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Family Structure and its Effect on Children's Prescription Stimulant Abuse

Andrew David Cannatella

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FAMILY STRUCTURE AND ITS EFFECT ON CHILDREN'S PRESCRIPTION
STIMULANT ABUSE

By

Andrew David Cannatella

A Thesis
Submitted to the Faculty of
Mississippi State University
in Partial Fulfillment of the Requirements
for the Degree of Master of Science
in Sociology
in the Department of Sociology

Mississippi State, Mississippi

May 2012

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FAMILY STRUCTURE AND ITS EFFECT ON CHILDREN'S PRESCRIPTION
STIMULANT ABUSE

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Prescription stimulant abuse is a recent drug abuse trend that is becoming a major problem across the United States. Previous research has mainly examined the amount of individuals that are abusing prescription stimulants and has ignored using sociological theory to explain why individuals are abusing these drugs. To address this gap in the literature, this thesis applies the theory of social capital to explain how an adolescents' family structure can affect the likelihood they will abuse prescription stimulants. Examining survey data from the 2008 The National Survey on Drug Use and Health, it was found that adolescents from single parent households, with minimal parental involvement, are more likely to report abusing prescription stimulants. These findings highlight the influence of family structure and parental involvement in an adolescent's life, as well as the need for additional research in this area to fully understand prescription stimulant abuse.

DEDICATION

I would like to dedicate this research to my family, without their sacrifices and inspiration this project would not have been possible. Thank you for teaching me life lessons and sacrificing so that I “could have it better”.

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I would like to express sincere appreciation to the many individuals who made this project possible. First of all, many thanks are due to my committee chair, Dr. Jeralynn Cossman. She has not only influenced my career in sociology, but also greatly influenced my life. She taught me much more than sociology; she taught me how to conduct myself professionally and how to apply myself. Dr. Cossman's patience, support, and time during this project is greatly appreciated. Next, I would like to thank the other two members of my committee, namely, Dr. Brauner-Otto and Dr. Gregory Dunaway, whose encouragement, suggestions, and time, have no doubt made this project possible. Also, I would like to thank Dr. Melinda Pilkinton for introducing me to this specific research and Dr. Nicole Rader for first introducing me to sociology. Finally, I would like to thank the graduate students of the sociology department at Mississippi State University, especially Derrick Shapley, Philip Mason, and Lauren Vasquez. Their advice, mentoring, and friendship motivated me not only to finish this project, but to push myself to become a better scholar.

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CHAPTER I

INTRODUCTION

While the United States has been celebrating the decreasing rates of alcohol use and illicit drug abuse over the past decade (Olfson, Gameroff, Marcus, and Jenson 2003), the U.S. ignores the fact that it still consumes two thirds of the world's illicit drugs (Manchikanti 2007). Adolescents have the highest population of drug abusers and marijuana is the drug of choice, but prescription drug use is increasing rapidly (Compton and Volkow 2006). In the United States, studies have indicated substantial, increasing morbidity associated with prescription drug abuse as well as a rise in overdosing from prescription drugs (Cai, Crane, Poneleit, and Paulozzi 2010). These statistics show that while drug abuse is decreasing, it still remains a major problem that needs to be addressed. Drug abuse has been linked to family structure (Rabbani and Alexander 2009), education (Olfson et al. 2003), and income (Manchikanti 2007). This project concentrates on how family structure can affect an individual's behavior. Specifically, analyses are conducted to determine how an adolescent's family structure affects the likelihood an individual will abuse a particular drug, prescription stimulants. This project will employ a social capital perspective stating that social capital has a direct effect on prescription stimulant abuse.

The family holds a significant position in sociological research. Children are heavily affected by their family structure (McLanahan S. and G. Sandefur 1994; Hoffmann 2002; Lareau 2003; Hollist and McBroom 2006; Brown and Rinelli 2010).

This study examines how a child's family structure influences the likelihood that they will use medical stimulants recreationally, by building on previous studies that demonstrate the rise of stimulant use in the United States (Olfson et al. 2003). Family structure has been linked to prescription drug abuse; children in larger families have a greater likelihood of prescribed stimulant abuse (Rabbani and Alexander 2009). Prescription drug abuse is unique from other types of drug abuse because typical prescription drug abusers are required to have more social capital and wealth to get their prescriptions (Rabbani and Alexander 2009). This project links family structure to individuals taking stimulants for which they are not prescribed or abusing their own prescription medication. In 2002, a total of 2.2 million children were taking stimulants in the United States (Zuvekas, Vitiello, and Norquist 2006).

Theoretical Framework

Children go through socialization, a process where they are taught the norms and customs that exist within society, which prepares them to be integrated into that society. During the socialization process, children receive their first form of social capital from their parents, human capital. Human capital is a form of social capital that is a combination of an individual's education and income. Until children create their own human capital they are measured by their parent's human capital. Human capital is combined with other forms of capital to create social capital. The term social capital is broadly referred to as the connections that exist within an individual's social network. The quantity and quality of that individual's social capital determines the likelihood of that individual successfully integrating into society. I argue that, unlike individuals who

abuse illicit drugs, prescription stimulant abusers are more likely to have higher levels of social capital.

During childhood, children develop their ideals, morals, values, behaviors, and attitudes through observing and interacting with parents, peers, neighbors, and adults in authoritative positions (Axinn and Thornton 1993; Axinn, Barber, and Thornton 1998; Bandura 1969; Cunningham and Thornton 2005; Pearce and Thornton 2007). Early life beliefs and behaviors are the first life course forms of social capital (Coleman 1988) and can affect children's decision making processes in adulthood (Axinn and Thornton 1993). An adolescent's parents are a main contributor to their social capital (Coleman 1988) and can have positive or negative effects (Furstenberg and Hughes 1995). A positive aspect of social capital could be children learning from their parents that using drugs is a deviant behavior, whereas a type of negative social capital could be parents using drugs in front of their children and that child believing that using drugs is an acceptable behavior. Social capital also has positive and negative implications on an individual's life: people can use social capital to become socially mobile within society (Furstenberg and Hughes 1995), but social capital is unequally distributed among individuals in society (Lareau 2003; Ravanera 2007), and therefore reinforces social inequalities.

Childhood Socialization

Parents play an integral role in a child's socialization process, often simply through observation and repetition of parents behaviors (Bandura 1969; Axinn and Thornton 1993; Pearce and Thornton 2007). Additionally, interacting with parents leads children to develop similar ideals, attitudes, and values (Bandura 1969; Axinn and Thornton 1993; Pearce and Thornton 2007). Children often imitate their parent's

mannerism, behaviors, and actions (Akers 1985). Parental ideals and behaviors are also passed on to children differentially according to parental education (Bandura 1969), income (Lareau 2003), intensity of relationships (Sutherland 1947), and family structure (Furstenberg and Hughes 1995; Ravanera 2007). Living with two parents can benefit children because they have the opportunity to learn from multiple sources and are more likely to spend time around more than one adult (Lareau 2003).

The ideals and behaviors which parents pass on to children can be affected by several factors. Parental education is a vital factor in the childhood socialization process (Coleman 1988). A parent's education tends to influence the beliefs and behaviors of that parent, leading parents with higher education levels being able to provide more positive outcomes for their children (Eccles 1993; Davis-Kean 2005). Parents with higher education levels tend to provide a more positive home environment compared to parents with lower education levels (Coleman 1988). By providing a positive home environment, highly educated parents are more involved in ensuring children complete homework, assisting children with schoolwork, and providing an environment conducive to education. Additionally, more educated parents produce a warm social climate within the household (Klebanov, Brooks-Gunn, and Duncan 1994) and are more likely to set realistic achievements and expectations for their children (Alexander, Entwisle, and Bedinger 1994). On the other hand, parents with lower education levels can set unrealistic goals for their children (Alexander et al. 1994). When these goals are not met children are exposed to a sense of failure and disappointment (Alexander et al. 1994). Higher parental education also lowers the likelihood that children will participate in delinquent or risky behaviors (Friestad, Pirkis, Biehl, and Irwin 2003).

Parent's income has a major effect on their children's socialization (Ravanera 2007). Lower income parents often do not have the resources available to send their children to the best schools, allow children to participate in various extracurricular activities, or afford proper supervision for children after school (Lareau 2003). Lower income parents may also be forced to work long hours to accumulate the resources needed to give their children the best opportunities possible. Working long hours can have negative effects on children by limiting the time children have to observe and interact with their parents (Furstenberg and Hughes 1995). Lower income parents are often forced to live in lower quality neighborhoods or to send their children to sub-par schools. Being unable to provide adequate adult supervision or appropriate participation in extracurricular activities (Lareau 2003), parents are potentially exposing children to a variety of negative behaviors like drug use (Furstenberg and Hughes 1995; Boardman, Finch, Ellison, Williams, and Jackson 2001). Since two parent families typically have dual incomes, single parent households are more likely to be low-income households.

Family structure affects children's socialization. Children, whose parents are married, are exposed to more positive opportunities (Ravanera 2007; Brown and Rinelli 2010) and have access to more resources that allow for positive opportunities, such as participation in extracurricular activities and a higher quality education (Lareau 2003). Furthermore, these types of opportunities give children additional positive role models to observe and interact with when parents are unavailable, such as adult supervisors after school (Wentzel 2002). Two parent families also provide larger social networks for children. While children in two parent families seem to have many positive socialization experiences, children raised in single parent families have a greater likelihood of negative socialization experiences such as exposure to financial and behavioral problems

(Manning and Brown 2006; Brown and Rinelli 2010). These problems lead to children raised in single parents households being more likely to participate in risky and delinquent behaviors (Adalbjarnardottir and Hafsteinsson 2001; Bergman and Scott 2001; Brown and Rinelli 2010). Compared to two parent families, single parent families tend to have lower education levels (Lareau 2003; Brown and Rinelli 2010).

Socialization and Social Capital

Socialization is not uniformly positive. Children can develop negative behaviors from their parents as well. If adults are observed eating healthily, treating other individuals with respect, and staying out of trouble, their children are more likely to behave similarly (Bandura 1969), but a child raised in an environment where their parents engage in risky behaviors (e.g., abusing prescription drugs, drinking large quantities of alcohol, smoking, or using illicit drug) are more likely to participate in risky behaviors as well (Smart and Fejer 1972; Adler and Lotecka 1973; Annis 1974; Barnes, Farrell, Cairns 1986). Parents who drink alcoholic beverages at home in front of their children are likely providing their children's first exposure to alcohol (Barnes et al. 1986). Alcohol consumption and illegal drug use have direct connections to other types of substance abuse (Smart and Fejer 1972; Adler and Lotecka 1973; Annis 1974; Poulin 2001; Boyd, McCabe, Cranford, and Young 2006; McCabe, Boyd, and Young 2007). Children who are exposed to adults participating in risky behaviors during childhood may internalize this negative socialization through those interactions. Other sources of negative socialization can come from excluding outsiders, restricting individual's freedoms, and downward leveling norms (Portes 1998). All of these experiences can factor in to an individual's social capital.

Human capital is one aspect of social capital (Coleman 1988) that combines an individual's education and life experiences (Coleman 1988; Lareau 2003). Human capital is the earliest form of social capital that an individual acquires. Before children reach school age or have many experiences of their own, their human capital is rooted in their parent's education (Coleman 1988). The transference of human capital occurs when children are undergoing the socialization process. Parents have to be present and active in their child's life in order to successfully transfer human capital (Coleman 1988). Parents have varying levels of education which results in an unequal distribution of human capital in children (Bourdieu 1977). Parents with higher education levels are more likely to spend time teaching their children different lessons, which passes along human capital, compared to parents with lower education levels (Hill and Stafford 1974; Leibowitz 1974, 1977). Children whose parents have higher education levels spend more time studying, more time reading, and less time watching television (Timmer, Eccles, and O'Brien 1985). Children tend to either meet or exceed the education level of their parents (Lareau 2003), exacerbating preexisting disparities in human capital. Children who grow up in two parent families typically have more human capital available because their parents are more likely to be present in the home and active in the child's life. Children raised in single parent families are less likely to have that human capital available to them because their parent may be forced to work long hours to financially support their family and will not be as active in their child's life because they are exhausted after work (Lareau 2003). Moreover, children from single parent families are more likely to gain negative experiences during childhood because they are often left unsupervised (Lareau 2003). Human capital refers to an individual's characteristics whereas social capital refers to characteristics of relationships (Parcel and Menaghan 1993).

Social capital is a multi-dimensional concept that is very difficult to measure (Ravanera 2007). Bourdieu (1986), Coleman (1988, 1990), and Loury (1977, 1981) are often cited as the early promoters of social capital. Additionally, Putnam (1995, 2000) has recently made contributions with his work on social capital. Social capital can be defined as the social networks that individuals develop during their lifetime (Putnam 1995, 2000; Lareau 2003; Stone, Grey, and Hughes 2003). The interactions and connections that occur within individuals' social networks can have an effect on an individual's life. This definition can be applied when social capital is referred to as a feature of an individual (Astone, Nathanson, Schoen, and Kim 1999). The quality and quantity of relationships in an individual's social network affect social capital (Lareau 2003). Another way social capital can be defined is by Coleman (1988, 1990) and McLanahan and Sandefur (1994) who refer to social capital as attributes held by families and communities. Coleman (1988, 1990) argues that social capital is a form of social organization that produces something valuable for individuals. During childhood, children use their parent's social capital to improve their social position (Lareau 2003). Here, social capital refers to the complex social mechanisms that parents acquire to advance their children's chances of success (Coleman 1988). Social capital can be affected by an individual's education, class, income, family structure, and occupation (Coleman 1988; Parcel and Menaghan 1993; Lareau 2003).

The higher an individual's education, the more social capital they have available (Coleman 1988, 1990), and the more likely they are to be socially productive in the future (Bianchi and Robinson 1997). With increased education, individuals are more likely to have higher quality social networks at their disposal (Lareau 2003) which can aid individuals in acquiring better quality healthcare, higher income, and a higher

occupational status (Parcel and Menaghan 1993; Lareau 2003; Conrad and Shults 2010). Individuals increase their social capital by accumulating higher levels of income and gaining social status (Coleman 1988). Highly educated parents place their children in positive environments where social interactions can lead to increasing social capital (Bianchi and Robinson 1997). These educational environments can lead to gaining even more social capital in the future.

Income is crucial to providing an economic base for children, but income is also important for social capital in that individuals who have more financial resources are better equipped to provide a quality education and productive home environment for their children (Voydanoff 1987; Lareau 2003). These two assets aid children in acquiring social capital. Typically, investing additional financial resources in schooling provides more qualified teachers and a more conducive environment so children can gain social capital (Parcel and Dufur 2001). Parents must have the financial resources for extra-curricular activities, which are well-organized and provide positive environments for children to interact and accumulate social capital (Lareau 2003). Income can also affect the neighborhood in which an individual resides. Parents command more social capital when they have the financial resources to become part of a positive and socially connected community (Furstenberg and Hughes 1995); social capital that is, in turn, transferred to their children. Children who belong to a positive community are more likely to achieve successful outcomes in life (Furstenberg and Hughes 1995).

Individuals with prestigious occupations have more social capital (Coleman 1988, 1990; Parcel and Menaghan 1994) and can use their social networks to give their children an advantage (Lareau 2003). Parents' work activities influence the social capital available to their children (Parcel and Menaghan 1993). An individual's occupation

contributes a great deal to their income. The amount of time spent at home and the quality of interactions parents have with their children, all are factors that influence parent's and children's social capital. Parents must be present in the household and interact with their children to effectively transfer their social capital to their children (Parcel and Menaghan 1993, 1994; Lareau 2003). Long work hours will also affect an individual's parenting style (Parcel and Menaghan 1993) by reducing time available to teach children life lessons. This, in turn, negatively affects their social capital.

Given the importance of resources and time in the development of children's social capital, family structure affects a family's social capital. Family members are needed to transfer social capital to children (Coleman 1988; Putnam 2000). Families composed of just one adult often find difficulty in creating and sustaining adequate social capital because of time constraints and limited resources (Coleman and Hoffer 1987; Coleman 1988; Parcel and Menaghan 1993; Lareau 2003). This can result in single parent families having less parental involvement (Majoribanks 2002), less time to spend with their children (Lareau 2003; Leonard 2005), and living in less desirable neighborhoods which means sending their children to less desirable schools (Coleman 1988, 1990). In fact, children raised in single parent families are less likely to report their parent as the most influential person in their life (Biblarz and Raferty 1993). All of these factors put children from single parent families at a disadvantage, especially in the ability to accumulate social capital (Parcel and Menaghan 1993; Bianchi and Robinson 1997). Children from two parent families have advantages accumulating social capital because of their higher educational attainment and social well-being compared to children in single parent families (Parcel and Dufur 2001). A family's social capital can affect their goals, opportunities, and behaviors (Schlee, Mullis, and Shriner 2009).

Social Capital and Behavior

Since family structure influences a child's social capital, it is important to understand how a child's social capital can then affect their behavior. Any major change in income, occupation, education, or family structure can affect that family's social capital (Coleman 1988; Parcel and Menaghan 1993; Schlee, Mullis, and Shriner 2009). When experiencing fiscal pressure or employment strain, parents often shift focus from parenting to the source of those pressures (Parcel and Menaghan 1993), potentially threatening parent-child interactions (Coleman 1988, 1990; Parcel and Menaghan 1993). Children with shifting family structures are more likely to drop out of school, have early teen pregnancies, and have difficulty finding a place in the labor market (McLanahan and Sandefur 1994).

Positive social capital can be a deterrent from risky or delinquent behaviors (Wright, Cullen, and Miller 2001; Savage and Kanazawa 2002). Individuals who have large amounts of positive social capital are more likely to conform to the norms of society (Coleman 1988, 1990) and may be less likely to participate in deviant behaviors because of fear of losing social relationships (Wright et al. 2001; Savage and Kanazawa 2002). On the other hand, individuals who are lacking social capital or have large amounts of negative social capital are more susceptible to deviant or risky behaviors (Wright et al. 2001; Savage and Kanazawa 2002). Engaging in delinquent or risky behaviors may cause individuals to damage or lose some social relationships they have developed. Lacking strong social ties to deter their behavior, these individuals are more willing to commit crimes (Messner and Rosenfeld 1997).

How Prescription Drug Use is Unique

Recently, more individuals are abusing prescription drugs (Olfson, et al. 2003), an act considered to be an illegal and a deviant behavior (Savage and Kanazawa 2002). Prescription drugs are second only to marijuana as a drug of choice for adolescents (Compton and Volkow 2006) and are generally perceived as being safer than illicit drugs by youths (Friedman 2006; Manchikanti 2006), often times just given to adolescents by friends or relatives (Manchikanti 2007). Prescription drugs are typically viewed by adolescents as a means to a safe high and prescription drug abusers believe their abuse is controlled, responsible, and safe (Manchikanti 2007). In spite of statistical analyses detailing the growing problem, prescription drug abuse is still overlooked because so many individuals are engaging in this behavior and without affecting their social relationships (Savage and Kanazawa 2002). When looking specifically at prescription stimulant abuse, determining a child's likelihood to abuse prescription stimulants can be linked to their social capital, since family structure and parental education are both indicators of stimulant abuse (Rabbani and Alexander 2009).

Individuals who abuse prescription stimulants have some unique characteristics compared to illicit drug abusers, largely rooted in individual motivations and traits. Typically, individuals who abuse prescription drugs will be from the upper or middle class because of the social capital required to obtain this specific type of drug (Rabbani and Alexander 2009). Legally, gaining access to prescription stimulants requires a prescription from a physician, which requires access to healthcare, typically via health insurance (Chen and Escarce 2006, 2008; Olfson, Marcus, Weissman, and Jensen 2002). According to this logic, most individuals who are abusing prescription stimulants will have greater social capital and likely come from two parent families (e.g. higher incomes

and educational attainment). Insofar as motivations, many who abuse prescription stimulants do so to enhance their performance in certain areas such as academics (Ford and Schroeder 2009). Prescription stimulants can increase individual's alertness and concentration (Teter, McCabe, Cranford, Boyd, and Guthrie 2005).

Recent drug abuse trends illustrate that stimulant abuse is becoming a major problem in the United States (Olfson et al. 2003; Zuvekas et al. 2006). Statistics show that around 9% of adolescents between the ages of 12 and 17 have used prescription drugs for non-medical purposes (Boyd et al. 2006). These statistics show that 2% out of the overall 9% of prescription drugs abused were prescription stimulants (Boyd et al. 2006). However, a limited amount of research has examined the relationship between stimulant abuse and family structure, leaving room for theoretical advancement. This study examines the relationship that an individual's family structure has on children's behavior using a social capital framework.

Using quantitative data gathered from the 2008 National Survey of Drug Use and Health (NSDUH); I will examine the frequency, patterns, and correlates of adolescent prescription drug abuse in the United States. This data set also allows me to look at some of the basic demographics of individuals who abuse prescription stimulants. I plan to use a bivariate means comparison, bivariate correlation test, and a multivariate logistic regression to test my research question. I anticipate finding that children raised in single parent households are less likely to abuse stimulants compared to children raised in two parent households. Additionally, I expect the majority of prescription stimulant abusers to be white, older adolescent males from smaller households, have higher levels of parental involvement, consumers of alcohol, and abusers of other illicit drugs. Also, I expect that most prescription stimulant abusers will primarily come from a family with higher levels

of income. I selected this specific population of individuals because I believe this group has the highest levels of social capital.

This research is intended to bring awareness to the seriousness of prescription stimulant abuse in the United States. Since prescription stimulant abuse is a recent trend, researchers are unaware of the possible long term effects that can result from abusing these drugs. Furthermore, this research will shed light on the specific population of individuals who are abusing these drugs so that steps may be taken to decrease prescription stimulant abuse. Finally, this research is intended to apply sociological theory to explain a growing trend in drug abuse.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Prescription drug abuse is the second most common type of drug abuse in the United States (Substance Abuse and Mental Health Services Administration [SAMHSA] 2006). Non-medical prescription drug use (referred to as prescription drug abuse from here forward) can be generally defined as the use of prescription medications without a prescription and typically used solely for the feeling or experience caused by the drug (Ford and Schroeder 2009). Individuals who are prescription drug abusers are typically taking incorrect dosages, taking medication to create an altered state, or taking these medications without a prescription (Boyd et al. 2006). About 10% of adolescents report abusing prescription drugs within the past year (SAMHSA 2006). Recent years have seen a dramatic rise in prescription stimulant abuse. According to findings from the National Survey on Drug Use and Health (NSDUH), approximately 8% of individuals living in the United States report stimulant abuse (SAMHSA 2006). Prescription stimulants like Ritalin® and Adderall® are easily obtainable. Many doctors have begun to prescribe stimulants to individuals who do not meet formal criteria for having Attention Deficit Hyperactivity Disorder (ADHD) (Rey and Sawyer 2003). According to the Drug Enforcement Administration (DEA), Ritalin® was the fourth most prescribed drug in the United States in 2003 (White, Becker-Blease, and Grace-Bishop 2006). In recent years, there have been several studies that examine the prevalence and trends in prescription

stimulant abuse, including demographics of users and potential risk factors associated with prescription stimulant abuse. Similar to other forms of substance abuse, rates of prescription drug abuse are highest among adolescents and young adults (SAMHSA 2006). However, there is a limited body of research detailing the influence family structure plays on the likelihood an individual will abuse prescription stimulants.

The first chapter contained the theoretical framework for this study; this chapter details the literature directing the theoretical framework and hypotheses. The literature review starts with a discussion on the history of families in the United States and how families have evolved over the years. Next, I examine the role of families and family structure on adolescent development, specifically the transference of social capital. Finally, I focus on how a family's structure can affect an individual's behavior. Here, I discuss in detail how a family's structure can influence social capital, which in turn can have an effect on an individual's likelihood to abuse prescription stimulants.

Family History and Relevance

Families play a crucial role in the lives of adolescents because families provide youths with much more than just basic needs. Generally, families provide safety early in life and training before individuals enter the larger society (Lareau 2003). Family values mirror and pass on the norms of society as a whole (Arnett 1995). Family members are the primary socializing agents of adolescents (Bandura 1969). Socialization through the family prepares individuals to navigate through society. Family members can be used as a form of social support if an individual is in need (Lareau 2003). In general, family members share similar beliefs and attitudes (Axinn and Thornton 1993). These values are then transferred to their children through early childhood socialization (Cunningham and

Thornton 2005; Pearce and Thornton 2007) and introduce children to societal norms. During childhood socialization, members of the family pass on their social capital to children (Coleman 1988). The more social capital that an individual possess the more social advancement they can have (Lareau 2003). In addition to socializing children, the family provides children with structure and is a form of social control (Coleman 1988; 1990). Strong familial bonds will decrease the likelihood a child will participate in deviant behaviors (Hollist and McBroom 2006).

The structure of families in the United States has changed tremendously over the past 50 years. In the past, families commonly consisted of two parents with numerous children and divorce was rare (Coontz 2006). Over time, society became more accepting of premarital sex, divorce, remaining single, cohabitation, and voluntary childlessness (Thornton 1988; 1989). Women started to actively participate in the labor markets and postponed marriage, which led to the postponement of child bearing. Participating in the labor force also allowed women the opportunity to accumulate financial resources which gave them an option to leave their husbands if they felt mistreated, increasing the number of children being born and raised in single parent households (Popenoe 1993; Bianchi and Casper 2000). Statistics show that 56% of adolescents will live in a single parent household at some point in their lifetime (Manning and Brown 2006).

Families of the past often had extended family members living in the household (Laslett 1973), leading to strong bonds between children and extended family members, who could assist in childrearing. Today, it is uncommon for extended members to be living in the same household as a nuclear family. Nowadays if extended family members live in the same household as nuclear families it is likely attributed to financial problems (Lareau 2003). The changing of household structures can be attributed to negative effects

of the following, weakening kinship relationships (Kobrin 1976), changes in adult's occupation (Brown, Adams, Morello-Frosch, Senier, and Simpson 2010), or family mobility (Entwisle 2007).

Family Structure and Adolescent Development

Relationships that children have with their parents are very important to their development. Early in children's lives, parents have the greatest influence on their development because of the intense time spent interacting (Akers, Krohn, Lanza-Kaduce, and Radosevich 1979; Akers 1985; Bandura 1969). Strong parent-child relationships aid in socializing (Bandura 1969), sharing of values and norms (Axinn and Thornton 1993; Pearce and Thornton 2007), deterring negative behaviors (Akers et al. 1979; Akers and Lee 1996), and transmitting of social capital (Coleman 1988, 1990). The stronger these relationships are the more likely children are to conform and become successful members of society (Barnes et al. 1986).

Children have special bonds with each of their parents and each parent has a different relationship with their child. This is especially true for young adolescents before they start spending the majority of time with their peers (Furstenberg 2000). Boys particularly are more likely to have close bonds with their fathers (King 2005). This close bond between father and son can be vital in a boy's socialization process (Hawkins, Amato, and King 2007). Fathers who are not involved in their children's lives put their children at a disadvantage because they are not transferring their social capital to their children (Coleman 1988, 1990). Fathers can also negatively impact children's lives if they exhibit negative behaviors or have a volatile relationship with the mother (Amato and Rezac 1994). Children whose parents are not active in their lives or children who do

not have strong relationships with their parents generally do not perform as well in school, academically or behaviorally (Hawkins et al. 2007). Mothers who have a close emotional connection with their children can encourage children to keep a close relationship with their father (Hawkins et al. 2007), which reinforces the mother's efforts in childbearing and controlling children's behaviors.

Taking all this evidence into account, children who receive support and active participation from their parents are comparatively advantaged. These children also have higher levels of self-esteem (Gecas and Schwalbe 1986; Whitbeck, Simons, Conger, Lorenz, Huck, and Elder 1991), compared to children who do not have this participation (Robertson and Simons 1989). Single parents may not be able to devote the time needed to positively affect their child's self-esteem in this fashion.

Research shows that children who grow up in a single parent household are at a disadvantage compared to children being raised in a two parent household (Amato 2005; Astone and McLanahan 1991; Downey 1994; McLanahan and Sandefur 1994). Children raised in single parent households are more likely to experience problems emotionally, psychologically, academically, and behaviorally (Amato and Rezac 1994). Children who grow up in homes where both parents are active in their lives are more likely to be exposed to a range of situations that will positively shape their lives for the better (Lareau 2003). For children to benefit from having both parents in the home, parents have to be actively involved in their child's life as well as be available if their child needs them (Amato 1998). If a child's father moves out of the home but is still active in that child's life through regular communication, financial contributions, and minimal parental fighting, it is still a beneficial relationship for the child (Hawkins et al. 2007).

Children who are raised in two parent households have a different childhood compared to children who are raised in single parent households. Children in two parent households could be exposed to the following: more interaction with adults in authoritative positions, more interaction with a diverse friendship base, and a greater sense of entitlement (Lareau 2003). Children in two parent households may benefit from interacting with both parents on a day to day basis, growing up in better economic conditions, gaining quality education, participating in extracurricular activities, and growing up in a less delinquent neighborhood (Lareau 2003). During these interactions children will often imitate their parents so they can receive positive responses and avoid negative responses (Akers et al. 1979; Akers 1985).

Akers argues in his social learning theory that children will often behave in ways that garners positive reinforcement and avoids negative responses (1985). Children often times will strive for positive reinforcement and will do anything to receive it (Akers 1985; Akers and Lee 1996). Two parent families have some advantages over single parent families because they have two parents who can give positive responses. Children in two parent families have the ability to interact with both parents so they receive more positive reinforcement. An example of children receiving positive reinforcement is children being positively rewarded for doing well in school.

Two parent families also have some disadvantages because they might give too much positive reinforcement. Children who receive too much positive reinforcement can be negatively affected (Perone 2003). Children may become stressed because they may feel the need to constantly receive positive responses. Children may also feel the constant pressure to fulfill the high expectations that two parent families put on them (Lareau

2003). This can push children to commit delinquent acts just to achieve a positive response (Akers et al. 1979; Akers 1985; Akers and Lee 1996).

Family Structure and Transmission of Social Capital

The term social capital is difficult to define because it is such a multi-dimensional concept. Social capital can be viewed as a feature of an individual (Putnam 1995, 2000) or as an attribute of a family or neighborhood (Coleman 1988, 1990). In this study, the use of social capital can be defined as an individual's social network, which is affected by education, wealth, or occupational status (Bourdieu 1977; Putnam 1995, 2000).

The structure of a child's family is a major factor in the transmission of social capital. During socialization, children receive their first forms of capital from their parents (Coleman 1988, 1990). Before children are old enough to accumulate their own social capital, children are transferred human capital from their parents (Coleman 1988). Coleman (1988, 1990) classifies human capital as an aspect of social capital. The specific amount of capital that is transferred to children depends on the connectedness children have to their parents and vice versa (Coleman 1988, 1990). The transmission of social capital increases the likelihood of children's future productivity (Coleman 1988, 1990).

Depending on the individual who is transferring social capital to children; social capital can be either negative or positive (Furstenberg and Hughes 1995). Parents have to be available and actively participating in their children's lives for social capital to be transferred (Coleman 1988, 1990). However, social capital is not equally distributed among individuals or equally transferred to children (Bourdieu 1977). As previously discussed, several factors can be attributed to the unequal distribution of social capital, but the one pertinent to this research is family structure.

Children who are raised in single parent households face additional problems accumulating social capital compared to children raised in two parent households (Parcel and Dufur 2001). Single parent households only have one adult present in the home which makes transmitting social capital more challenging. McLanahan and Sandefur (1994) point out several potential negative outcomes for children raised in single parent households. Teen pregnancy, difficulty establishing themselves in the labor market, and high dropout rates are all attributed to harsh economic circumstances and low parental involvement (McLanahan and Sandefur 1994). Additionally, Coleman (1988) argues that children who are raised in single parent households do not obtain as much social capital from schools or neighborhoods as children raised in two parent households, perhaps because they change residences more frequently and, therefore, have fewer community ties (McLanahan and Sandefur 1994). Children raised in single parent households spend less time with their parents and have less parental supervision after school (Bianchi and Robinson 1997), which may lead to dysfunctional environments for child development. Dysfunctional home environments can be attributed to parents working long hours, lacking financial resources, unstable personal lives, and parent's general lack of knowledge (Parcel and Menaghan 1993; Bianchi and Robinson 1997). Additionally, Bianchi and Robinson (1997) point out that single parents have less time to get involved with their children's school activities and join organizations that can increase their social network. Two parent families might generally provide more social capital than single parent families; children can receive negative forms of capital if their parents do not get along (Parcel and Menaghan 1993). Parents who often argue in front of their children are negatively affecting them.

Children who belong to stable, two parent families have more social capital than children raised in single parent families (Parcel and Dufur 2001). Two parent households have an advantage over single parent households because children have two adults with whom to create bonds, take part in socialization, and transfer social capital (Coleman 1988, 1990; Parcel and Dufur 2001). Children can derive larger amounts of social capital from having two parents available as well as the increased social connections that each parent has with non-family members such as work colleagues, neighbors, and school personnel (Parcel and Dufur 2001). Two parent households also have strong and positive home environments (Parcel and Menaghan 1993; Bianchi and Robinson 1997), which provides a safe setting for children to learn life lessons and accumulate social capital.

Assuming that parents are present in the household and actively involved in their children's lives, children with fewer siblings will have greater amounts of social capital than children with many siblings (Coleman 1988, 1990; Portes 1998). Children who have multiple siblings are more likely to have lower levels of verbal facility, less favorable home environments, and higher levels of behavioral problems (Parcel and Menaghan 1993). Parents who have several children have less time for quality interactions with each individual child. Parental time and material resources are distributed among children, which influence the distribution of social capital (Coleman 1990). Relationships with first born children tend to suffer when families decide to have additional children (Parcel and Menaghan 1993), likely due to the decreased parental involvement that occurs when another child is born. Deciding to have more children not only affects the amount of time parents spend with their children, but also their job and income. Parcel and Menaghan (1993) find that pregnancy, childbirth, and early infant care often interrupts paid

employment. Loss of income can then affect the transference of social capital to children (Parcel and Menaghan 1993).

Family Structure, Social Capital, and Adolescent Behaviors

Family structure influences how a child behaves, which can affect children's social capital (Dornbusch, Carlsmith, Bushwall, Ritter, Leiderman, Hastorf, and Gross 1985; McLanahan and Sandefur 1994; Oman, Vesely, Tolma, Aspy, Rodine, and Marshall 2007). As previously discussed, children tend to share attitudes and behaviors with their parents (Bandura 1969; Axinn and Thornton 1993; Pearce and Thornton 2007). Since parents are the primary individuals children interact with early in their lives these interactions are vital because they have the highest intensity and can have the most influence (Sutherland 1947; Akers 1985). Their attitudes and behaviors, whether they are positive or negative, are often times learned through children imitating their parents (Akers 1985). This line of thinking has been linked to illicit drug abuse (Akers et al. 1979; Akers and Lee).

Children often times imitate parents, siblings, peers, or role models and will often times repeat that behavior if it is met with positive reinforcement (Akers 1985). Early in children's lives they seek positive responses from their parents because they are the main interactions that children have (Akers 1985; Hirschi 2001). An example of this imitation is a child raised by a single parent who sees that parent cohabitating with their new partner, is more likely to cohabit themselves because that child never received negative reinforcement for that behavior. Axinn and Thornton (1993) linked parental attitudes toward cohabitation directly to their children's relationships. If children observe their parents remaining single, those children are also more likely to remain single.

Remaining single will have a direct effect on the amount of social capital that their children will generate in their lifetime because persistently single individuals are often unable to maintain social relationships (Parcel and Menaghan 1993).

Family Structure and Risky Behaviors

The structure of a child's family affects the likelihood they will engage in deviant or risky behaviors (McLanahan and Sandefur 1994; Hollist and McBroom 2006; Oman et al. 2007), including drug use, alcohol consumption, smoking, and early sexual activity. Participating in risky behaviors is correlated with several other negative outcomes, such as skipping school and legal problems (Crosnoe 2006; Swahn, Simon, Hammig, and Guerrero 2004). Boys are especially more likely to engage in risky behaviors than girls (Shah, Arnold, and Travers 2004). Children who participate in these risky behaviors are likely to have lower amounts of social capital (Wright et al. 2001).

Children raised by two parents have an advantage over children raised by single parents because they have more influence on the types of peers their children associate with (Lareau 2003). Two parent families have the luxury of sending children to better schools, participate in structured extra-curricular activities, and living in better neighborhoods (Lareau 2003). Research shows that children often will have similar behavior compared to their peers and share their characteristics (Akers 1985; Akers and Lee 1986; Hirschi 2001). However, this may have a negative effect on children who are not as gifted as their peers, but still constantly pressured by their parents to excel in certain areas (Lareau 2003; Perone 2003). Two parent families are more likely to set higher expectations for their kids (Bianchi and Robinson 1997; Lareau 2003). These high

expectations may turn children to dishonorable means to achieve positive responses from their parents.

Children raised by single parents are at greater risks of participating in deviant behaviors (Thomas, Farrel, and Barnes 1996; Manning, Giordano, and Longmore 2006; Han, Miller, and Waldfogel 2010) because they are often unsupervised for extended periods of time (Han, Miller, and Waldfogel 2010). While the adult is at work children may be left alone. During this unstructured, unsupervised time, children have the opportunity to do a wide range of activities that their parents would not allow them to do normally (Han, Miller, and Waldfogel 2010). Children often times associate with their peers who are also unsupervised and participate in delinquent activities such as alcohol consumption and drug use. While doing these delinquent acts children can receive positive social reinforcement from their peers as well as positive nonsocial reinforcement they receive from the physical effects of alcohol or drugs (Akers and Jensen 2005). Drug use in particular is highest among boys living in single parent households (Thomas, Farrel, and Barnes 1996).

Children in single parent households are more likely to engage in sexual activity (Manning, Giordano, and Longmore 2006), drink and smoke (Blum, Beuhring, Shew, Bearinger, Sieving, and Resnick 2000; Brown and Rinelli 2010; DeLeire and Kalil 2002; Kirby 2002; Oman et al. 2007), and participate in delinquent behaviors (Dornbusch et al. 1985) compared to children growing up in two parent households. These delinquent behaviors are correlated with risky behaviors (Brown and Rinelli 2010; Bergman and Scott 2001); such as children raised in single parent households are more likely to be arrested, commit truancy, and runaway than children raised in two parent households

(Dornbusch et al. 1985). One of these risky, possibly deviant, behaviors that children can participate in is abusing drugs.

Individuals who abuse drugs likely abuse multiple drugs (Poulin 2001; Boyd et al. 2006; McCabe et al. 2007). These polydrug abusers likely have a history of drug abuse, making them more likely to experiment with a variety of other drugs (Boyd et al. 2006; Manchikanti 2007; McCabe et al. 2007). Akers' social learning theory (1985) linked individuals abusing illicit drugs for social and recreational purposes and since individuals often abuse multiple drugs at a time, one of the possible drugs could be prescription medications. However, my argument is that individuals who abuse prescription drugs are unique from individuals who abuse illicit drugs because it is necessary for prescription drug abusers to have high levels of social capital to obtain their prescribed drugs.

Prescription Drugs, Family Structure, and Social Capital

Prescription drug abuse has increased significantly in the United States within the past decade (Olfson et al. 2003; Compton and Volkow 2006). Prescription drugs are medicines that individuals must have a medical prescription to purchase. These medicines include various types such as stimulants (e.g., Ritalin®, Adderall®, Concerta®), pain relievers (e.g., Vicodin®, Percocet®, OxyContin®), sleeping medications (e.g., Ambien®, Halcion®, Restoril®), and sedatives (e.g., Ativan®, Xanax®, Valium®). Prescription drugs are the second most commonly abused drug by adolescents (Compton and Volkow 2006). Individuals who abuse prescription drugs do share some characteristics with illicit drug users (e.g., adolescents are most common abusers), but prescription drug abusers are unique from illicit drug abusers in several ways as well.

Prescription drug abusers are viewed differently by society than illicit drug abusers. In general, people are more accepting of prescription drug abuse because they are under the faulty assumption that abusing prescription drugs is safer than abusing illicit drugs (Friedman 2006; Manchikanti 2006). Individuals may think that if doctors are endorsing a prescription than it must be safe to use; however, the dosage and diagnosis of the prescribed medication is pertinent (Compton and Volkow 2006). Another difference between illicit drug abusers and prescription drug abusers is how these drugs are obtained. Illicit drugs are usually obtained from individuals selling drugs on the street. To obtain prescription drugs legally individuals must have a doctor's prescription. However, individuals can obtain prescription drugs through the internet by using their credit card (Compton and Volkow 2006). Individuals may illegally forge prescriptions or see multiple doctors who are known for prescribing medications without screening or thorough examinations (Manchikanti 2007). These methods allow individuals to take prescription drugs without a doctor's supervision. Another way that individuals can purchase prescription drugs is on the streets, illicitly, through "drug dealers".

Motivations for abusing can differ between prescription drugs users and illicit drug users. Motivations for prescription drug abuse are primarily the same motivations as prescribed users (e.g., diagnostic indications) (Boyd et al. 2006), taking pain relievers to relieve pain, stimulants to stay awake and alert, sedatives to relax, and sleeping medication to sleep (Boyd et al. 2006). The majority of prescription drug abusers tend to state their primary motivation for abusing prescription drugs is self-treatment of their symptoms; however, prescription drug abusers and illicit drug abusers also share some common motivations in regards to recreational use. Both types of abusers can be

motivated by the need to experiment or the need to receive some sort of high (Boyd et al. 2006).

One type of prescription drug that is frequently abused by adolescents is stimulants. Between 5% and 8% of American children are being diagnosed with ADHD (Subcommittee on Attention-Deficit/Hyperactivity Disorder, Committee on Quality Improvement 2001). As greater numbers of children are being diagnosed with ADHD, physicians are prescribing medicines in an attempt to suppress ADHD symptoms (e.g., Ritalin®, Adderall®, Concerta®), such as disruptive behaviors, hyperactivity, and impulsivity (Spencer, Biederman, Wilens, Harding, O'Donnell, and Griffin 1996). Additionally, these medicines attempt to capitalize on functions such as high academic performance and improving interpersonal skills (Spencer et al. 1996). However, increasing medical prescription use will result in higher levels of prescription stimulant abuse (Poulin 2001; Boyd et al. 2006). Akers social learning theory (1985) can explain why prescription stimulant abuse is growing. Individuals who take prescription stimulants often times have negative behaviors suppressed (disruptive behaviors, hyperactivity, impulsivity) and have positive results such as behavioral improvements and improved academic performances. Since individuals are often times positively rewarded for the results that accompany prescription stimulants abuse, there is no surprise that this drug is often abused.

Problems arise when adolescents take these medicines non-medically and abuse prescription stimulants. In 2001, 14.7% of students reported giving some of their ADHD medicine away, 7.3% of students sold some of their ADHD medication, and 4.3% of students reported having their medication stolen (Poulin 2001). Adolescents who are prescribed ADHD medications will have their medicine stolen, give it away, or sell it

without knowledge that it is a crime. A possible reason for children feeling the need to take prescription stimulants is because they observe their peers taking these medications and receiving positive reinforcement for their behavior and accomplishments (Akers et al. 1979; Akers 1985). Though transferring prescription medications is a crime, so too is taking someone else's prescription medication. In 2005, 20% of children in the United States over the age of 12 had abused prescription stimulants (SAMHSA 2006). The abuse of prescription stimulants increased by 14.5% since 2000 (SAMHSA 2002). These abusers can also be adolescents for whom the prescription was written. Individuals who are prescribed ADHD medications may stockpile medications and consume it in higher doses than prescribed when under academic stress (White et al. 2006).

Most students claim to abuse prescription stimulants primarily for academic reasons (Judson and Langdon 2009; Low and Gendaszek 2002), which can be linked back to positive reinforcement (Akers 1985). Children, especially in two parent families, are constantly expected to live up to parent's expectations (Bianchi and Robinson 1997; Lareau 2003). This may lead children to turn to prescription stimulants as a means to achieve better grades, leading to positive reinforcement. College students claim stimulants improve their concentration and increases alertness for studying (Arria and Wish 2005). Students abusing prescription stimulants do so because they need to catch up on their studies as they also miss class more frequently than students who are not abusing prescription stimulants (Arria, O'Grady, Caldeira, Vincent, and Wish 2008; Teter et al. 2005).

Positive reinforcement can also be used to explain other motivations for prescription stimulant use. In addition higher academic performance, students also report using stimulants to stay awake longer so they can party and drink alcohol for a longer

duration (Hall, Irwin, Bowman, Frankenberger, and Jewett 2005; Prudhomme-White, Becker-Blease, and Grace-Bishop 2006; Teter et al. 2003), taking stimulants as a means to suppress their appetite (Rabbani and Alexander 2009), and taking prescription stimulants to improve an individual's behavior (Spencer et al. 1996). At social events, adolescents may feel the need to stay awake longer and consume more alcohol so they can receive positive reinforcement from their peers (Akers and Lee 1996). Children will often receive positive responses from their parents if they see improved behavior, since prescription stimulant suppress hyperactivity, disruptive behaviors, and impulsivity (Spencer et al. 1996). Finally, girls in particular will receive positive reinforcement from several groups of individuals including parents, peers, and society if they fulfill the stereotypical image that the media has set throughout society (Chen and Escarce 2006, 2008; Rabbani and Alexander 2009). Prescription stimulants act as an appetite suppressant which can aid in controlling cravings while dieting (Rabbani and Alexander 2009).

Since prescription stimulant abuse is a relatively new trend, little is known about the possible long term effects these drugs can have. Even though researchers have made some progress toward the possible consequences these drugs can have, most adolescents are still unaware. Prescription stimulants have addictive properties and can have long term effects on an individual's cardiovascular, endocrine, digestive, and neurological systems (Guevara, Lozano, Wickizer, Mell, and Gephart 2002; Timimi et al. 2004). Compton and Volkow (2006) make claims that abusing prescription stimulants result in neurobiological changes leading to behavioral changes. Additionally, individuals who abuse prescription drugs are more likely to abuse other substances such as alcohol, cigarettes, and marijuana (Poulin 2001; Boyd et al. 2006; McCabe et al. 2007).

An individual's family structure has significant effects on their likelihood of stimulants abuse. In contrast to previous research stating that drug use is higher in single parent families, prescription stimulant abuse is found to be higher in two parent families (Rabbani and Alexander 2009). A possible reason for this finding is that two parent families have more social capital, which is required, to purchase prescription drugs. Social networks allow parents to gain successful occupations, which lead to higher incomes than single parent families (Chen and Escarce 2006). Similar to trends of individuals from the upper or middle classes abusing powder cocaine compared to individuals from the lower class abusing crack cocaine (Bachman, Johnston, O'Malley 1990; National Institute of Justice and Office of National Drug Control Policy 1997), prescription drug abusers will have higher incomes (Rabbani and Alexander 2009). Two parent households have more financial resources to get their children diagnosed with ADHD (Chen and Escarce 2006, 2008). Also, these families will have a greater likelihood of being able to afford prescriptions, making stimulants available to other family members who do not need them and will potentially abuse them.

Two parent families have larger social networks and more financial resources, but to garner those resources and build those networks they must spend a lot of their time at the workplace. Children may use drugs, such as prescription stimulants, to compensate for minimal parental availability (Urban Institute 2001). Being diagnosed with ADHD is expensive; many tests are required and prescriptions are expensive. Two parent families also may have better access to healthcare and insurance to cover prescriptions (Kronick, Goodman, Wennberg, and Wagner 1993; Olfson et al. 2002). In households where these prescription medications are available and easily accessible individuals have a higher probability of misusing these pills (Rabbani and Alexander 2009).

Family size is also correlated with stimulant abuse. Children who grow up in larger families have a greater chance of abusing prescription stimulants (Rabbani and Alexander 2009). The increased number of children in the household can result in a higher probability of these prescription stimulants being in the household. Furthermore, these prescription stimulants can be kept in a non-secure place where individuals can easily come by and take without anyone noticing.

In this study, I will be examining how an individual's family structure will affect the likelihood that they will abuse prescription stimulants. Children raised in single parent households (with less social capital) will be less likely to abuse prescription stimulants than children raised in two parent households (who have more social capital). While doing these analyses I will examine the specific population of children abusing prescription stimulants. I expect that white males will be the primary gender and race abusing prescription stimulants. Also, these adolescents will be older, have smaller household size, and will abuse other substances. These adolescents will come from a family with high levels of income and their parents will be actively involved in their lives. This specific population was chosen because I believe they will have the highest levels of social capital compared to females, other races, younger adolescents, low income families with larger households, and low levels of parental involvement.

CHAPTER III

METHODOLOGY AND RESULTS

Chapter III outlines the methodology for examining the relationship between family structure and children's stimulant abuse. First, the data used for the analysis is described. Then, variables used for the study are described. Finally, I provide an outline describing the statistical analysis used in this study.

Source of data

The data I propose to use is from the 2008 National Survey of Drug Use and Health (NSDUH). This survey is the 28th in a series designed to measure the prevalence and correlates of drug use in the United States. Since 1990, the survey has been conducted annually. Prior to 1990, these surveys were conducted in 1979, 1982, 1985, and 1988. NSDUH is sponsored by the Office of Applied Studies (OAS) within Substance Abuse and Mental Health Services Administration (SAMHSA). Research is conducted by RTI International in Research Triangle Park, North Carolina. NSDUH uses a combination of computer-assisted, personal interviewing (CAPI) conducted by an interviewer, and audio computer-assisted self-interviewing (ACASI). A \$30 incentive was given to the respondents for completing the 2008 NSDUH survey. Survey questions were designed to gather information of the respondent's use of tobacco, alcohol, marijuana, cocaine, crack cocaine, heroin, hallucinogens, inhalants, pain relievers, tranquilizers, stimulants, and sedatives. Additionally, the respondents were asked questions that pertained to their general demographic characteristics. This survey

consisted of 68,736 non-institutionalized civilian respondents across the United States. Respondents were at least 12 years of age at the time of the survey, and the survey also included individuals living on military bases. For privacy reasons, only 55,739 cases are available for public use. Survey responses and the respondents' identity were kept separate. This survey was designed to give the respondent privacy, especially during the sections where questions were sensitive in nature. Interviewers often had little idea what information the respondents were entering. This survey used a 50-State design, with independent stratified, multistage, area probability samples selected from each state to yield nationally representative findings. NSDUH is the only study that annually produces estimates of drug use among civilian members of the non-institutionalized population in the United States. That makes this survey suitable for estimating drug prevalence. This brings attention to drug use that otherwise would not come to the awareness of administrative, medical, or correctional authorities and therefore, would not be included in official statistics.

This research examines a particular population of respondents, so all 55,739 cases will not be needed. Specifically, I will be examining 16,981 cases which respondents are under 18 years of age. I examined only the respondents under the age of 18 because these respondents could answer specific questions about their family structure that was vital to this research.

Variables

The dependent variable for this research is non-medical stimulant abuse. Respondents to the NSDUH were asked "Have you ever, even once, used any type of prescription stimulant that was not prescribed for you or that you took only for the

experience or feeling that it caused?” Most respondents answered the question with either a yes or no; respondents who chose not to answer the question had their responses coded as system missing. Table 3.1 presents the distribution of responses on prescription stimulant abuse. The majority of respondents claim to have never abused prescription stimulants.

Table 3.1 Distribution of Responses from Prescription Stimulant Abuse

Abused Prescription Stimulants	N	(%)
Yes	417	2.5
Never	16564	97.5
Total	16981	-

Note: All respondents are under the age of 18

Two survey questions were used in this research to determine the respondents’ family structure. The first question was “Is your mother present in the household?” The data was then coded as mother not present in household (0) or mother present in (1). The next question determined whether the respondents’ father was present in the household. The respondent’s answers were coded accordingly to how they responded to the question “Is your father present in the household?” If the father was present, they were coded 1, and if the father was not present they were coded 0.

A new variable was created to determine how many parents were present in the household. This variable was coded as no parents in the household (0) or as the corresponding number of parents (1 or 2) who were in the household. The resulting variable was recoded to indicate whether the household was a single parent household (0-other household structure, 1-single parent household). Individuals who reported having no parents in the household were taken out of this analysis because these individuals were

assumed to be no longer living with their parents. Since family structure is a key variable of interest, analysis only included those with parents in the household.

Another independent variable used for this study concerns how many individuals were living in the household. Respondents were asked “The total number of individuals living in the household?” The data was then coded as 1-two people in household, 2-three people in household, 3-four people in household, 4-five people in household, and 5-six or more people living in the household. Households that consisted of only one individual were taken out because they are such a small population and are going to be quite different from the population of interest, as noted above.

The independent variable that was used as a proxy for social capital was parental involvement. The way parental involvement was measured is respondents were asked “How often did your parents check your homework in the past year?” The data was dichotomized and coded as 0-Never\Seldom and 1-Always\Sometimes.

Another proxy for social capital was the total income of the respondents’ household. Respondents were asked to answer which income range their household fell under. The data was originally coded in four income ranges: less than \$20,000, between \$20,000 and \$49,999, between \$50,000 and \$74,999, or \$75,000 or above. The data was then recoded into two separate dummy variables. The first dummy variable was created to examine the poor or lower class. I recoded this variable by keeping individuals from the lowest income range separate from all other ranges. It was coded as 0-not poor and 1-poor. The other dummy variable was created to examine the upper class. This variable was created by combining all other income ranges except the highest income range. The variable was coded as 0-not rich and 1-rich. Putting both variables into the analysis makes middle class (\$20,000-\$74,999) the reference category.

Table 3.2 displays the descriptive statistics for the respondent's household structure. Overall, the analytic sample consists of 70.6% of respondents who have both parents present in the household and 4,996 (29.4%) respondents who report living in a single parent household. The data illustrates that 95.5% of respondents answered that their mother is present in the household compared to 75% of respondents that claimed that their father was present in the household, meaning that more single parent households are composed of single mothers compared to single fathers. Also, the data shows that most families have multiple individuals living within the household. The majority of respondents report between three and five individuals living in the household. Most respondents report their parents are actively involved in their lives. Finally, there are 2,508 respondents who report a lower class status and 5,643 respondents who report income that places them in the upper class.

Table 3.2 Distribution of Respondent's Family Structure

	N	%
Mothers in the Household		
Mother not Present in HH	757	4.5
Mother Present in HH	16224	95.5
Fathers in the Household		
Father not Present in HH	4239	25.0
Father Present in HH	12742	75.0
Parents in Household		
1 Parent	4996	29.4
2 Parents	11985	70.6
Single Parent Households		
Other HH	11985	70.6
Single Parent HH	4996	29.4
Total Household Size		
2 People in HH	1015	6.0
3 People in HH	3662	21.6
4 People in HH	5951	35.0
5 People in HH	3719	21.9
6 or More People in HH	2634	15.5
Parental Involvement		
Never\Seldom	4352	25.6
Always\Sometimes	12629	74.4
Lower Class		
Not Poor	14473	85.2
Poor	2508	14.8
Upper Class		
Not Rich	11338	66.8
Rich	5643	33.2

Note: Each variable N=16,981 and all respondents are under the age of 18

The analysis also included control variables to capture the basic demographic profile for each respondent. In this analysis there were seven control variables that consisted of the respondents' age, race, gender, alcohol consumption, and illicit drug use.

Age is measured in terms of years. This project focuses on adolescents so the analytic sample includes respondents whose ages ranged from 12 to 17 years of age. This

population of respondents was used because most of them were still living with their parents and could answer questions concerning their household structure.

The next control variable was the respondents' race. The 2008 NSDUH coded race into seven different categories. The respondent's answers were coded as 1-non-Hispanic white, 2-non-Hispanic black\African American, 3-non-Hispanic Native American\Alaskan native, 4-non-Hispanic native Hawaiian\other Pacific Islander, 5-non-Hispanic Asian, 6-non-Hispanic more than one race, and 7-Hispanic. Race was then recoded into a dummy variable, coded as 0-all other races and 1-non-Hispanic white.

The respondent's gender was originally coded as 1-male and 2-female. This variable was recoded as a dummy variable, 0-female and 1-male so that females could be used as a reference group.

Next, I used a variable that controlled for respondents' illicit drug use since studies have linked illicit drug abuse to stimulant abuse (Boyd et al. 2006; Manchikanti 2007; McCabe et al. 2007). The 2008 NSDUH included data reporting if respondents had ever, even once, abused eight specific types of drugs (marijuana/hashish, any form of cocaine, hallucinogens, heroin, inhalants, prescription pain relievers, prescription sedatives, and prescription tranquilizers). Most respondents answered either yes or no to each of these questions. If the respondents chose not to answer this question, the data was coded as system missing. The data was then recoded so that these eight measures were combined into one variable that indicated whether the respondents had ever abused any illicit drugs (0-have never used or 1-have used).

Respondents' alcohol use was another control variable examined since it was also linked to prescription abuse (Chen and Escarce 2006). Respondents were asked if they

had ever consumed alcohol. Respondents answered this question with a yes or a no. Respondents who chose not to answer this question were coded as system missing.

Table 3.3 presents the descriptive statistics for control variables. The data illustrate that respondents are spread fairly equally across age categories and that the analytic sample is equally male and female. Sixteen year old respondents, the largest group, have 18.1% of respondents. There are slightly more male respondents (51.1%) than female respondents (48.9%). Most respondents are non-Hispanic whites (59.9%) compared to respondents who report another race (40.1%). Most respondents claim never to have abused illicit drugs or consumed alcohol.

Table 3.3 Distribution of Respondent’s Demographics

	N	(%)
Age		
Age 12	2541	15.0
Age 13	2724	16.0
Age 14	2819	16.6
Age 15	2974	17.5
Age 16	3066	18.1
Age 17	2857	16.8
Race		
All Other Races	6817	40.1
Non-Hispanic White	10164	59.9
Gender		
Female	8297	48.9
Male	8684	51.1
Illicit Drug Abuse		
Have Never Used	12522	73.7
Have Used	4459	26.3
Alcohol Use		
Have Not Used	10355	61.0
Have Used	6626	39.0

Note: Each variable N=16,981 and all respondents are under the age of 18

Statistical Analysis

The goal of this research is to determine if family structure has an effect on an individual's likelihood of abusing prescription stimulants, but I also examine which parts of the population are most likely abusing prescription stimulants.

The variables I use for my research come from questions the respondents answered about their family's structure, personal general stimulant abuse, personal alcohol use, personal illicit drug abuse, and their basic demographics as described above. After presenting descriptive statistics, including means and standard deviations, I present bivariate means comparisons tests. Comparing the means, my independent variables by prescription stimulant abuse allow me to investigate whether there are significant relationships with prescription stimulant abuse. Next, I present bivariate correlations. Correlation tests investigate the strength of relationships between variables. Finally, I use a logistic regression to estimate the connection between each covariate and prescription stimulant abuse. A logistic regression is appropriate because the dependent variable is dichotomous. This regression analysis allows me to determine if family structure has an effect on the likelihood children will abuse prescription stimulants. The model predicting prescription stimulant abuse includes household structure as an independent variable, with controls for respondent's age, race, gender, parental involvement, income classification of a household, alcohol consumption, illicit drug abuse, and total number of individuals living in the household.

Results

Table 3.4 presents the means for the independent variables according to whether the respondent has ever abused prescription drugs. There were a total of 16,981 respondents from the 2008 NSDUH survey used in the analytic sample. Out of the total

16,981 respondents, 417 respondents claim to have abused prescription stimulants. Almost all of the independent variables were significantly different depending on whether the respondent had abused prescription stimulants; upper class status and having a mother in the home were the only two variables not significantly related to prescription stimulant abuse.

The majority of the independent variables that look at the respondent's family structure are significantly related to prescription stimulant abuse. Father in household ($p=.00$), number of parents in household ($p=.00$), single parent family structure ($p=.00$), and number of individuals living in the household ($p=.00$) are all significantly related to prescription stimulant abuse. 68% of abusers reported having their father present in the household while 75% of non-abusers reported their father present in the household. Respondents who reported abusing stimulants (36%) are more likely to come from single parent families than those who report not abusing prescription stimulants (29%). These respondents also report to having more individuals living in their household; abusers report an average of 2.99 people living in the household while non-abusers have an average of 3.20 people living in the household. Respondents who reported abusing prescription stimulants were slightly less likely to report their mother in the home (95%) than non-abusers (96%). Results show that respondents who abuse prescription stimulants are more likely to come from single parent families, with fewer individuals in the household.

Parental involvement, a proxy measure for social capital, is related to prescription stimulant abuse ($p=.00$). In fact, 75% of non-abusers report parental involvement but only 59% of abusers report the same. The two variables used to represent respondent's families' class (upper class, lower class), were also proxies used to represent social

capital. Lower class was significantly related to prescription stimulant abuse, but upper class was not significant. Respondents from lower class families were slightly more likely to report abusing prescription stimulants (18%) than respondents who are not from lower class families (15%), but respondents from upper class families were no more likely to report abusing prescription stimulants than not abusing (33%). Results indicate that respondents with lower levels of social capital are more likely to report prescription stimulant abuse.

Most of the independent variables that addressed the respondent's demographics were also related to prescription stimulant abuse. The majority of abusers (70%) and non-abusers (60%) were non-Hispanic white. 41% of abusers reported being male compared to 51% of non-abusers. The average age of respondents who abused prescription stimulants was 15.48 while the average age of non-abusers was 14.56. Results indicate that most abusers are non-Hispanic white, female, and older adolescents.

Finally, both independent variables that examine other types of substance abuse are related to prescription stimulant abuse (Alcohol use, ever abused any illicit drugs). Of those who have abused prescription stimulants, 90% have consumed alcohol and 92% have abused other illicit drugs; however, of those who report not abusing prescription stimulants only 38% have consumed alcohol and only 25% have abused other illicit drugs. These results indicate that prescription stimulant abusers also abuse other substances. Additionally, stimulant frequency was examined. Most respondents reported a low frequency of prescription stimulant abuse and those who reported ever abusing prescription stimulants have not done so within the past year.

Table 3.4 Means for Independent Variables by Whether the Respondents Have Ever Abused Prescription Stimulants NSDUH 2008

Variables	Have Not Abused (N=16,564)	Have Abused (N=417)	Total (N=16981)	Significance	
Mother in Home	.96	.95	.96	.92	
Father in Home	.75	.68	.75	.00	**
Number of Parents	1.71	1.64	1.71	.00	**
Single Parent Family Structure	.29	.36	.29	.00	**
Gender (0-female, 1-male)	.51	.41	.51	.00	**
Race (0-all other races, 1-white)	.60	.70	.60	.00	**
Parental Involvement (0-not involved, 1- involved)	.75	.59	.74	.00	**
Lower Class (0-not poor, 1-poor)	.15	.18	.15	.03	*
Upper Class (0-not rich, 1-rich)	.33	.33	.33	.95	
Age	14.56	15.48	14.58	.00	**
Ever used Alcohol	.38	.90	.39	.00	**
Ever Abused Any Illicit Drug	.25	.92	.26	.00	**
Number of People Living in a HH	3.20	2.99	3.19	.00	**
** sig <0.01			* sig <0.05		

Table 3.5 describes the correlations between respondent's demographics, previous substance abuse, and family characteristics. Whether a respondent had ever abused stimulants had significant correlations with almost all other variables in this model. Only two variables (mother in home, upper class) did not have a significant correlation with ever abused stimulants.

The weakest association that the dependent variable (ever abused stimulants) had were with the upper class and the strongest association was with ever abused any illicit drugs. Ever abused stimulants is negatively correlated with mother in the home (-.001, not significant) and father in home (-.025, $p < .01$), meaning that individuals are less likely

to abuse stimulants when their mothers and fathers are present in the household. Respondents abusing prescription stimulants are also negatively correlated with the number of individuals living in the household (-.028, $p < .01$), parental involvement (-.058, $p < .01$), gender (-.033, $p < .01$), and upper class (-.000, not significant). Respondents are less likely to abuse prescription stimulants if they are male, from wealthier families, their parents are involved in their lives, and have multiple individuals living in the household. My dependent variable (ever abuse stimulants) had positive correlations with single parent family structure (.024, $p < .01$), race (.032, $p < .01$), age (.085, $p < .01$), lower class (.017, $p < .05$), ever abused any illicit drugs (.237, $p < .01$), and ever used alcohol (.166, $p < .01$). This means that respondents were more likely to abuse prescription stimulants the older they are, if they are from a single parent household, non-Hispanic white, come from families classified as poor, consume alcohol, and abuse other illicit drugs.

The results are as expected: Individuals are more likely to abuse prescription stimulants if they have fewer individuals living in the household, are white, are older adolescents, and abuse other substances. However, some of the results were unexpected. Analysis shows that individuals are more likely to abuse prescription stimulants if they are female, come from a single parent household, have parents who are not involved in their lives, and are poor. This table shows that individuals with lower levels of social capital are more likely to abuse prescription stimulants.

Table 3.5 Correlation Matrix for Variables of Interest NSDUH 2008

	A	B	C	D	E	F	G	H	I	J	K	L
A. Ever Abused Stimulants												
B. Mother in Home	.001											
C. Father in Home	.025**	.125**										
D. Single Parent Family Structure	.024**	.335**	.893**									
E. Number of People Living in a HH	.028**	.181**	.300**	.367**								
F. Parental Involvement	.058**	.015	.036**	.041**	.010							
G. Race (0-all other races, 1-white)	.032**	.026**	.186**	.165**	.096**	.053**						
H. Gender (0-female, 1-male)	.033**	.023**	.022**	.010	.010	.067**	.027**					
I. Age	.085**	.001	.032**	.030**	.092**	.135**	.013	.001				
J. Lower Class (0-not poor, 1-poor)	.017*	.029**	.313**	.310**	.055**	.042**	.234**	.007	.017*			
K. Upper Class (0-not rich, 1-rich)	.000	.054**	.277**	.288**	.044**	.050**	.250**	.012	.014	.294**		
L. Ever Abused Any Illicit Drugs	.237**	.020**	.075**	.080**	.061**	.142**	.021**	.006	.245**	.032**	.035*	
M. Ever Used Alcohol	.166**	.024**	.060**	.068**	.086**	.153**	.030**	.015	.394**	.005	.007	.481**
* Correlation is Significant at the 0.05 Level (2-tail) ** Correlation is Significant at the 0.01 Level (2-tail)												

A logistic regression was used to evaluate whether the predictors of prescription stimulant abuse were significant in multivariate models. A logistic regression was used because the dependent variable is dichotomous. Three separate models were run; results are displayed in Table 3.6

The first regression (Model 1) is used as a base for the rest of the models and includes some basic demographics along with a few family characteristics. In this model, there were three significant predictors of prescription stimulant abuse at the .01 level (gender, race, age,) and one significant predictor at the .05 level (single parent family structure). Results illustrate that males were 35% less likely than females to abuse

prescription stimulants. Non-Hispanic whites were 72% more likely than all other races to abuse prescription stimulants. Children who are raised in a single parent family household are 30% more likely to report prescription stimulant abuse compared to children raised by two parents. Additionally, for every year older the adolescents got they were 42% more likely to report stimulant abuse.

In model 2, the three variables representing social capital were added to the base model. All of the previous significant predictors remained significant, both parental involvement and lower class were significant predictors as well, but upper class was not. Males were still 33% less likely to report prescription stimulant abuse compared to females and non-Hispanic whites were still 73% more likely to abuse prescription stimulants compared to all other races. Every increased year in age, results in a 39% greater likelihood of reporting prescription stimulant abuse. The three variables used as proxies for social capital, respondent's families' income classification (upper class, lower class) and parental involvement had interesting results. Respondents who reported their parents were involved in their lives were 43% less likely than respondents reporting their parents were not involved to abuse prescription stimulants. Respondents whose families are classified as being in the lower class are 41% more likely to abuse prescription stimulants than those from other income classes. In summary, the existing relationships did not change dramatically when upper class, lower class, and parental involvement were added to the model, but parental involvement and lower class were also important factors in prescription drug abuse.

The final model (model 3) introduces variables examining previous substance abuse of the respondents. Abuse of any illicit drug ($B=18.9$, $p<0.01$) and alcohol use ($B=3.41$, $p<0.01$) are important predictors of prescription stimulant abuse. With the

introduction of respondent's previous substance abuse variables into the model, many other predictors lost their significance. Age, single parent households, and parental involvement lost their significance while gender, race, and individuals who classify themselves as lower class all remained significant predictors of prescription stimulant abuse. Illicit drug abusers were more than 18 times more likely to report abusing prescription stimulants compared to those who reported no illicit drug abuse. Individuals who have consumed alcohol were more than three times more likely to report abusing prescription stimulants compared to teetotalers. Non-Hispanic whites were 63% more likely to report prescription stimulant abuse compared to other races. Individuals who classify themselves as lower class were 34% more likely to report prescription stimulant abuse than others, controlling for everything else. Consistent with the previous models, males remain 33% less likely to report prescription stimulant abuse compared to females.

Overall, in determining whether or not family structure affects an individual's likelihood of abusing prescription stimulants, results show that family structure is linked to prescription stimulant abuse. However, family structure does not have the hypothesized effect. Single parent families are found to have children who are more likely to abuse prescription stimulants compared to two parent families. Also, results indicate that individuals with lower levels of social capital are more likely to abuse prescription stimulants than individuals with higher levels of social capital.

Table 3.6 Logistic Regression Predicting Likelihood of Prescription Stimulant Abuse
NSDUH 2008

Variables	Model 1 (N=417)	Model 2 (N=417)	Model 3 (N=417)
Gender (0-female, 1-male)	0.65**	0.67**	0.66**
Race (0-all other races, 1-white)	1.72**	1.73**	1.63**
Age	1.42**	1.39**	1
Number of People Living in a HH	0.96	0.95	0.99
Single Parent Family Structure	1.30*	1.28*	1.07
Lower Class (0-not poor, 1-poor)	-	1.41**	1.34*
Upper Class (0-not rich, 1-rich)	-	1.04	1.11
Parental Involvement (0-not involved, 1-involved)	-	0.57**	0.84
Ever used Alcohol	-	-	3.41**
Ever Abused Any Illicit Drug	-	-	18.9**
Model Chi Square	184.35**	213.01**	964.73**
Model -2 log Likelihood	3730.76 ^a	3702.1 ^a	2950.39 ^b

*p<0.05

**p<0.01

^a estimate terminated at iteration number 7 because parameter estimates change by less than .001

^b estimate terminated at iteration number 9 because parameter estimates change by less than .001

CHAPTER IV

DISCUSSION AND CONCLUSIONS

Discussion

The primary goal of this study was determining how an adolescent's family structure can affect their likelihood of abusing prescription stimulants using a social capital perspective. This theory was used to argue that children from two parent families had more opportunities to accumulate social capital, which was needed to get prescription stimulants. A secondary goal was providing descriptive data regarding prescription stimulant abuse among adolescents. Reaching these two goals was an attempt to expand and build upon previous research concerning adolescent abuse of prescription stimulants. To examine these research areas, this study used data from the 2008 NSDUH survey, examining variables that addressed respondent's family characteristics, drug abuse history, alcohol use, levels of social capital, and demographics. This analysis uses bivariate means comparisons tests, correlations tests, and logistic regressions, allowing both bivariate and multivariate examinations of associations that could exist between the independent variables and prescription stimulant abuse. In this study, prescription stimulant abuse is found to be similar to other types of illicit drug abuse.

In most analyses, family structure is significantly related to prescription stimulant abuse. The central hypothesis was that children raised in two parent families would have a greater likelihood of abusing prescription stimulants because these adolescents have higher levels of social capital making prescription stimulants more accessible. However,

contrary to the hypothesis, children in single parent families are found to be more likely to abuse prescription stimulants. Also contrary to my hypothesis, children with lower levels of social capital are more likely to abuse prescription stimulants than children with higher levels of social capital. Results indicate that adolescents whose parents are not actively involved in their lives and come from lower class families are more likely to abuse prescription stimulants. Prescription stimulant abusers are found to share similar family characteristics and levels of social capital with other illicit drug abusers as was found in other studies (McLanahan and Sandefur 1994; Lareau 2003; Hollist and McBroom 2006; Oman et al. 2007). These findings could be associated with long periods of time with minimal adult supervision, which for children in single parent families is when drug abuse is most likely to occur (Han, Miller, and Waldfogel 2010). Also, children raised by single parents might not have close bonds with their parents, friends, communities, or schools (Coleman 1988, 1990; Lareau 2003; Ford 2009), therefore making these adolescents more likely to participate in deviant behaviors because they have less regard of jeopardizing those relationships (e.g., prescription stimulant abuse). The possible explanation of individuals not having strong ties to society, making them more likely to commit crimes can be reinforced using social control theory proposed by Travis Hirschi (1969).

Secondary hypotheses examined the characteristics of the prescription stimulant abusers in this survey population. As stated above, adolescents who are more likely to abuse prescription stimulants were hypothesized to be white males whose family was classified as upper class. These adolescents are more likely to abuse prescription stimulants the older they become, will come from households with fewer individuals, and will abuse other substances. I hypothesized these adolescents to be prescription stimulant

abusers because I thought they would also have the highest levels of social capital. Results indicate that some of my hypotheses were correct, but others were not. Older adolescents, who are white, have fewer individuals in their household, and who abuse other substances was found to be more likely to abuse prescription stimulants. These findings are found to be consistent with previous research (Chen and Escarce 2006, 2008; McCabe et al. 2007; Rabbani and Alexander 2009).

However, females are more likely to abuse prescription stimulants compared to males and prescription stimulant abusers are more likely to come from families who classify themselves as lower class. In fact, upper class status was not a significant factor in most of the analyses. While I anticipated that prescription stimulant abuse would follow similar trends seen with cocaine abuse among the wealthy (in contrast with crack abuse among the poor). Results show that prescription stimulant abusers share certain characteristics with illicit drug abusers, such as individuals who classify themselves as being poor are more likely to abuse. The lack of relationship between poverty and prescription stimulant abuse might be a result of low rates of health insurance, which can hinder legal access to prescription stimulants, leaving individuals to seek illegal means of obtaining these drugs. Briefly exploring some descriptive data on health insurance using a cross-tabulation between respondent's age and whether or not the respondent has health insurance of any kind shows that the majority of adolescents do not have health insurance. Since the importance of health insurance cannot be studied using this data, future research should take insurance status into account.

The relationship between gender and prescription stimulant abuse is inconsistent. In this study, I found that females are more likely to report prescription stimulant abuse compared to males which is consistent with previous findings (Herman-Stahl, Krebs,

Kroutil, and Heller 2007; Ford and Schroeder 2009). Researchers have not come to an agreement on whether males or females are more likely to abuse prescription stimulants (Low and Gendaszek 2002; Hall et al. 2005; Teter et al. 2005). There is evidence that young women might abuse prescription stimulants to suppress their appetite (Herman-Stahl et al. 2007) or for academic reasons because females are more concerned about their grades (Vickers, Patten, Bronars, Lane, Stevens, Croghan, Schroeder, and Clark 2004). These explanations cannot be addressed with this data, but future research should focus on possible motivations for prescription stimulant abuse.

Limitations

The current study has a number of important limitations that need to be discussed. This study uses data from the 2008 NSDUH that surveys individuals and includes only self-reports of illicit drug use, which raises questions concerning the validity of the responses. Respondents could easily lie about their history of substance abuse or simply be unable to recall past drug experiences (Fendrich and Xu 1994; Feucht, Stephens, and Walker 1994; Ehrman, Robbins, and Cornish 1997). Also, the accuracy of adolescents' ability to classify their parents' income range can be an issue. A limitation of any secondary analysis of survey data is that survey measures might not be optimal in addressing specific issues. The 2008 NSDUH did not include measures to account for respondents previously being prescribed these drugs or how they were acquired. In addition, limitations exist with adolescent's health insurance status and a household's income classification. Inaccurate income measures may have led these results to find little effect of income on prescription stimulant abuse. This lack of data meant it was not possible to find out how adolescents got their prescription stimulants.

The variable used to measure prescription stimulant abuse is another limitation. The initial argument for this study was based on individuals with higher levels of social capital being more likely to have legitimate access to these drugs. However, the variable used for this study examines the illegitimate use of prescription stimulants. A more accurate measure should be used.

Another limitation was in the measure for social capital. The set of data used had limited variables that could be applied to examine social capital. Specifically, this data did not have any variables that could examine the quality and quantity of children or their parent's social relationships. This is an important limitation since so many researchers defined social capital by an individual's social network (Putnam 1995, 2000; Lareau 2003; Stone, Grey, and Hughes 2003). This analysis uses parental involvement as a proxy for social capital, specifically measuring how many times in the past year did parents check children's homework. Parental involvement was used as a proxy for social capital because children receive their first forms of social capital from their parents and how involved they are in their child's lives regulates their social capital (Coleman 1988, 1990). Measuring parental involvement by how often they check children's homework may not be the most accurate measure. Such a limited measure of social capital might have hindered the research question. More accurate and complex measures of social capital should be used when further investigating this theory, such as a combination of parent's income, education, social networks, and involvement with their children.

The NSDUH defines non-medical prescription drug use as having ever—even once—used any type of prescription drug that was not prescribed or used just for the feeling or experience it caused. This poses another limitation in that there are not any valid and reliable definitions distinguishing between non-medical use, abuse, and misuse.

Unreliable or invalid definitions, such as how NSDUH defines non-medical prescription drug use, can exclude individuals who have legitimate prescriptions for medication but take incorrect dosages.

A final limitation concerns the limited research available on prescription stimulant abuse. This area of research is developing and still has a great distance to go in terms of finding clear answers. Research is inconsistent concerning the demographics of typical abusers, whether prescription stimulant abuse is unique from other types of illicit drug abuse, and what the long term consequences of prescription stimulant abuse are. There is also a shortage of theories to explain correlates of prescription stimulant abuse.

Despite these limitations, the current study provides information that prescription drug abuse is not as unique as previously thought and is similar to other types of illicit drug abuse. Results show that prescription stimulant abuse is related to other types of drug abuse. Medical sociologists and criminologists should continue to research this recent trend so that measures can be taken to decrease this type of abuse.

Implications

There are several theoretical and social implications emerging from this study. Social capital theory was found not to have the hypothesized effect when applied to prescription stimulant abuse. Originally, it was proposed that individuals with higher levels of social capital would be more likely to report abusing prescription stimulants, making prescription stimulant abuse unique from other types of drug abuse. Results from the present study refute this hypothesis. In fact, findings show that individuals with lower levels of social capital are *more* likely to report abusing prescription stimulants. This implies that prescription stimulant abuse is similar to illicit drug abuse.

There are also social implications that emerge from the present study. Findings suggest that in general, prescription drug abuse should be addressed in greater detail in substance abuse and prevention programs. Parents and physicians need to become more aware of this emerging trend so they can closely monitor children. Findings also show that other substances are abused when abusing prescription stimulants. Individuals need to realize the potentially harmful repercussions that can occur when combining prescription drugs and other substances.

Current health care reforms could be made in an attempt to limit access to these prescriptions or closely supervise the use of them. Physicians also need to be regularly observed to ensure that prescriptions are given out correctly. Amounts of pills in a prescription, proper numbers of prescriptions written at a given time, and regular check-ups should be monitored in an effort to stop patients from stockpiling medication.

Directions of Future Research

There has been a continuing decline in substance abuse in recent years, but prescription drug abuse has been increasing rapidly (SAMHSA 2006). Further studies should be attempted to determine why this trend is occurring. Recently, prescription drug abuse has been gaining attention, but individuals are still unaware of the potential damages that can result from abusing them. Additional research is needed so that consistent findings regarding potential physical and mental damages that can occur in both the short and long terms.

Future research on prescription stimulant abuse should focus on a few areas. First, research should attempt to incorporate more theoretical bases for prescription stimulant abuse. Present research is lacking in this area, specifically when looking at correlates of

prescription stimulant abuse. Results from this analysis indicate that several correlates of prescription stimulant abuse that are shared with illicit drug abuse; however, additional research is needed in this area to verify if prescription stimulant abuse should be classified as another form of illicit drug abuse or as a unique type of drug abuse. In regards to social capital theory, more accurate measures of social capital should be applied in future studies. Researchers should incorporate a combination of parent's social networks, income, education, and an accurate variable concerning involvement with their children as a measure of adolescents' social capital before assuming this theory should not be applied to prescription drug abuse.

Future research should also attempt to clarify demographics concerning prescription drug abusers. More research is needed to accurately determine the characteristics of the abusers of this specific drug. Specifically, gender is an area where current research is conflicted. Much of the current research is contradictory on which gender is more likely to abuse prescription stimulants (Low and Gendaszek 2002; Hall et al. 2005; Teter et al. 2005; Herman-Stahl et al. 2007; Ford and Schroeder 2009). Determining specific populations of prescription stimulant abusers would allow policy makers, law enforcement, physicians, and parents to focus efforts on stopping prescription stimulant abuse, leading to a decline in prescription drug abuse rates.

Consuming alcohol and abusing other illicit drugs are strong correlates of prescription stimulant abuse. Other studies should further investigate these relationships so that more information is known about the co-occurrence of abuse. Individuals need to become more aware of potentially damaging effects this can cause to their bodies.

Finally, studies need to further examine predictors of prescription stimulant abuse, including where adolescents are gaining access to prescription stimulants and what their

motivations are for abusing them. Some researchers claim that academic achievement is a correlated with prescription stimulant abuse (Judson and Langdon 2009; Low and Gendaszek 2002), while others claim that prescription stimulant abuse is a coping mechanism for minimal parental activity (Urban Institute 2001). Research should focus on academic achievement in greater detail, as well as other possible predictors, so that more accurate assessments regarding motivations can be addressed.

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