p. 115-116). The researchers also found that adolescents who live in single-parent households with an additional relative present had similar rates of substance use as intact families. It is postulated that the presence of an additional relative increases control and attachment and also reduces the amount of stress and strain the adolescent feels in single-parent households. To conclude, Barrett and Turner (2006) find the most support for differential association and general strain theory as it explains the high levels of delinquency in single-parent households. Barrett and Turner (2006) argue that adolescents who live in single parent households do not have the buffer of an additional relative and therefore have higher rates of association with delinquent peers and experience more strain due to lack of emotional support.

Hollist and McBroom (2006) also investigated the relationship between marijuana use and whether an adolescent comes from an intact family or from a non-traditional family. Hollist and McBroom (2006) draw from social control and bonding theory and differential association to explain the relationship between these two variables. Data used for this research comes from the first wave of the Montana State Needs Assessment Prevention Youth Survey in 1998. This survey was administered to eighth, tenth, and twelfth graders. Family structure was measured in a similar way that Barrett and Turner (2006) measured it: intact family, single parent household,

stepparent household, and nonparent household. Delinquency was measured through the number

times the adolescent consumed alcohol or smoked marijuana in the last thirty days and also in

his/her lifetime. To address social bonding theory and differential association theory, Hollist and

McBroom (2006) measure impulsivity, family tension, and association with delinquent peers as

control variables. Consistent with other research, two-parent households had lower rates of

substance use for both male and female adolescents compared to households with only one

parent present, but the relationship between family structure and substance use was only a

moderate one. Hollist and McBroom (2006) argue that family structure should be viewed as "a

direct predictor of youths' marijuana usage" because it "influences and operates in conjunction

with family process and situational variables such as parental attachment and association with

delinquent peers and beliefs" (p. 991). Children who live in households where two parents are

present experience higher rates of control and parental attachment, which are correlated with

lower rates of delinquent beliefs and behavior. Children in intact households also reported having

fewer friends or siblings who used marijuana. Hollist and McBroom (2006) suggest that the best

situation for a child is to be in a two-parent household that has a low level of tension. Ultimately,

Hollist and McBroom (2006) find support for both social control and bonding theory and

differential association as it relates to type of family structure and marijuana use among

adolescents.

<center>Single-Parent Households</center>

Several studies have found a relationship between single-parent households and juvenile

delinquency (Thomas, Farrell, & Barnes, 1996; Garis, 1998; Hemovich & Crano, 2009; Demuth

& Brown, 2004; Schroeder et al., 2010). In 1980, the number of single-parent households was

6,061,000 or 19.5% of households. The number of single-parent households has increased

dramatically in the last three decades. In 2008, there were 10,536,000 single-parent households, which represented 29.5% of households (United States Census Bureau, 2012). Because there has been a dramatic increase in single-parent households over the last two decades, more researchers have been focusing on the relationship between this type of family structure and delinquent behavior among adolescents.

McLanahan (1994) argues that children who grow up in a household with only one parent present have on average higher rates of school dropout, teenage pregnancy, and delinquency when compared to children who grow up in a household with two parents present. These results persist even when controlling for the race of the parent, the parent's education level, whether or not the child was born when the parents were married, and even if the parent remarries later on. While these negative outcomes for children are correlated with living in a single-parent household, McLanahan (1994) argues that the household structure is only part of the cause. Income, the nature of the parent-child relationship, and the community also play an important role. Several other studies have focused on the effect single-parent households have on delinquent behavior and while the structure is important, like McLanahan (1994) claims, researchers look to other factors that could possibly influence delinquency among adolescents.

Schroeder, Osgood, and Oghia (2010) are three researchers who have found support for the relationship between single-parent households and delinquency in addition to finding support for cohabitating families and delinquency. Schroeder et al. (2010) used data from the first and third waves of the National Youth Study which took place in 1977 and 1979, respectively. Adolescents who lived in single-parent households during the first wave of the study had higher rates of offending than those adolescents who were in a two-parent environment (Schroeder et al., 2010). Interestingly though, Schroeder et al. (2010) found that adolescents who transitioned

into a single-parent household did not experience an increase in juvenile delinquency. Schroeder et al. (2010) argue that these results were seen because "baseline levels of parental attachment condition the impact of family transitions on delinquent offending, suggesting that strong parent-child relationships prior to family transition can buffer the negative outcomes associated with a family transition" (p. 597). This finding gives support for social control and bonding theory, where the attachment level prior to the transition protects the child from becoming delinquent. As stated above, the data Schroeder et al. (2010) used comes from the National Youth Study. While this survey provides researchers with longitudinal data, the data is over thirty years old. This does not mean that the results do not provide insight into family dynamics and delinquent behavior, but this field of study would benefit greatly from a replicated study with more timely data.

Garis (1998) set out to study the effect single parent households have compared to the effect single parenting has on youth at-risk behavior. Regarding family structure, Garis (1998) set out to test the following: does the rate of at-risk behavior decline with the involvement of the father in the child's life? Garis (1998) also investigated whether "divorce leads to increases in youth at-risk behavior, as separate from whether children being raised by one parent does" (p. 1084). Data used for this research was gathered on eighth graders by the National Center for Educational Statistics in 1988 and four years later in 1992. Garis (1998) wanted to study the effect of family structure at the first wave (eighth grade) had on sexually activity and drug/alcohol use at the second wave (twelfth grade). Garis (1998) separated the data into two categories for single parent households: those children who lived with their mother all of the time or most of the time and those children who lived with their father all of the time or most of the time. Another variable included was if the parents were married or single. Garis (1998)

makes a note that living with your mother or father most of the time is measuring something fundamentally different than if the mother or father is a single-parent or married; however, Garis (1998) does not clarify exactly what is meant by this.

Using regression models, Garis (1998) found that single-parent households do not increase the likelihood that adolescents engage in the defined at-risk behaviors as long as "both parents remain involved in the upbringing of their children" (p. 1099). Another interesting result to note regards stressors that adolescents encounter. Garis (1998) argues that divorce can be a major stressor for adolescents but "the real stressor is less with the change in their parents' marital status and far more with the loss of the father's input" (p. 1099). This relates to general strain theory, which states that the loss of positive stimuli, such as a father who ends all interaction after a divorce, can lead to an increase in stress and therefore, result in delinquency. Other research has studied the effects of mother-only versus father-only and the involvement of a nonresident father figure in more detail.

Mother-only versus Father-only Households

Accepting findings that single-parent households are related to delinquency, several researchers have studied the specific effects of single-mother households compared to single-father households. While some researchers analyze mother-only and father-only households strictly by the gender of the parent, many researchers approach this topic by use of two theoretical models that focus on the gender similarities and differences between parent and child. These two approaches are referred to as the maternal hypothesis and the same- sex hypothesis. The maternal hypothesis states that "youth living with only their mothers are less likely to become involved in delinquent behavior than those living with only their fathers (Hemovich & Crano, 2009, p. 2101). Researchers argue that youth living with a single-mother compared to a

single-father are more likely to develop stronger emotional bonds and are thus more likely to be better adjusted. Another approach to single-parent households is the same-sex hypothesis. This hypothesis states that the child in a single-parent household will have better behavioral outcomes if the parent is of the same sex as the child. Overall, research still remains unclear as to which hypothesis receives the most support.

Due to an increase in fathers seeking custody of children after divorce in the 1970's, Santrock and Warchak (1979) set out to study the effects on children's social development between households where a mother has custody, a father has custody, and where both parents have custody. Drawing from the same-sex hypothesis, Santrock and Warchak (1979) argue that parent-child structures that are of the opposite sex could result "in a relationship that is overly coercive and demanding, smothering and too nurturant in others" (p. 115). With this said, Santrock and Warchak (1979) state that the parenting style has the greatest influence on behavioral outcomes, meaning that it is the context of the relationship that determines the outcomes for the child. Other important factors the researchers considered included day care, presence of relatives, and the relationship between the two parents. Using self-collected data, sixty predominantly White and middle-class families in the Dallas/Fort-Worth area were studied. The children were aged 6-to-11 years old and a third of the children lived in households with only a father present, another third lived with only a mother, and the remaining third lived with both mother and father. Santrock and Warchak (1979) found that boys in father-only households had better behavioral outcomes than girls in father-only households. These behavioral outcomes included "warmth, self-esteem, anxiety, anger, demandingness, maturity, sociability, social conformity, and independence" (Santrock & Warchak, 1979, p. 117). However, the researchers found that regardless of the gender of the parent, the relationship and type of parenting style

were more predictive of behavioral outcomes. This research did not find support for either the same-sex hypothesis or the maternal hypothesis.

Also utilizing the same-sex hypothesis, Thomas, Farrell, and Barnes (1996) argue that it is more difficult for mothers to socialize their sons than their daughters. In single-mother households, girls still experience constraints from their mothers but boys experience fewer constraints. Because of this, Thomas et al. (1996) hypothesized that not only would adolescents from single-parent households have higher rates of delinquency than adolescents from two-parent households, but that boys from single-mother households would have higher rates of delinquency than girls from single-mother households. The researchers also hypothesized that adolescents living in single-mother households who had involvement from nonresident fathers would experience a buffering effect from delinquency (Thomas et al., 1996). Data used in this study comes from a longitudinal study beginning in 1989 to study how the family is related to alcohol use among delinquents. Roughly 600 adolescents and their parents participated in this research. Researchers went door-to-door and conducted face-to-face interviews in Buffalo, New York and the surrounding areas. Thomas et al. (1996) found that, regardless of family type, rates of delinquency were higher for males than for females. They also found that for White males living with a single mother who had a nonresident father active in his life, the involvement of the father buffered the son from delinquent behavior and drinking. These White males living in the single-mother environment were similar in levels of delinquency and alcohol use as White males living in a household with two parents present (Thomas et al., 1996). Surprisingly, the effect for Black males is the opposite of White males. Black males fare better in single-mother households when the nonresident father is not involved. When the non-resident father is involved, levels of delinquency and alcohol use increase (Thomas et al., 1996).

To conclude, adolescent boys in single-parent households have higher levels of delinquency and alcohol use than adolescents living in a two-family household. For White boys, nonresident fathers who are active their child's life act as a buffer and those boys experience the same rates of delinquency and alcohol use as boys from two-parent households. This is not the case for Black adolescent males. This indicates that race is playing an important role regarding the structure of households for adolescent males. Research conducted by Apel and Kaukinen (2008) found that the degree of anti-social behavior is higher in cohabitating households where the biological father is present. This is similar to Thomas et al.'s (1996) findings for Black adolescent males living with a single-mother who have a father active in his life. Though Apel and Kaukinen (2008) looked at a father who *lives* in the house and Thomas et al. (1996) looked at a father who is *active but not living* in the house, the results indicate something similar is occurring regarding family structure.

Downey, Ainsworth-Darnell, and Durfur (1998) argue that prior research on single-mother and single-father households have found support for the maternal hypothesis and the same-sex hypothesis because of faulty research methods and non-generalizable data. Despite the fact that the research mentioned above by Thomas et al. (1996) used longitudinal data as well, Downey et al. (1998) utilized longitudinal data to combat previous faulty research on this topic. However, the data Downey et al. (1998) used is national representative and therefore the results are more generalizable than the results found by Thomas et al. (1996). The data used for Downey et al.'s (1998) research comes for the National Education Longitudinal Study of 1988 and also from the General Social Surveys from 1972 to 1994. Two different data sets were used to test for behavioral problems early in the adolescent's life and also to test if adults who grew up in single-parent households developed negative outcomes later in life. Based on analyses performed,

Downey et al. (1998) conclude that there is little support for either the maternal hypothesis or the same-sex hypothesis, meaning that the gender of the single-parent has little effect on the outcomes of the adolescent. The only differences the researchers found when analyzing the National Education Longitudinal Study data is that youth from father-only households were only slightly less well behaved than youth from mother-only households. Regarding the General Social Survey data, the only difference found is that individuals raised by a single-father had about one half year less of education on average when compared to individuals raised by a single-mother.

Whereas the previous research by Thomas et al. (1996) focused on the effect single-parent households have on male adolescents, a study conducted by Hemovich and Crano (2009) focuses on the effect single-mother households and single-father households have on both female and male adolescent delinquency. Hemovich and Crano (2009) build their research on the same-sex hypothesis, which states "children of the same sex as their single parent are less likely to experience socioemotional disadvantage than children raised by a parent of the opposite sex" (p. 2101). Using data from the 2004 Monitoring the Future survey, Hemovich and Crano (2009) analyzed data from 49,474 eighth, tenth, and twelfth graders to figure out if illicit drug use was higher for adolescents from single-parent households than adolescents from two-parent households. The researchers also wanted to discover if the rates of illicit drug use were different for males and females living in same-sex or opposite-sex single-parent households.

Results from Hemovich and Crano's (2009) analysis indicate that marijuana, inhalants, and amphetamines use among adolescents in father-only households was higher than use in single-mother households and two-parent households. In addition to this, adolescents in single-mother households have higher rates of illicit drug use than adolescents from two-parent

households. Consistent with their first hypothesis, Hemovich and Crano's (2009) found that adolescents from single-parent households have higher rates of illicit drug use than adolescents from two-parent households. Regarding the second hypothesis, each type of illicit drug use is discussed.

Regarding marijuana, boys who lived in single-parent households had the same rates of marijuana use, regardless of whether the single-parent was a male or female. However, rates of marijuana use for boys in single-parent households were still higher than for boys in two-parent households. Females in single-father households had the highest rate of marijuana use out of all the adolescents with the lowest rates for female adolescents in families with two parents. Even though adolescent females in single-father households had the highest rate of marijuana use, boys in the same setting were not far behind.

For adolescent boys, family structure had no effect on use of inhalants; however, it did have an effect for adolescent girls. Adolescent girls living in father-only households had the highest rates of inhalant use compared to adolescent girls from single-mother and two-parent households. It is also important to note that adolescent girls from single-father households had higher rates of inhalant use than adolescent boys from single-father households. In this category of illicit drug use, adolescent girls from single-father households fared the worst.

Similar results were found for amphetamine use as were found for inhalant use. Family structure had no effect for adolescent boys but did have an effect for adolescent girls. Adolescent girls living in single-father households had higher rates of amphetamine use than girls in single-mother households and two-parent households.

Hemovich and Crano (2009) found that children in single-family households had higher rates of illicit drug use compared to children in two-parent households. Adolescent females in

single-father households had the highest rates of illicit drug use, which supports the same-sex hypothesis. Relating this to theories on delinquency, perhaps single fathers have a more difficult time creating meaningful bonds and attachment with their daughters than they do with their sons. This lack of attachment could therefore result in a higher rate of delinquency or, in this case, illicit drug use. Based on this research, it is safe to conclude that family structure does matter, especially single-father households.

Finding support for single-parent households and delinquency, Demuth and Brown (2004) looked at the mediating effect family processes have on the relationship between family structure and adolescent delinquency. Demuth and Brown (2004) specifically wanted to look at the differences between single-mother households and single-father households. Demuth and Brown (2004) state that prior research has found that adolescents have higher rates of offending in single-mother households where the father is not involved. This living situation is related to lower economic statuses and lower levels of supervision and inconsistent discipline (Demuth & Brown, 2004). Guided by social control theory, Demuth and Brown (2004) expected "that parental absence will be associated with higher levels of delinquency, on average, due to fewer (or weaker) direct and indirect controls" (p. 65).

Using the 1995 National Longitudinal Survey of Adolescent Health, Demuth and Brown (2004) analyzed data of 16,304 adolescents. The predictive variable, family structure, was measured by five categories included but not limited to single-mother families, single-father families, and married, biological families. Juvenile delinquency was measured by items relating to theft, property damage, violent acts, trespassing, and acting rowdy (Demuth & Brown, 2004). Family processes were measured in two ways, indirectly and directly. Direct controls include how often the parent is home when the child leaves for school, returns from school, and when the

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child goes to bed. Direct controls also included how often the parent and child did activities together in the last four weeks. The final direct control related to the parent's monitoring of his/her child, such as what television programs the child can watch and what time the child's curfew is (Demuth & Brown, 2004). Indirect controls were measured by how close the child felt to his/her parent, whether or not the child felt loved, if the child approved of the communication he/she has with the parent and if the child was happy with the relationship he/she has with the parent (Demuth & Brown, 2004).

Demuth and Brown (2004) found that the highest level of delinquency was among adolescents in single-father households and the lowest level of delinquency was in married, biological families. The researchers concluded that juvenile delinquency was not related to the absence of a parent after controlling for family processes variables. Lastly, the effect of the gender of the single-parent had only a very small effect on delinquency after controlling for the family processes variables. Ultimately, Demuth and Brown (2004) conclude that "greater delinquency of adolescents in single-father families is largely a function of the weaker direct and indirect controls exerted by the father" (p. 77). When a parent is absent from the picture, it makes it difficult for the other parent to control and form bonds with his/her child(ren). This, consequently, leads to higher levels of delinquency, which indicates that the effect parental structure has on delinquency is mediated by variables related to social control and bonding theory.

<div align="center">Other Family Types</div>

Cohabitating Households

Due to the changing nature of society, cohabitation has become a more frequent and thus acceptable living arrangement. Cohabitation is defined as "two people living together as a couple

<div align="center">23</div>

without being married" (Kierkus, Johnson, & Hewitt, 2010, p. 394). Researchers estimate that "40% of cohabiting households have children under the age of 18 living in these family structures… [and] that one in four children will live in a cohabiting household before they reach the age of 18" (Kierkus et al., 2010, p. 394). This has led to the beginning of research that focuses on the effect cohabitation has on juvenile delinquency. Some of the earliest studies on cohabitation focused on the child's welfare or on anti-social behavior, which is a combination of several types of delinquent acts (Brown 2004; Apel & Kaukinen, 2008). Generally, scholars have concluded that cohabitation is correlated with delinquent behavior among adolescents (Kierkus et al., 2010; Schroeder et al., 2010).

To begin this discussion on cohabitation, research by Apel and Kaukinen (2008) is discussed. Apel and Kaukinen (2008) were interested in understanding the differences in antisocial behavior between adolescents who live in households with two biological parents who are married and adolescents who live in households with two biological parents who are not married. They were also interested in understanding if children living with single-parents who cohabitate with a spouse who is not the biological parent of the child(ren) have higher rates of antisocial behavior than intact households with two biological parents. Antisocial behavior was constructed using a "24-item variety score of self-report problem behavior, spanning such diverse behaviors as running away from home, school suspension, substance use, minor property crime, serious property crime, violent behavior, illegal income, and arrest" (Apel & Kaukinen, 2008, p. 44). Apel and Kaukinen (2008) looked at thirteen different family structures but this discussion focuses on the differences between cohabitating households and households with two married biological parents. Using data from the 1997 National Longitudinal Survey of Youth, Apel and Kaukinen (2008) found that the mean score of antisocial behavior for adolescents in

households with a biological father cohabitating with his partner was the highest, followed by biological mother cohabitating with her partner, then two biological parents cohabitating, and lastly with the lowest rates of antisocial behavior, two biological married parents.

Apel and Kaukinen (2008) argue that school-related variables (repeating a grade, scholastic performance, and positive school attitudes) help explain the differences of antisocial behavior observed between married and unmarried intact families. In families where the biological parents were not married, adolescents had lower school performance and less engagement. Apel and Kaukinen (2008) argue that perhaps these adolescents have higher rates of antisocial behavior because they lack commitment or attachment at home and at school due to the cohabiting nature of their parents' relationship. One major limitation of this study is that Apel and Kaukin (2008) looked at family structure as a static variable and thus, do not get into the nuisanced effects that changing family structure can have on antisocial behavior. Ultimately, Apel and Kaukin (2008) argue that family structure and antisocial behavior needs to be theorized and tested more extensively.

Also taking a static approach to family structure, Kierkus, Johnson, and Hewitt (2010) set out to fill the gap in cohabitation literature by looking at the effect it has on specific types of delinquency. Kierkus et al. (2010) suggest that there are four reasons why cohabitation and juvenile delinquency are correlated. Of these four reasons, family stress and parental involvement are considered as they relate to family structure. Adolescents living in a cohabitating household can experience stress due to the new member of the house, possibly moving into a new residence or by navigating the new roles or relationships that come with the addition of a family member (Willetts & Maroules, 2004). Parental involvement includes the level of involvement by the parents and the parenting style the parents use with their children.

There is general agreement that the parenting styles of cohabitating individuals differ from traditional family household parenting styles (Kierkus et al., 2010; Brown, 2004; Manning & Lamb, 2003). This indicates that there is something negative about the parenting style of cohabitation that would lead to anti-social behavior among adolescents. This is evidenced by the lower rate of delinquency among juveniles in traditional families compared to other types of families (Kierkus et al., 20100; Schroeder et al., 2010; Apel & Kaukinen, 2008; Thomas et al., 1996; Garis, 1998; Hemovich & Crano, 2009). Manning and Lamb (2003) argue that the development of new relationships in cohabiting households leads to vague expectations about parenting. Kierkus et al. (2010) state that problematic parenting styles and cohabitation might have separate individual effects on delinquency and should therefore be analyze separately.

Kierkus et al. (2010) analyzed data from the 1995 National Survey of Adolescents, which is a "nationally representative, cross-sectional telephone survey of parents and youth aged 12 to 17" to test the effect of cohabitation on antisocial behavior (p. 397). Antisocial behavior was measured by a general delinquency variable, violent crime, property crime, and substance abuse. Using logistic regression, Kierkus et al. (2010) found that children living in cohabitating household are 2.8 times more likely to engage in general delinquency when compared to a traditional family. This effect was the largest for the other two family types: single-parent separated and single, never married. These results support the hypothesis that the family structure of cohabitation has an effect on delinquency. Though the effects for violence, property damage, and substance abuse were not as strong, they demonstrated a statistically significant relationship with cohabitation (Kierkus et al., 2010).

The research conducted by Kierkus et al. (2010) looked at family structure as a static variable. Using family structure as a static variable leads to contradictory results and does not

allow researchers to talk about causation. Rebellion (2002) approaches the broken home variable as being more fluid. Rebellion (2002) linked his study on family structure to social control theory, self-control theory, differential association, and general strain theory. Using data from the three waves of the National Youth Study, Rebellion (2002) defined delinquency by the number of times an adolescent committed a status offense, a property crime, or a violent transgression.

Rebellion (2002) found that adolescents who experienced a disruption (divorce or separation) during the first wave of data collection had higher rates of delinquency than those adolescents who experienced a disruption at a later wave of data collection. Applying this to theory, Rebellion (2002) argues that general strain theory suggest that a recent disruption in the family would be correlated with delinquency. Rebellion (2002) also pulled from self-control theory. Self-control theory, which emerged out of social control theory, states that criminal offenders and juvenile delinquents lack self-control or the ability to constrain their own delinquent behavior. Lack of self-control is evidenced by "impulsivity, pursuit of pleasure, insensitivity to plan, [and] adventuresomeness" (Shoemaker, 2000, p. 261). This is not an inborn, biological trait but rather a result of substandard socialization through institutions such as the family or the school. Parents who fail to create an emotional bond with their child will have a difficult time supervising their child's activities (Higgins & Ricketts, 2005). If this lack of an emotional bond and ineffective parenting occurs before a child is eight-years-old, the child "is likely to develop low self-control, which brings a preference to make decisions impulsively" (Higgins & Ricketts, 2005, p. 6). Impulsive decision-making is also accompanied by risk-taking behavior, completing tasks that benefit only the adolescent, a preference for simple, physical tasks, and an inability to control one's temper (Higgins & Ricketts, 2005).

In order for a child to develop self-control, parents must "monitor the child's behavior, recognize deviant behavior when it occurs, and punish such behavior" (Gottfreson & Hirschi, 1990, p. 97). Lack of self-control is not enough for delinquency to occur; there must be an occasion for crime. Gottfredson and Hirschi (1900) argue that a person who has low self-control is likely to continue to have low self-control and to spend time with other adolescents who exhibit low self-control. Adolescents who have low self-control and spend time together are thus likely to engage in delinquent acts. To conclude, self-control, which is or is not instilled in children by parents, is what leads to crime or delinquency. Applying this to his research, Rebellion (2002) argued that "divorce or separation in the first few years of life should be most associated with delinquency during adolescence" because of possible ineffective parenting during that divorce or separation (p. 9). Based on the results, Rebellion finds support for Gottfredson and Hirschi's self-control theory.

Ultimately, Rebellion (2002) concludes that the variables "commitment to conventional goals, family attachment, family involvement, time spent with peers, perceived problems/frustrations, and parental abuse fail to explain the broken homes/delinquency relationship in the present study" (p. 127). It is important to note that Rebellion (2002) did not find a correlation between single-parent households and juvenile delinquency. Rather Rebellion (2002) argues it is the transitions adolescents experience that are correlated with delinquent behavior. To illustrate, Rebellion (2002) found that the transition into a household where the parent remarries is related to status offending and this relationship "persists after controlling for prior status offending and a host of theoretically derived delinquency predictors" (p. 127). While this study does not specifically address cohabitation, it does provide a framework for other researchers to build on. It does this by taking a more fluid approach to family structure and it

does find support for changes in family structure, or disruptions, as it relates to juvenile delinquency.

Also taking a fluid approach to family structure, Schroeder et al. (2010) found support for cohabitation and juvenile delinquency. Just like Rebellion did, Schroeder et al. (2010) also argue that the issue with previous research on this topic is that family structure is analyzed as a static variable. In addition to this though, Schroeder et al. (2010) argue that prior research has neglected to view delinquency as fluid as well. In order to address this prior limitation, Schroeder et al. (2010) set out to test three hypotheses:

1. Family dissolution is associated with increases in juvenile offending through the intermediate process of decreases in family time and parental attachment.

2. Transition from single-parent households to two-parent households is also associated with increases in juvenile offending through concomitant decreases in family time and attachment.

3. The association between family formation and juvenile offending is moderated by initial parent-child bonds and parental involvement. (p. 586)

As evidenced by the hypotheses above, Schroeder et al.'s (2010) research builds upon social control and bonding theory. Schroeder et al. (2010) analyzed longitudinal data from the National Youth Study. Juvenile delinquency was measured by a change in mean offending scores from wave one to wave three of the survey. Offending scores were calculated by averaging together responses to behaviors such as being unruly in a public place, which was weighted lightly, to sexually assaulting someone, which was weighted much more heavily. Pulling from social control and bonding theory, Schroeder et al. (2010) argue, "Strong attachment to two parents provides a stronger control of delinquency than a strong attachment to one parent does" (p. 585).

When analyzing cross-sectional data, this statement holds but when longitudinal data is use, Schroeder et al. (2010) find that attachment and control of adolescents is not that black and white.

Regarding Hypothesis 1, Schroeder et al. (2010) did not find a correlation between offending and family dissolution. The researchers, however, did find support for the second hypothesis that stated juvenile delinquency increases when transitioning to a two-parent household. Schroeder et al. (2010) found that the transition to cohabitation between waves of data collection was correlated with an increase in juvenile delinquency. The researchers also found support for the third hypothesis. Adolescents who had a strong relationship with their mother or father prior to the addition of a new parental figure actually benefited from the family formation. On the other hand, if an adolescent had a poor relationship with his or her mother or father prior to the family formation, then that transition exacerbated the poor relationship and led to an increase in problematic behavior (Schroeder et al., 2010). This finding contradicts social control theory, which argues that more parental figures would cause more control of the child. These results lead Schroeder et al. (2010) to conclude that a better theoretical approach to this subject would involve utilizing differential association in addition to social control and bonding theory.

Stepparent Households

It is important to look specifically at stepparent households as separate from intact households because extant research has found different effects on juvenile delinquency for these two types of households. Previous research on adolescent delinquency and stepparent households has found that adolescents who live in stepparent households report lower levels of support, monitoring, and attachment with their parents compared to adolescents in intact households

(Gore, Aseltine, & Colton, 1992). Lower levels of support, monitoring, and attachment are correlated with higher levels of substance use. Dornbusch et al. (1985) argue that in single-parent households there are fewer controls on the adolescents' behavior. This could be due to the simple fact that the single-parent may not be home enough to monitoring the adolescent's activities. To apply this to stepparent households, perhaps a step-parent does not feel it is his/her place to set the rules due to being a new member of that household. Researchers have also found that adolescents in households with a step-parent present are more influenced by peers than adolescents in households with two biological parents (Steinberg, 1987). Lastly, adolescents in stepfamily households experience higher rates of stress compared to adolescents in intact households. This stress could be due to the transitional nature of a blended, non-traditional family type. Research discussed here about stepparent households suggests that cross-sectional data does not necessarily capture the dynamic relationships and transitions that occur in households that have step-parents present.

Previously mentioned under an evaluation of intact households was research by Barrett and Turner (2006). In addition to examining rates of juvenile delinquency in intact homes, Barrett and Turner (2006) also evaluated the effect living in a household with a step-parent has on an adolescent. Barrett and Turner (2006) concluded the highest rates of substance use were observed in single-parent households and in stepparent households. Interestingly, Barrett and Turner (2006) also found that adolescents in single-parent households with a relative present had lower rates of substance use, on average, compared to stepparent households. Single-parent households with a relative present fared similarly to intact households. As stated previously, this additional relative in a single-parent household provides an addition adult to control the child and to form emotional bonds and attachment. In doing so, this addition adult alleviates strains an

adolescent may feel growing up with a single-parent. This, however, does not explain why higher rates of substance abuse were observed in households with stepparents and the authors do not clearly articulate this finding. It would make sense that the stepparent acts as a buffer to delinquent behavior just like the relative does in a single-parent household. Perhaps higher rates are observed in stepparent households because those households included the introduction of a *new* adult into the child's life; whereas, the relative who lives in a single-parent household would more than likely not be a new adult to the child.

While research has found that stepparent households are important when it comes to adolescent well-being, other researchers have gone even further and found that the gender match-up of the parents in that type of household is important as well. Adolescents from father-stepmother households tend to fair worse than adolescents from mother-stepfather households (Lee, Burkman, Zimiles, & Ladewski, 1994; Hoffman & Johnson, 1998). Using data from the National Household Survey on Drug Abuse from 1991 to 1993, Hoffman and Johnson (1998) analyzed the relationship between several different family types and adolescent behavior. As with all other research presented here, Hoffman and Johnson (1998) found that the lowest rates of delinquency, in this case measured by marijuana use, were among adolescents in intact households. Similar to other research findings, Hoffman and Johnson (1998) also found that adolescents in father-only families had, on average, higher rates of marijuana use when compared to single-mother households. When compared to adolescents from intact households, adolescents from mother-stepfather households are 1.5 times as likely to report marijuana use in the previous year. Adolescents from father-stepmother households fare even worse; those adolescents are two times as likely to report marijuana use compared to intact household adolescents. Hoffman and Johnson (1998) speculate that father-stepmother households have the

highest rates of marijuana use because perhaps stepmothers have a difficult time forming maternal bonds with stepchildren. However, the researchers argue that it is more plausible that higher rates of delinquency are observed in this type of household because the child was delinquent prior to living with the father and stepmother. Hoffman and Johnson (1998) argue that more often than not, delinquent children are placed with fathers during custody cases which could help explain the higher rates of delinquency in father-only and father-stepmother households.

Also using nationally representative data, Lee, Burkam, Zimiles, and Ladewski (1994) investigated the role stepfamily households have on adolescent behavior. Lee et al.'s (1994) data comes from the National Education Longitudinal Study in 1988, which surveys adolescents, one of the adolescent's parents, school administrators, and two of the adolescent's teachers. While not measuring marijuana use like Hoffman and Johnson (1998), Lee et al. (1994) did find that regarding behavioral problems, similar rates were observed. To explain, adolescents from single-parent households had more behavioral problems compared to intact households. Single-father household adolescents had higher rates than single-mother households. Lastly, stepfamily household adolescents were twice as likely to have behavior problems compared to intact households. Lee et al. (1994) also found that adolescent girls have more behavioral problems than adolescent boys in households were the maternal mother is not present. Though not clearly articulated, Lee at al. (1994) argue that higher rates of behavioral problems are observed in households without maternal mothers present because mothers provide a protective barrier. Thus, they find support for the maternal hypothesis. All of the research presenting in this chapter provides a framework for the methods and data used in the following chapter.

CHAPTER 3

DATA AND METHODS

Introduction

In order to explore the relationship between family structure and adolescent marijuana use, secondary data analysis was performed. Data for this thesis comes from Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth, 2012 and this section provides an overview of that dataset. After a description of the Monitoring the Future dataset, a summary of the performed data screening, the analytic strategy used and the hypotheses are presented.

Monitoring the Future

Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth is a nationally representative survey of eighth and tenth grade American adolescents. Conducted by the University of Michigan's Institute for Social Research, Monitoring the Future is an ongoing survey that has been conducted every year on seniors in high school since 1975. The survey of eighth and tenth graders has been conducted annually since 1991 ("Purpose and Design," 2014). While Monitoring the Future extensively captures adolescent drug use, it is not the only purpose of the survey. The survey also asks adolescents questions regarding "educational aspirations, occupational aims, and marital and family plans" (Johnston, Bachman, O'Malley, & Schulenberg, 2012, p. 4).

Sampling

In order to assure the sample for the Monitoring the Future survey was nationally representative, the sampling procedure was divided into three stages of probability sampling. The first stage involved the selection of geographical areas. The second stage involved the selection

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of public and private academic institutions. One institution is randomly chosen from a geographical area except in major metropolitan areas. In these areas, more than one school is chosen. Regardless of how many schools are selected in an area, schools are chosen using probability proportionate to size ("Purpose and Design," 2014). This means that "the probability of drawing a school is proportionate to the size of its eighth or tenth grade class" (Johnston, 2012, p. 2). In other words, the larger the population of eighth or tenth graders, the higher the probability that school is selected. If, for whatever reason, a selected school opts out of the survey, another school that is similar is chosen as a replacement within that same geographical area. Once the schools are selected, up to 350 students are randomly sampled. As many students present are sampled from schools with fewer than 350 students. Each case is weighted in an effort to deal with variations in sampling and sample sizes from school to school. The response rate ranged between 85% and 91% for the sampled eighth and tenth graders included in the current study.

Benefits and Limitations

Due to the in-depth and multistage probability sampling employed by the researchers of Monitoring the Future, the sample is nationally representative of eighth and tenth graders in a private or public school in the United States. Another benefit is that the sample size is large, on average between 15,000 and 17,000 students are surveyed. Monitoring the Future uses four surveys for eight and tenth grades. Every survey asks core questions but each survey asks different lifestyle questions. For this research, only survey number two is used and because the sample size is so large, enough cases are retained for analysis.

Variables

Dependent Variable

The focus of this study is juvenile delinquency. Juvenile delinquency is measured by the frequency of marijuana use among eighth and tenth graders. Marijuana use in measured three ways in Monitoring the Future: marijuana use in the last thirty days, marijuana use in the last twelve months, and marijuana use in the adolescent's lifetime. This study is interested in lifetime marijuana use. The specific question used is "On how many occasions (if any) have you used marijuana (weed, pot) or hashish (hash, hash oil) in your lifetime?" Respondents were able to choose from the following: 1 – "0 Occasions", 2 – "1-2 Occasions", 3 – "3-5 Occasions", 4 – "6-9 Occasions", 5 – "10-19 Occasions", 6 – "20-39 Occasions", and 7 – "40 or More Occasions". This variable was recoded into five categories of response that combined response 2, 3, and 4 into one response category.

Independent Variables

The predictive variable for this study is family structure, essentially how many and what gender parents are present in the adolescent's household. Family structure is measured by two variables that ask, "Which of the following people live in the same household with you?" Respondents were able to check if they had a father or stepfather present for one question and able to check if they had a mother or stepmother present for another question. From these two variables, two dummy variables were created. The first dummy variable is coded 1 for households with only a father present. The second dummy variable is coded 1 for households with only a mother present. For both of these two dummy variables, two-parent households serve as the reference group. This research is not interested in households with no parents present, so those cases without parents present were excluded from the model. Unfortunately, the data

available in Monitoring the Future does not give a way to measure cohabitating families or a way

to differentiate between biological parents and stepparents so there is no way to capture those

situations in this research.

Control Variables

Control variables for this study come from theory presented previously and literature

from similar studies. To determine if family structure has a nonspurious relationship with

adolescent marijuana use, it is necessary to control for variables that might have a possible

effect. The first control variables come from social control/bonding theory. This theory states

that there are four elements to the social bond, which restricts delinquency: attachment,

commitment, involvement, and belief (Hirschi, 1969). All four parts are needed to fully

understand how control theory explains juvenile delinquency. As stated previously, attachment is

the "connection one feels toward other persons or groups and the extent to which one cares about

their opinions and feelings" (Shoemaker, 2000, p. 168). Commitment is the rational aspect of this

theory, where an individual weighs the pros of conforming to society with the cons of not

conforming. Hirschi (1977) argues that there are two parts to understanding juvenile

delinquency: there are "the driving forces, the reasons or motives behind an act and, on the other

hand, the obstacles that stand in its way, the restrains that inhibit its occurrence" (p. 322). The

more an individual is committed to conforming to the norms of society, the less likely he/she will

be to offend. Involvement is simply the amount of activities an individual participates in that

society would deem as acceptable. This would include being on the debate team or participating

in sports during school. Lower levels of involvement would relate to higher rates of delinquency.

Lastly, belief is "the acceptance of a conventional value system" (Shoemaker, 2000, p. 168). The

greater the belief, the lower the chance of delinquency. All four of these elements can be

interrelated and can collectively provide a buffer to juvenile delinquency. From this theory, the following control variables are used. To control for attachment level, a variable that measures child-parent relationship is used. This question asks, "If you were having problems in your life, do you think you would talk them over with one or both of your parents?" Responses were dichotomized into two responses, "Yes" or "No". To control for involvement, two variables are used that measure the amount of community service and sports related activities adolescents are involved in. Current grades the adolescent is receiving is used to control for belief and commitment as it relates to social control and bonding theory.

Next it is necessary to control for variables derived from self-control theory. As mentioned previously, self-control theory argues that if a child does not have an emotional attachment to a parent by age eight, it is likely he/she will develop low self-control. This low self-control could lead to risk-taking behaviors and association with other individuals who lack self-control. To control for this theory, two variables are used. The first variable measures if an adolescent gets a "kick out of doing things that are a little dangerous" and the second variable measures if the adolescent likes to test him/herself by doing risky things.

Another theory to take into account is differential association. This theory states that behavior is learned and therefore, delinquent behavior is also learned. This learning takes place in small group settings, like the family or close friends. Delinquent behavior occurs when it is more favorable for an adolescent to be delinquent than for that adolescent to abide by the rules. Differential association relates to family structure in a couple of ways. First, depending on the structure of the family, there may not be sufficient parental monitoring to provide an excess of definitions favorable to appropriate conduct. Adolescents may develop an excess of definitions favorable to delinquency through peer groups or siblings. The second way differential

association relates to family structure is more straightforward. A child may learn delinquency from his/her parents. If the parents are criminals then the child may view crime as normative behavior. While this theory provides insight as to why adolescents commit delinquent acts, it is a difficult theory to test because an excess of definitions or attitudes can be difficult to measure. With that said, two variables were used to capture relevant aspects of the theory. One variable asks how many friends the adolescent has who smoke marijuana or hashish. The second variable asks how much the adolescent agrees that he/she likes to have exciting and unpredictable friends.

The fourth and final theory that should be taken into account is strain theory. This theory states that delinquent behavior is a coping method for strain an adolescent feels. Just as Barrett and Turner (2006) did, this thesis utilizes socioeconomic status to control for strain theory. The best way to measure socioeconomic status with the data from Monitoring the Future is by adolescent income and adolescent parents highest level of education attained. Adolescent income is measured by two questions. The first asks how much money the individual receives from a job and the second asks how much money is received from any other source, such as an allowance. While it would have been desirable to average these two variables together to get a total income amount for the adolescent, this was not a viable option for two reasons. First, the two income variables were negatively correlated and secondly, when a composite measure was created using these two variables, the Cronbach's Alpha was less than .300. Therefore, the variables were not combined and both are used as controls. The second way socioeconomic status is measured is by the education level of the adolescent's parents. This was originally measured by two variables, one that asks the highest education level for the mother and another one that asks the same question for the father. In the case of two-parent households, these two variables were averaged

together to create one variable called *Parent's Education.* The Cronbach's Alpha for this composite measure is .741.

Lastly, some demographic variables are controlled for based on previous literature. The first variable is Sex, which is a dummy variable with males coded as 1 and females as the reference group. Race is also controlled for and consists of two dummy variables. The first dummy variable is Hispanics with Hispanics scoring 1 and Whites serving as the reference group. The second race dummy variable has Blacks scoring 1 and Whites also serving as the reference group. It would be appropriate to use age as a control variable. Unfortunately, the design of Monitoring the Future does not allow it to be used. Age was only asked of the tenth grade students. Therefore, using age would exclude eighth graders from the analysis.

<div align="center">Data Screening</div>

The dataset for this research had an original sample size of 31,106 cases. The dataset had four different surveys that were used. While some core questions were asked in every survey, some of the questions used in this research were only asked in survey number two; therefore, the analysis was limited to only respondents who completed survey number two. Also, this research is not interested in adolescents living in households without parents present, so those cases where individuals had no parents present were excluded from the analysis. Some cases were eliminated due to the Race variable as well. When completing the survey, students were able to choose from several categories of response for race and were also able to select as many races as desired (see Appendix). Due to the way the researchers of the Monitoring the Future Survey recoded the variable Race, 5,996 cases were coded as missing. Respondents who selected more than one answer or who did not fit into the categories of White, Black, or Hispanic were coded as missing data. Lastly, utilizing listwise deletion to ensure responses for every case for each variable

reduced the sample size to 4,191. A large number of cases were excluded from analysis because students who were categorized as living in the Western Region were not asked the variable Talk with Parents. Therefore, any case that was recorded in the Western Region was excluded from the analysis. At this point in analysis, the exclusion of the Western Region respondents means that the sample is no longer representative of eighth and tenth graders in the United States. At this point, two analyses were conducted, one that included the Talk with Parents variable and one that did not. Results from the first analysis that included the Talk with Parents variable indicated that the variable was not statistically significant. Results from the second analysis that excluded the Talk with Parents variable indicated that the models estimated were very similar with similar R^2 values. Because of this, it was decided that Talk with Parents would be excluded from the analysis. Using listwise deletion for the analysis that is used for this research brought the sample size to 5,850.

The second phase of data screening involved checking for issues with multicollinearity. Multicollinearity diagnostics were conducted and there was no indication that there is an issue with multicollinearity was an issue. All tolerance values were greater than .500 and all variance inflation factors (VIF) were less than 2.00, indicating no multicollinearity issues (Allison, 1999, p. 142).

The third phase of data screening involved a multivariate outlier check, which was conducted using Cook's D measures. According to Hamilton (1992), influential cases are those with a Cook's D value above 1 (p. 46). For the first analysis, which tests Hypothesis 1, the highest Cook's D measure is .00646. According to the absolute cutoff, there are no multivariate outliers present. However, a closer look at the distribution of the Cook's D measures shows that there is a gap in the distribution across cases. This gap could indicate potential multivariate

outliers. The four cases that fell after this gap, cases with a Cook's D measure greater than 0.00508, were considered as potential multivariate outliers and were removed from the analysis. This brought the sample size to 5,846 cases.

A second analysis was performed to test for Hypothesis 2. This analysis restricted the sample to just adolescents living in a single-parent household. There are no issues with multicollinearity for this analysis. A gap in the distribution of Cook's D measures was found and 0.0166 was used as the cutoff, eliminating one potential multivariate outlier from the analysis. The sample size for the second analysis is 1,197. Both analyses were weighted.

Analytical Strategy

The first step in this analysis involved examining descriptive statistics to determine the sample being used. The next step involved utilizing ordinary least squares regression to analyze the effects the two independent variables, Mother-Only and Father-Only, have on the dependent variable, Lifetime Marijuana Use. Ordinary least squares regression is used because the dependent variable is measured at the ordinal level with at least five categories of response. Utilizing ordinary least squares regression, the first model regressed Lifetime Marijuana Use on the Family Structure variables. The second model regressed Lifetime Marijuana Use on the Family Structure variables and the other control variables listed above. These two models test the first hypothesis (see Table 2).

A second, separate analysis was conducted to test the second hypothesis. This analysis included only respondents who live in a single-parent household. A dummy variable, Gender Match, was created with respondents scoring 1 if they live with a single parent of the same gender and 0 if the gender is different. Lifetime Marijuana Use is then regressed on Gender

Match and the controls in order to test Hypothesis 2. All analyses were conducted utilizing SPSS 19.0 for Windows.

<div align="center">Hypotheses</div>

H_1:   Eighth and tenth grade adolescents in the United States residing in a household with only

a father present will have the highest marijuana use rates, followed by adolescents in

mother-only households and with adolescents in two-parent households having the lowest

rates, holding all else equal.

H_2:   Of adolescents living in single-parent households, those adolescents who have the same

gender as the parent will have lower rates of marijuana use when compared to

adolescents with the opposite gender of the parent.

CHAPTER 4

ANALYSES AND FINDINGS

Introduction

In this chapter, results from the quantitative analysis are presented. The descriptive statistics are first presented to give the reader a sense of the variables used and the characteristics of the sample. Next, the results of the two analyses of the ordinary least squares regressions are presented. The first analysis regresses Lifetime Marijuana Use on the Family Structure variables and other control variables for a sample of eighth and tenth graders in the United States. The second analysis tests the second hypothesis, if the gender match-up of the adolescent and the single parent matters.

Descriptive Statistics

Table 1 lists the descriptive statistics (the mean, standard deviation, minimum value and maximum values) of the dependent variable, the independent variable, and the control variables in the analysis. According to Table 1, the dependent variable Lifetime Marijuana Use has a minimum value of 1, indicating no marijuana use, and a maximum value of 5, indicating 40 or more occasions of marijuana use. The mean average response for this variable is 1.486, which indicates the adolescents in this sample have low rates of marijuana use, scoring on average between 0 occasions to 1-9 occasions. The independent variable Mother-Only has an average mean response of 0.167 indicating that 16.7% of respondents report living with only a mother. The second independent variable Father-Only has an average mean response of 0.038, indicating that just 3.8% of respondents report living with only a father. A mean response of 0.546 for Gender Match indicates that about 55% of adolescents living in single-parent household have the same gender as the parent (variable not shown in table).

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Table 1

Descriptive Statistics of Variables Lifetime Marijuana Use and Family Structure Variables and Other Variables Used in Analysis (*N* = 5850)

Variable	Mean	Standard Deviation	Minimum Value	Maximum Value
Dependent Variable				
Lifetime marijuana use	1.486	1.065	1.000	5.000
Independent Variables				
Mother-Only (1=Mother-only households)[a]	0.167		0.000	1.000
Father-Only (1=Father-only households)[a]	0.038		0.000	1.000
Control Variables				
Grades	3.219	0.757	1.000	4.000
Kick out of danger	3.190	1.390	1.000	5.000
Risky acts	2.930	1.458	1.000	5.000
Friends who smoke marijuana	2.180	1.218	1.000	5.000
Exciting friends	3.580	1.271	1.000	5.000
Volunteer work	2.210	1.002	1.000	5.000
Playing sports	4.130	1.253	1.000	5.000
Income from Job	2.570	2.514	1.000	10.000
Income from Other	3.110	2.092	1.000	10.000
Parent education	4.191	1.231	1.000	6.000
Sex (1=Males)[b]	0.476		0.000	1.000
Hispanics (1=Hispanics)[c]	0.158		0.000	1.000
Blacks (1=Blacks)[c]	0.100		0.000	1.000

[a]Two-parent households is the reference group.
[b]Females is the reference group.
[c]Whites is the reference group.

There are a total of thirteen control variables, three of which are dummy variables. Sex, Hispanics, and Blacks are the dummy variables with a minimum value of 0 and maximum value of 1. For Sex, the average mean is 0.476 indicating that 47.6% of respondents are male. For Hispanics, an average mean score of 0.158 indicates that 15.8% of the respondents are Hispanic. An average mean score of 0.100 for Blacks indicates that 10.0% of respondents are Black. Therefore, 74.2% of the sample is White.

The other ten control variables are measured at the ordinal level. An average mean response of 3.219 for Grades indicates that students on average have a B average in school. For the variable Kick out of Danger, the average mean response is 3.190 and a standard deviation of 0.880, indicating that respondents neither agree nor disagree that they get a kick out of doing things that are dangerous. The variable Risky Acts has a mean score of 2.930, indicating similar results as Kick out of Danger, meaning that respondents neither agree nor disagree that like to test his/herself by doing risky things. Respondents report on average that they have about two friends who smoke marijuana with a mean average of 2.180 for all respondents in the analysis. The Exciting Friends variable has a mean average of 3.580, which means respondents score on average between "Neither Agree nor Disagree" and "Agree" that they prefer exciting and unpredictable friends. When it comes to participating in activities, the mean average for Volunteer Work is 2.210 and 4.130 for Playing Sports. This indicates that respondents do volunteer work on average a few times a year and respondents play sports on average at least once a week. Respondents on average receive more money from other sources, such as allowances, than they do from a job. Income from Job has an average mean of 2.570, which means respondents receive anywhere between $1-5 a week and $6-10 a week from a job. Income from Other has an average mean of 3.110, indicating respondents receive around $6-10 a week from other sources. The last control variable is Parent Education with a mean average of 4.191. This indicates that respondents' parents have on average somewhere between some college education and a college degree.

<div align="center">Multivariate Analysis</div>

Table 2 presents the first analysis to test Hypothesis 1. Ordinary least squares regression analysis was conducted and two models are presented. In Model 1, the dependent variable

Lifetime Marijuana Use is regressed on the two Family Structure variables, Mother-Only and Father-Only. The second model estimates the first model but includes the control variables derived from theory and previous research. The results presented for the multivariate analysis exclude the multivariate outliers. Table 3 presents the second analysis to test Hypothesis 2. A dummy variable, Gender Match, was created with respondents scoring 1 if they live with a single parent of the same gender and 0 if the gender is different. Lifetime Marijuana Use is then regressed on Gender Match and the controls.

<div align="center">Analysis 1</div>

Model 1 – Main Effects

According to Model 1 in Table 2, both of the independent variables are statistically significant at the .001 level for both Mother-Only and Father-Only. This means that adolescents from single-parent households are significantly different on marijuana use than adolescents from two-parent households. Respondents who live in a two parent household score on average 1.406 points on the Lifetime Marijuana Use scale. The coefficients for Mother-Only and Father-Only are 0.301 and 0.404, respectively. Both are positive, which means that adolescents from single-parent households score higher on the Lifetime Marijuana Use scale than respondents who live in a household with two parents present. It is also important to note that adolescents from father-only households scored the highest. An R^2 of 0.016 indicates that just 1.6% of the variation in Lifetime Marijuana Use is explained by its linear relationship with the Family Structure variables, Mother-Only and Father-Only.

Table 2

Results of Ordinary Least Squares Regression of Lifetime Marijuana Use on Family Structure Variables and Other Characteristics for a Sample of United States Eighth and Tenth Graders, Outliers Excluded (Weight $N = 5875$)

| Variable | Lifetime Marijuana Use | | | |
| | Model 1 | | Model 2 | |
	B (SE)	β	B (SE)	β
Mother-Only (1=Mother-only households)[a]	0.301[***] (0.036)	0.108	0.113[***] (0.031)	0.040
Father-Only (1=Mother-only households)[a]	0.404[***] (0.071)	0.075	0.198[**] (0.058)	0.037
Grades			-0.148[***] (0.016)	-0.107
Kick out of danger			0.047[***] (0.011)	0.062
Risky acts			0.014 (0.010)	0.020
Friends who smoke marijuana			0.432[***] (0.010)	0.500
Exciting friends			0.000 (0.010)	0.000
Volunteer work			-0.045[***] (0.012)	-0.043
Playing sports			-0.012 (0.009)	-0.014
Income from Job			0.013[**] (0.004)	0.031
Income from Other			0.020[***] (0.005)	0.041
Parent education			-0.006 (0.010)	-0.007
Sex (1=Males)[b]			0.056[*] (0.023)	0.027
Hispanics (1=Hispanics)[c]			-0.050 (0.033)	-0.017
Blacks (1=Blacks)[c]			-0.075[*] (0.037)	-0.023

(table continues)

Table 2 *(continued)*.

	Lifetime Marijuana Use			
	Model 1		Model 2	
	B	β	B	β
	(SE)		(SE)	
Constant	1.406[***]		0.873[***]	
	(0.014)		(0.082)	
R^2	0.016		0.352	
Adjusted R^2	0.015		0.350	
Model F	46.767[***]		212.272[***]	
Model Degrees of Freedom	2, 5872		15, 5859	

Note: B (SE) = unstandardized estimate of the regression coefficient (and its standard error).
β = standardized estimate of the regression coefficient.
[a]Two-parent households is the reference group.
[b]Females is the reference group.
[c]Whites is the reference group.
[***]$p \leq 0.001$, [**]$p \leq 0.01$, [*]$p \leq 0.05$ (two-tailed tests)

Model 2 – Control Variables

In Model 2 in Table 2, the thirteen control variables are added to the original model. As

was seen in the first model, Mother-Only is statistically significant at the .001 level and the

variable Father-Only now statistically significant at the .01 level. Respondents from households

with only a mother present score on average 0.113 points more on the Lifetime Marijuana Use

scale compared to respondents from two-parent households. Adolescents from Father-Only

families tend to score on average 0.198 points more than adolescents from two-parent

households. Adolescents living in a household with only a father present still score the highest on

the Lifetime Marijuana Use scale with the introduction of the control variables. Variation in

Lifetime Marijuana Use explained by the Family Structure variables increased to 35.2% with the

introduction of the control variables with an R^2 of 0.352.

According to Hypothesis 1, it was predicted that eighth and tenth graders residing in a

two-parent household would have the lowest rates of lifetime marijuana followed by adolescents

in Mother-Only households and adolescents from Father-Only households having the highest rates. Based on the information presented in the previous paragraph, this hypothesis is supported and is similar to results found in extant literature.

While the hypotheses in this research do not address the particular effects of the control variables, those control variables that are statistically significant should be noted. This allows for a comparison between the theories from which the control variables were drawn from and to determine if the predicted effects are what was expected or not based on those theories. The control variables Risky Acts, Exciting Friends, Playing Sport, Parent Education, and Hispanics are not statistically significant in the second model estimated. The remaining eight control variables are statistically significant including Grades, Kick Out of Danger, Friends who Smoke Marijuana, Volunteer Work, Income from Job, Income from Other, Sex, and Blacks.

The variables that were derived from social control and bonding theory include Grades ($p<.001$), Volunteer Work ($p<.001$), and Playing Sports (n.s.). A coefficient of -0.148 for Grades indicates that Lifetime Marijuana Use is predicted to decrease 0.148 units with every one unit increase in Grades, holding all else equal. Volunteer Work had a coefficient of -0.045, which means that a one unit increase in Volunteer Work results in a 0.045 unit decrease on the Lifetime Marijuana Use scale, holding all else equal. Playing Sports was not statistically significant. Both Grades and Volunteer Work had predicted effects on the dependent variable. It makes sense that as an adolescent's grades increase, the rate of marijuana use tends to decrease. It also makes sense and is in line with theory that as the amount of time spent volunteering increases, the rate of marijuana use decreases.

For differential association, the variables used included Friends who Smoke Marijuana ($p<.001$) and Exciting Friends (n.s.). Out of the variables that are statistically significant at the

.001 level, Friends who Smoke Marijuana, has the strongest effect with a coefficient (β=0.500), holding all else equal. The coefficient is positive, which means that as the number of friends who smoke marijuana increases, the rate of smoking marijuana is predicted to increase as well. Specifically, a one-unit increase in Friends who Smoke Marijuana results on average in a 0.432 unit increase on the Lifetime Marijuana Use scale. Exciting Friends was not statistically significant. The results for Friends who Smoke Marijuana is consistent with differential association theory, meaning that adolescents learn delinquent behaviors from their peer groups.

The variables used to control for self-control theory include Kick out of Danger (p<.001) and Risky Acts (n.s). Regarding Kick out of Danger, with every one unit increase of Kick out of Danger, respondents are predicted to score, on average, 0.047 points more on the Lifetime Marijuana Use scale, holding all else constant. This result is consistent with what was predicted, meaning that based on the research we would expect to see a positive relationship between the two variables and we did: an adolescent who gets a kick out of danger would be more likely to participate in other risky acts, like smoking marijuana.

Lastly, for strain theory, the variables used were Income from Job (p<.01), Income from Other (p<.001), and Parent Education (n.s.). Income from Other and Income from Job both had a positive effect with coefficients 0.013 and 0.020, respectively. This means that as income increases so does lifetime marijuana use. This result is opposite of what was expected. It was theorized that less income would result in more marijuana use. However, perhaps the strain would come more from the economic situation of the parents and less from the adolescents. Also, income the adolescent has may facilitate the purchasing of marijuana. This is all speculation, of course, and perhaps a better way of measuring socioeconomic status in the future needs to be used. Parent Education was not statistically significant.

The demographic control variables were Sex ($p<.05$) and the two race dummies, Hispanics (n.s.), and Blacks ($p<.05$). Sex had a positive effect. Males are predicted to score 0.056 points higher than females on the lifetime marijuana use scale. The difference between the two is relatively small. For Blacks, a coefficient of -0.075 indicates that Blacks are predicted to score on average -0.075 points lower than Whites on the lifetime marijuana use scales, controlling for the other variables. Hispanics is not statistically significant, which means that Hispanic respondents do not tend to differ from White respondents on the lifetime marijuana use scale.

<div align="center">Analysis 2</div>

Model 1 – Main Effect

Table 3 presents the results of the ordinary least squares regression of Lifetime Marijuana Use on Gender Match. The variable Gender Match was created to test the differences in marijuana use between single-parent households where the gender of the parent and child are the same with single-parent households where the gender of the parent and the child is different. Model 1 indicates that Gender Match is statistically significant at the .05 level. A constant of 1.813 indicates that adolescents in households with a single-parent of the opposite gender score 1.813 on the Lifetime Marijuana Use scale. A coefficient of -0.152 indicates that adolescents from households from with the same gendered parent score 0.152 points less on the scale. Only 0.4% of the variation in Lifetime Marijuana Use is explained by its linear relationship with Gender Match.

Model 2 – Control Variables

The introduction of the control variables results in *Gender Match* no longer being statistically significant, indicating that adolescents in single-parent households with the same gendered parent do not differ from adolescents in single-parent households with the opposite

gendered parent. The fit of the model improved with the added control variables with R^2

increased from 0.004 to 0.349. Therefore, an R^2 in Model 2 indicates that 34.9% of the variation

in Lifetime Marijuana Use is explained by its linear relationship with Gender Match with the

introduction of the control variables. As for the controls, only Grades ($p<.001$), Friends Who

Smoke Marijuana ($p<.001$), Kick out of Danger ($p<.001$) and Volunteer Work ($p<.05$) are

statistically significant. Grades has a coefficient of -0.188, which means that for adolescents in

single-parent households, Grades still has the anticipated negative effect. Adolescents with better

grades score lower, on average, on the Lifetime Marijuana Use scale. Friends who Smoke

Marijuana still has the same anticipated effect, with a one unit increase resulting, on average, in a

0.543 unit increase on the Lifetime Marijuana Use scale. Volunteer Work has a coefficient of -

0.066 indicating that more volunteer work results in lower marijuana rates. Lastly, Kick out of

Danger has a negative effect which is the opposite of what was seen in Table 2. Due to the lack

of statistical significance in Model 2, same gendered households do not differ from opposite

gendered households. Therefore, this research does not find support for the second hypothesis.

Table 3

Results of Ordinary Least Squares Regression of Lifetime Marijuana Use on Gender Match and Other Characteristics for a Sample of United States Eighth and Tenth Graders, Outliers Excluded (Weighted $N = 1125$)

	Lifetime Marijuana Use			
	Model 1		Model 2	
Variable	B	β	B	β
	(SE)		(SE)	
Gender Match (1=Adolescent and Parent have same gender)[a]	-0.152[*]	-0.060	0.018	0.007
	(0.073)		(0.073)	
Grades			-0.188[***]	-0.121
			(0.039)	
Kick out of danger			-0.067[**]	0.075
			(0.026)	
			(table continues)	

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Table 3 (*continued*).

Variable	Model 1 B (SE)	Model 1 β	Model 2 B (SE)	Model 2 β
	Lifetime Marijuana Use			
Risky acts			0.018	0.020
			(0.025)	
Friends who smoke marijuana			0.543[***]	0.544
			(0.024)	
Exciting friends			-0.045	-0.046
			(0.025)	
Volunteer work			-0.066[*]	-0.054
			(0.029)	
Playing sports			-0.007	-0.007
			(0.022)	
Income from Job			0.015	0.031
			(0.011)	
Income from Other			0.004	0.007
			(0.013)	
Income from Other			0.004	0.007
			(0.013)	
Parent education			-0.016	-0.015
			(0.025)	
Sex (1=Males)[b]			0.105	0.041
			(0.075)	
Hispanics (1=Hispanics)[c]			0.036	0.010
			(0.085)	
Blacks (1=Blacks)[c]			-0.132	-0.044
			(0.071)	
Constant	1.813[***]		1.031[***]	
	(0.053)		(0.219)	
R^2	0.004		0.349	
Adjusted R^2	0.003		0.386	
Model F	4.394[*]		55.331[***]	
Model Degrees of Freedom	1, 1223		14, 1210	

Note: B (SE) = unstandardized estimate of the regression coefficient (and its standard error). β = standardized estimate of the regression coefficient.
[a]Households where the adolescent and the parent have opposite sex is the reference group.
[b]Females is the reference group.
[c]Whites is the reference group.
[***]$p \le 0.001$, [**]$p \le 0.01$, [*]$p \le 0.05$ (two-tailed tests)

CHAPTER 5

DISCUSSION AND CONCLUSION

The variable broken home measures family structure and has been studied extensively over the last century. As stated previously, Wilkinson (1974) argues that broken home as a predictor of juvenile delinquency has gone through periods of acceptance and rejection. At the time Wilkinson (1974) wrote about broken home as a predictive variable, she argued that broken home hit a period of renewed interest in the 1950s. Based on the research presented in this paper, it is apparent that this renewed interest in the broken home variable has continued, and broken home is seen as an acceptable explanatory variable for juvenile delinquency. Research has found support for the four theories presented in this paper: social control and bonding theory, self-control theory, differential association, and general strain theory. Adolescents who have more bonds with parents and approved social institutions, like school or church, on average have lower rates of delinquency. Parents who have more control over their children, which involves more monitoring and modifying of a child's behavior, is related to lower levels of delinquent behavior on average. This directly relates to peer relationships adolescents have.

Previous research indicates that adolescents who live in single-parent households on average engage with more delinquent peers than adolescents who live in intact households. Researchers have suggested that households with only one parent present are not able to monitor the child's peer relationships as diligently due to being stretched thinly by all the roles the single parent must assume. Because the rate of cohabitating families is rising, a significant amount of research has been conducted to study the link between cohabitation and juvenile delinquency. Researchers have found that cohabitation is linked with high levels of delinquency when compared to intact families and even single-parent families. The level of delinquency could be

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due to transitions children experience, such as moving to a different house or the introduction of a new adult. Children living in cohabitating households may have more adults in their life than children who live in intact families. The higher number of adults may equate to more stressful events the child has to experience. This could lead the child to have behavioral problems. The extant literature and research presented in this paper guided the analysis that was conducted. However, the research in this paper contradicts some research presented in Chapter 2.

Summary of this Study

The purpose of this study is to examine the relationship between family structure (two-parent households, single-mother households, and single-father households) and the rate of lifetime marijuana use among eighth and tenth grade adolescents in the United States. Secondary data analysis was completed using data from the Monitoring the Future Survey from 2012.

Two separate analyses were conducted. The first analysis tested the differences in rates of marijuana use between two-parent households, single-mother households, and single-father households. Results indicated that both the independent variables Mother-Only and Father-Only were statistically significant at the .001 level. Adolescents from households with only a father present scored the highest on the Lifetime Marijuana Use scale, followed by adolescents from single-mother households. Adolescents from two-parent households had the lowest rates of marijuana use. Mother-Only and Father-Only remained statistically significant with the introduction of the control variables. The fit of the model improved with an increase in the R^2. These results support the first hypothesis and are consistent with existing research on this topic.

Because the control variables used in this study were derived from several theories, it is important to discuss the effects, if any, they had. All four theories from which the control variables were derived from had an effect on the relationship between the Family Structure variables and Lifetime Marijuana Use. This suggests that while family structure may have an effect on marijuana use, other factors are playing a role as well. The variables Grades, Volunteer Work, Friends who Smoke Marijuana, Kick out of Danger, Income from Job and Income from Other are all statistically significant and all have an effect on the dependent variable, Lifetime Marijuana Use. Therefore, this research falls in the middle of the divide among researchers about the effect of family structure on delinquency. As stated previously, the variable Mother-Only and Father-Only were statistically significant; however, the introduction of the control variables to the model decreased the statistically significance of Father-Only and decreased the effect of Mother-Only and Father-Only. The control variables improved the fit of the model, indicating that other variables than just family structure should be given consideration as well.

The second analysis included only adolescents living in single-parent households. Lifetime Marijuana Use was regressed on Gender Match, a dummy variable created to test the same-sex hypothesis. Results indicated that Gender Match was statistically significant at the .05 level. This indicates that adolescents who have the same gender as their single-parent are different than adolescents who have the opposite gender as their single-parent. Adolescents who have the opposite gendered parent score 1.813 points on the Lifetimes Marijuana Use scale and adolescents who have the same gendered parent score 0.152 points fewer. The introduction of the control variables improved the fit of the model but made Gender Match not significant, indicating no difference between the two groups of adolescents and indicating no support for the second hypothesis.

Recommendations

Based on the research, it is safe to say that family structure does play a role in the rates of lifetime marijuana use. However, since the type of family structure that exists for a family is largely beyond the control of the members in the family, recommendations are made that go beyond simply changing a family structure. Based on previous research, the quality of parenting is crucial to the welfare of children no matter what family structure is present. With that said, it may be easier for intact families to give better quality parenting due to the fewer roles the parents have to assume. It is recommended that regardless of the living arrangements, parents attempt to become more involved in their child's life. Based on this research, it is also recommended that parents take advantage of school programs that allow their children to participate in sports, clubs, or hobbies that would limit the amount of time the child has to be delinquent. As seen in the results, the better an adolescent does in school, the lower the rates of marijuana use, on average. Also, playing sports and participating in volunteer work were beneficial for the adolescents. A focus on school and school related activities may be especially beneficial for households with single parents who are unable to be home as often.

Focusing on school programs, previous researchers have found support for a program called Career Academy. This program is intended to assist students in forming meaningful relationships with mentors and peers through membership to a learning community on school campus. The students belong to this learning community for the entirety of their high school career and are exposed to job opportunities as well as help academically. Kemple (2004) found that after graduation, males in the Career Academy made, on average, $2,088 more than males who were not involved in a Career Academy. In addition, the dropout rate was lower on average for students in the academy compared to students not in the academy. While this research does

not directly assess the impact Career Academies have on rates of delinquency, it does show positive outcomes for students that could potentially deter delinquent behavior. In other words, it would not hurt to involve students in programs like this.

While this research was cross-sectional, longitudinal research has been conducted to study the transition to different family types and it is important to highlight that research and recommendations that can be made from that research. Because transitioning to a blended family with a step parent or a cohabitating partner appears to exert the most strain on children and is linked to high levels of delinquency, Schroeder et al. (2010) recommend that "single parents contemplating cohabitation or remarriage should be aware that a family transition of this type, under certain conditions, can lead to increases in negative behavioral outcomes for their children" (p. 598). Therefore, it is important for parents to understand that children experience strain and stress from this transition and to be open and understanding of the child's feelings. Related to this is another finding by Schroeder et al. (2010) that states, "Initial levels of parental attachment are essential predictors of offending outcomes following a family formation" (p. 598). Level of parental attachment and level of delinquency have an inverse relationship. This means that households that transition from single parent to blended households that have high levels of parental attachment experience lower levels of behavioral problems. Consequently, households that have low levels of parental attachment experience higher levels of behavioral problems. It is recommended that single parents understand this before and during the transition period. A program that could assist single parents is Preparing for the Drug Free Years (PDFY), which was developed to build positive relationships between parent and child to prevent early use of drugs and alcohol. This program is based on social control and bonding theory and argues that increased attachment protects the child from delinquent behavior. Spoth et al. (2009) found

that implementation of this program significantly reduced the number of adolescents who engaged in alcohol or drug use compared to the control group. In addition, Kosterman et al. (1997) found that interaction increased between mothers and children and problem-solving interactions with children increased for both mothers and fathers. Programs like this are worth researching more and should be made available to single-parent households because it fosters positive parent-child interactions, which could result in higher levels of attachment, and also because it helps parents model behavior for their children that is conducive to a positive lifestyle.

Limitations of the Study

There are several limitations to this study. The first and most obvious limitation of this study is the way in which family structure was measured. Two questions were used to form the Family Structure variables. The questions asked the adolescent if they had a father (or stepfather) present and if they had a mother (or stepmother) present. Therefore, there is no way to know which respondents have biological parents present and which have stepparents present. This is a severe limitation for this research because as noted in the literature review, previous researchers have found major differences between households with biological parents present and households with stepparents present. Also, this research would have liked to look at cohabitating households and it may have done so unknowingly. Adolescents may have interpreted the family structure questions to mean that they should mark "yes" regardless of the marital status of the adults in the household. Unfortunately, there is just no way to know for sure the exact relationship of the parent to the adolescent. Another limitation of this study is that to control for the theories presented in the literature review, variables had to be chosen from the existing data set. While it is convenient to use data from a survey that already exists, it does limit the ability to measure exactly what should be measured. A third limitation of this research is that the research

design was cross-sectional, which does not get into the changing nature of family structures and what those changes could mean for adolescent marijuana use. This is connected in some ways to the final limitation of this study. The dependent variable was measured by lifetime marijuana use of the adolescent. While lifetime marijuana is an indication of the adolescent's lifetime drug habits, it could be misleading. To illustrate, an adolescent could state that he has used marijuana 20 times in his life but those occurrences happened several years prior while he lived in a different household structure. Using a more recent rate of marijuana use would be a better guarantee that those rates of marijuana use occurred within the current household.

Suggestions for Future Research

Regarding research, future studies should take a longitudinal approach to the relationship between family structure and adolescent marijuana use in order to possibly show a causal relationship between the two variables. Future studies should also have more clearly defined family structure types in order to truly compare the types of families, e.g., stepparent households compared with two biological parent household. Also, future studies that want to analyze in more detail the effect of family structure should examine the differences in delinquent behavior between households that have two biological parents who are married and households that have two biological parents who are not married. Apel and Kaukinen (2008) attempt to answer this question but more research needs to be done to see if the children from these two households truly are different and if there is a martial effect present.

APPENDIX

STUDY VARIABLES

Dependent Variable	Response Categories
On how many occasions (if any) have you used marijuana (weed, pot) or hashish (hash, hash oil) in your lifetime?	1 – 0 Occasions 2 – 1-2 Occasions 3 – 3-5 Occasions 4 – 6-9 Occasions 5 – 10-19 Occasions 6 – 20-39 Occasions 7 – 40 or More Occasions
Independent Variable	
Which of the following people live in the same household with you? (Mark all that apply) Father (or stepfather)	0 – Unmarked 1 – Marked
Mother (or stepmother)	
Control Variables	
If you were having problems in your life, do you think you would talk them over with one or both of your parents?	1 – No 2 – Yes, for at least some of my problems 3 – Yes, for most of all my problems
The next questions are about your experiences in school. Which one of the following best describes your average grade in this school year?	1 – D (69 or below) 2 – C- (70-72) 3 – C (73-76) 4 – C+ (77-79) 5 – B- (80-82)

	6 – B (83-86)
	7 – B+ (87-89)
	8 – A- (90-92)
	9 – A (93-100)
How many of your friends would you estimate smoke marijuana or hashish?	1 – None
	2 – A Few
	3 – Some
	4 – Most
	5 – All
How much would you agree or disagree with each of the following statements? I get a real kick out of doing things that are a little dangerous.	1 – Disagree
	2 – Mostly Disagree
	3 – Neither
	4 – Mostly Agree
I like to test myself every now and then by doing something a little risky.	5 – Agree
I prefer friends who are exciting and unpredictable.	
How often do you do each of the following? Participate in community affairs or volunteer work.	1 – Never
	2 – A few times a year
	3 – Once or twice a month
Actively participate in sports, athletics or exercising.	4 – At least once a week
	5 – Almost every day
The next three questions ask about your parents. If	1 – Completed grade school or less

you were raised mostly by foster parents, stepparents, or others, answer for them. For example, if you have both a stepfather and a natural father, answer for the one that was the most important in raising you. What is the highest level of schooling your father completed?	2 – Some high school 3 – Completed high school 4 – Some college 5 – Completed college 6 – Graduate or professional school after college 7 – Don't know, or does not apply
What is the highest level of schooling your mother completed?	
During an average week, how much money do you get from… A job or other work? Other sources (allowances, etc.)?	1 – None 2 – $1-5 3 – $6-10 4 – $11-20 5 – $21-35 6 – $36-50 7 – $51-75 8 – $76-125 9 – $126-175 10 – $176 or more
What is your sex?	1 – Male 2 – Female
How do you describe yourself? (Select one or more responses). A. Black or	1 – Black or African American 2 – White (Caucasian)

African American; B. Mexican American or Chicano; C. Cuban American; D. Puerto Rican; E. Other Hispanic or Latino; F. Asian American; G. White (Caucasian); H. American Indian or Alaska Native; I. Native Hawaiian or Other Pacific Islander. Recoded by researchers into the responses given to the right. Respondents who selected more than one answer or did not fit into the categories in the right were excluded.	3 – Hispanic (Mexican, Cuban, Puerto Rican, or Other Hispanic).

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