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Marijuana Use by Juveniles: The Effects of Peers, Parents Race, & Drug Abuse Resistance Education.

Daniel J. Moeser
East Tennessee State University

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Marijuana Use by Juveniles: The Effects of Peers,

Parents, Race & Drug Abuse Resistance Education

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A thesis

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by

Daniel J. Moeser

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Dr. Larry Miller, Chair

Dr. Michael Braswell

Dr. Dennis Hamm

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ABSTRACT

Marijuana Use by Juveniles: The Effects of Peers,

Parents, Race & Drug Abuse Resistance Education

by

Daniel J. Moeser

The purpose of this study was to analyze the factors that affect the use of marijuana by juveniles

and how outside influences such as peer pressure, race, parental influence, and prevention

programs such as the Drug Abuse Resistance Education (D.A.R.E.) contribute to the use of

marijuana by juveniles. All of the variables used in this study came from the Gang Resistance

Education and Training (G.R.E.A.T.) data collected by Esbensen and Osgood (1999). The

analysis indicated that juveniles are most influenced by their peers such as friends, that African

American juveniles would be less likely than Whites and Hispanics to become regular users of

marijuana, that juveniles living with both parents would be less likely to use marijuana compared

to those with alternative living conditions, and that the programs such as the D.A.R.E. program

would have little long- term effect on marijuana usage by juveniles.

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CHAPTER 1

INTRODUCTION

There has been much interest over the past few decades in the use of marijuana by juveniles. Specifically, in the last five years there have been numerous studies and articles written on the influence of outside variables regarding juveniles who use marijuana and other illegal substances such as alcohol and hard drugs. Marijuana is the most widely used illicit drug in the United States, and in most cases it is the first illicit drug used by persons who have used an illicit drug (Hellewell, 2004).

There have been many different factors that have been analyzed in the research pertaining to marijuana use by juveniles. These factors include the race/ethnicity of juveniles, the influence of peers, the influence of parental supervision, and the affect of prevention programs such as Drug Abuse Resistance Education (D.A.R.E.). The effects of each of these variables have been documented in much of the prior research on this topic. This study deals with these commonly studied variables in an attempt to add depth and clarity to the research on the topic of marijuana use by juveniles.

A factor that is included in virtually all of the previous studies conducted to analyze marijuana use by juveniles is race/ethnicity. The research in this area has produced mostly mixed results. For this reason there has not been a definitive conclusion drawn on how race/ethnicity affects marijuana use by juveniles. One example of research in this area was a study which found that by age 15 only 7% of African American teenagers were regular smokers, on par with the low rate of 8% for Asian American youths. In contrast, about 20% of both Whites and Hispanics had become regular smokers (NewsRX, 2004).

Another variable that is often included in the literature on juvenile marijuana use deals the influence that juveniles' peers have on their use of marijuana and other drugs. Previous studies have consistently shown that the most important factor in predicting marijuana use by juveniles is peer pressure. Affiliation with drug-using peers remains one of the strongest correlates of marijuana and alcohol use by juveniles. Many studies have identified peer pressure as the primary reason for the use of marijuana by juveniles (Fanning, 2003).

There have also been a number of studies that assessed the relationship between the level of parental supervision and the use of marijuana and other drugs by juveniles. The vast majority of these studies have shown this factor to be one of the most important factors affecting whether or not a juvenile becomes involved in the use of illegal drugs such as marijuana. The research in this area typically shows that juveniles living with both parents tend to be involved less with illegal substances such as marijuana. Some studies have also shown that adolescents in step-parent families were more than twice as likely to have used drugs as those from other two parent families.

Another variable that is often included in the research pertaining to marijuana use by juveniles is the effectiveness of prevention programs aimed at preventing or reducing the level of substance use by juveniles. These programs are intended to help the children in a number of ways. The most widely recognized program of this type, and therefore the most studied and scrutinized, is the Drug Abuse Resistance and Education or D.A.R.E. program. This program is basically an education course administered to young adolescents in order to give them the ability to recognize a variety of illegal drugs and also to give them a better understanding of how these substances can affect them, their friends, and their loved ones. Many school based prevention programs such as D.A.R.E also focus on drug resistance training to better prepare students to handle peer pressure. The effectiveness of such programs is inconclusive. Evaluations of project D.A.R.E., the most

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widely used school based prevention program in the middle grades, have revealed small effects. (Jenkins, 2001).

Purpose of the Current Study

The purpose of this study is to analyze the factors that affect the use of marijuana by juveniles. Outside influences such as peer pressure, race, sex, parental influence; and, prevention programs such as the Drug Abuse Resistance Education (D.A.R.E.), will be analyzed in order to determine what relationship these factors have on the use of marijuana by juveniles. All of the variables used in this study will come from the Gang Resistance Education and Training (G.R.E.A.T.) data collected by Esbensen and Osgood (1999). The data used in this study were collected from a sample of 5,935 eighth grade students in 11 different U.S. cities. This amount of data would be impossible for a single student researcher to collect. Therefore, the use of this secondary data was chosen for this study to allow for results that could be more highly valued and for the ability to generalize the results to a much larger population.

Hypotheses

The results of this study were evaluated and compared to prior research on this topic. Specific research hypotheses for this study were as follows:

H1: Juveniles will be more likely to use marijuana as influenced by their peers such as friends and association with other juveniles.

H2: Programs such as D.A.R.E. will not reduce marijuana use by juveniles.

H3: African American juveniles are more likely than Whites and Hispanics to use marijuana during adolescence.

H4: Juveniles living with both parents are less likely to use marijuana than those in other living situations.

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H5: Male juveniles are more likely to use marijuana than female juveniles.

CHAPTER 2

REVIEW OF THE PRIOR RESEARCH

The research concerning marijuana use by juveniles is extensive. Since the 1960s there

have been an abundance of studies undertaken to examine what factors influence juveniles to use

marijuana, alcohol, and other illegal substances. This chapter provides a review of the research

pertaining to the use of marijuana by juveniles. The chapter is broken down into five different

sections of literature. The first two articles that are discussed deal with the prevalence of

substance abuse among juveniles in the United States. The second area of literature deals with the

influence exerted on juveniles by their peers. The third section of literature focuses on the effect

that parents have on their children in terms of substance abuse. The fourth area of research

discussed deals with the effects of substance abuse prevention programs, and the fifth and final

section of research focuses on the differences in substance abuse based on ethnicity.

<u>Prevalence</u>

Barrett (1986) explained the extent of drug abuse among youth. Teenage drug use in the

United States is the highest of any industrialized nations. Sixty-one percent of high school seniors

have used drugs and during the 1970s – 1980s the percentage of children using drugs by sixth

grade had tripled. Peer pressure played the largest role in causing children to begin using drug.

The report went on to say that the acceptance by peers becomes especially important when

children leave elementary schools and begin junior high. At this critical age, 'adolescents seems to

be either unwilling or unable to successfully resist peer pressure in substance abuse situations"

(Barrett, pp.1-3).

The National Center on Addiction and Substance Abuse (CASA) at Columbia University (2002) examined the age that children began to smoke cigarettes, use alcohol, and use marijuana and other illegal drugs is the youngest ever. Specifically, from 1992 to 1996, the proportion of 8th graders who said they had used marijuana during or before 7th grade rose from 7.7% to 12.7%. The average age of first marijuana use has steadily declined from 24.2 in 1963 to 16.3 in 1994. In 1996 47% of 14-year-olds said they could buy marijuana within a day. Additionally, the percentage of 9-12-year-old trying marijuana doubled, from 2% to 4%. Finally, more 9 to 12 year-olds were offered drugs in 1996 than in 1993. In 1996 these children are less likely to believe that "using drugs is dangerous" and to say they "don't want to hang around people who use drugs." The final conclusion of the report stated that how teens deal with substance use and abuse will be determined in the first instance in their home, schools, and communities, but mostly among their peers and in their extracurricular and religious activities and leisure pursuits. "The responsibility of parents, teachers, and others who influence what teens do and how they act cannot be overstated" (CASA, pp. 1-5).

<div align="center">Peer Influence</div>

A more recent study by Jenkins (2001) of 361 high school students in grades 9 through 12 examined their perceptions of drug resistance difficulties when offered beer, marijuana, and various other drugs. The range of responses suggests that drug resistance difficulty is attributed to several factors. Peer pressure was cited most frequently by nonusers, and seldom by heavy users. Responses associating drug refusal difficulty to emotional state and pleasure seeking were more characteristic of the high frequency users. Low frequency users reported reasons for resistance difficulty related to a need for peer acceptance and inclusion, desire to have fun, alcohol and drug

availability, and curiosity. In the final analysis, affiliation with drug-using peers remains the single strongest correlate of alcohol and marijuana use.

In a clinical paper, Wood (2003) sought to understand the patterns of substance abuse among school-age children. Among the factors found to contribute to substance use by children was peer pressure. The study found similar results as other studies in that the average age of first use of illegal substances is 13.1 years but use at age 9 and younger is becoming increasingly common. The paper points out that 30% of children in grades 4-6 reported they had received a lot of pressure from classmates to use alcohol and/or marijuana. Two types of peer influence were at work with students and their risk for substance use. The first is the desire to be popular and to fit in. This internalized peer pressure was found to be less of a risk factor than the external peer pressure of actually being urged or pressured by peers to act in a certain way, such as participating in substance use. The paper further concluded that while the views of the child has on using illegal substances may be initially set by the family, they are reinforced through the peer group with whom most substance abuse occurs. The teenage population uses substances much as adults do – for peer acceptance in some cases and in some cases to reduce social inhibitions for high-risk opportunities such as sexual activity. Finally, the paper found that negative peer relationship problems that children experience could also lead to substance use problems. Children who had the most problems at age 9 with peer relationships as measured by peer rejection, social isolations, and perceived social incompetence were up to almost 98% more likely to use substances at age 18 than those students with the fewest peer interaction problems.

Hussong and Hicks (2003) examined how the effect (both positive and negative) of peers (both in terms of relationship quality and substance involvement) is interactive influences on adolescent substance use. A sample of 398 high school juniors and seniors completed surveys

assessing each of these domains. The study tested whether adolescents are more likely to use substances if they have close, positive relationships with best friends who are also more involved in substance use. Results of hierarchical regression analyses showed a strong association between an adolescent's and his or her best friend's substance use. Substance use by a close or best friend is a unique, positive predictor of an adolescent's own substance use and a stronger predictor than social crowd affiliation. Best friendships are also importance as the most sought after source for support, advice, and problem solving strategies within an adolescent's social network. Finally, the study concludes the best friendships are a unique predictor of other forms of adjustment in adolescence, with those adolescents not having a close or best friend showing greater depression, aggression, and loneliness as compared to adolescents with close friends. This study demonstrated the importance of a friend's identity in terms of deviant behavior by showing that best friendships with substance-using peers predict greater adolescent substance use.

Fanning (2003) looked at peer pressure and examined how teenagers handle peer pressure and how it can mean the difference between being a strong individual and someone who ends up in a lot of trouble. The study identified the occurrence of teenage peer pressure is when teens allow their peers—kids around their same age—to influence their decisions and behavior. Additionally, peer pressure isn't always negative. In some cases, the need to please friends drives teens to make positive changes in their lives. However, the study goes on to suggest that teens who are under stress to impress others take risks that endanger their health, compromise their values, and jeopardize their futures. The study concludes that because teens are moving from depending mainly on their parents to depending on themselves, the peer group is the place where they try out new things, develop their social skills, and define who they are, and finally, that this peer group is very powerful (Fanning, pp. 6-8).

Reed (1997) conducted a study to determine the effect of peer pressure on substance abuse. The study found the prevalence of marijuana use among high-school seniors declined from 1970 - 1991, however from 1995 to 1997 the trends has shown a dramatic shift toward increased use of marijuana. The American Medical Association Board of Trustees agreed with this trend indicating that peer influence is a dominant force in substance use among American youth. Nevertheless, while this study agreed that it is commonly believed that social pressure from peers is a major contributor to substance use, it claims that few studies that measure and estimate peer pressure effects ignore the possibilities that peer pressure may affect peer-group associations and substance use may influence adolescents' perceptions of peer pressure. The author states that no study incorporates direct measures of peer pressure in the study of adolescent substance use. The study did not suggest that peer pressure be rejected altogether as an important variable in explaining marijuana use; however, it did provide evidence to suggest further examination of the role of peers as it relates to marijuana use is warranted. In particular, the study suggests the need to go beyond the overt pressure from peers to broaden the conceptualization of the role of peer influence in understanding delinquency and marijuana use in terms of recognizing that influence can be a result of behavior in the form of rationalization. Additionally, future studies should consider that social selection may be just as important a process as social influence in understanding the linkages among peers, attitudes, and behavior. The study concluded that in the cross-sectional analyses there were no main effects of overt peer pressure on substance use. Estimation of the reciprocal effects model also reveals that overt peer pressure does not significantly influence substance use and does not mediate the effect of differential association. Instated, the influences of socialization, social selection, and rationalization also play a significant role in understanding substance use.

<u>Parent/Child</u>

A teenage survey by the National Center on Addiction and Substance Abuse (CASA) at Columbia University looked at the effect parents had on teenage use of marijuana, cigarettes, and alcohol. It found that in 1998 teens who eat dinner with their parents twice a week or less are four times more likely to smoke cigarettes, three times more likely to smoke marijuana, and nearly twice as likely to drink alcohol as those who eat dinner with their parents six or seven times a week. Additionally, in a 1999 survey, teens from families that almost never eat dinner together are 72% likelier than the average teen to use illegal drugs, cigarettes, and alcohol while those from families that almost always eat dinner together are 31% less likely than the average teen to engage in these activities. In the same 1999 survey, the study found 48% of teens who used marijuana were influenced to do so by their friends, while 36% were influenced by their parents. Conversely, of those teens who did not use marijuana, 42% were influenced by their parents and only 13% were influenced by their friends. Finally, the study found that more than 60% of girls who reported conversations with their parents about smoking, drinking, and drug use said conversations made them less likely to use. This study gave one of the strongest reasons why parents should be more involved with their children. Basically, parents who were consistently involved with their children have a positive effect on the child's use of marijuana, alcohol, and cigarettes (National Center on addiction and Substance Abuse, (2002).

A study done by the University of Wisconsin (2003) examined what influence parents had on their children in drug use prevention While the study confirms that peers, siblings, and friends are a greater source of influence than parents overall, it showed that the inhibitory influence of parents is important enough to be incorporated into intervention and drug education programs. The study demonstrated that parents' behavior, such as their use of these substances, has an effect on

their children. The results show that, while parents do affect their children's choices, parents have more of an effect on their children's opinions about hard drugs and alcohol than on smoking. Also, parental influence was the smallest when it came to the use of marijuana. Finally, the study concluded that for almost all substance choices, the influence of both parents and peers grew with the age of the child. But the impact of peers grew faster for marijuana use, compared to alcohol use, where the impact of parents grew faster (University of Wisconsin, Milwaukee).

Gordon (2003) examined the effect parental attitudes have on teenage addictive behaviors. The study had similar findings as other studies stating almost 50% of adolescents who use marijuana say they first used it when they were 13 years old or younger. The study said there are two major conditions necessary for drug use, availability and acceptability. More than 70% of the students surveyed reported it was easy to buy drugs at school. However, regardless of the ease of obtaining a drug, people will not use it unless the use fits into their view of themselves. During adolescence, the study goes on to say, drug use by peers and older role models are strong influences on teens' experimentation and regular use habits. In addition, in the past decade there has been a drastic decrease in the gender gap in drug use, as more and more adolescent girls view it as an acceptable activity. The study acknowledges that peer influence is a large force in a teenagers' life; however, families continue to have much influence on their teenagers. The findings show parents are not armed with their own healthy behaviors, beliefs, and knowledge and consequently are unable to instill healthy attitudes in their children. Additionally, the study found that many parent have a high tolerance of substance use and abuse. The study said many parents make alcohol and tobacco easily accessible to their children. They believe that supervised drinking is not harmful, and they purchase alcohol for parties for their teens and share their cigarettes with their teens. They study goes on to find that many teenagers lack a strong parental presence in their

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lives. Adolescents who do not find a parent at home after school are more likely to smoke tobacco regularly, drink and get drunk regularly, and use marijuana regularly than teens who are better supervised. In conclusion, the study found that in addition to more involvement by parents, involvement by the other family members such as grandparents and close relatives might be better able to reach a troubled teen than parents alone (Gordon, pp. 25-27). The same basic findings were stated in an article in the Sarasota Herald-Tribune which described teen substance-abuse problems in Charlotte, N.C. Drug counselors that were interviewed said too many Charlotte teens think smoking marijuana and drinking beer are harmless. The article goes on to say that the overly permissive attitude among parents may be a major contributing factor (Sarasota Herald-Tribune, 2004).

A study by Manisses Communications Group, Inc. (2004) found that the main factors associated with early alcohol and drug use among adolescents involved friends, parents, and school. The study reinforced prior research findings that adolescent drug use is closely related to peer behavior. The study also found that one aspect of the parent-adolescent relationship was strongly associated with alcohol and drug use. Parental intentions characterized by negative reinforcement and inconsistent enforcement of rules increased the odds of adolescents getting drunk and using drugs. Parental monitoring, however, was not associated with drinking to intoxication or drug use. The study showed that marijuana use was prevalent among adolescents. Nineteen percent of 12-15 year-olds reported using marijuana, including 3% of 12-year-olds and 38 % of 15-year-olds. The study found that the average age for first use of marijuana ranged from 13.1 to 13.8 years of age. Also, 82% of adolescents used marijuana in the past year if most or all of their friends had done so, compared with 7% with few or no marijuana-using friends having used marijuana. Finally, the study found that peer influences were a stronger risk factor for

adolescent substance use than parental drinking was. According to the study adolescents from families where dinking was source of tension were no more likely to drink to intoxication or use drugs that were adolescents in families not affected by drinking (Manisses Communications Group, Inc., (2004).

A study published by the PR Newswire Association, Inc. (2004) examined what the effect on how a teenager feels about himself or herself play on whether they choose to drink alcohol or use marijuana. The study showed that teens with a high sense of themselves are more likely to avoid alcohol and drug use and that parental involvement strongly correlates with how teens think of themselves. The study showed that teens who report regular, open communication with their parents about important issues say they are more likely to try to live up to their parents' expectations and less likely to drink or use drugs. The study concluded that the quality of the parent-teen relationship plays a critical role in determining a teen's mood and, thus, their susceptibility to destructive decision-making. Finally, the study concluded that teens whose parents set guidelines for their behaviors are more inclined to feel positively about themselves and to avoid drinking and using drugs (PR Newswire Association, Inc.).

Hellewell (2004) conducted a study at Brigham Young University on how parents, specifically fathers, influenced drug use by teenagers. The study stated that while peers have long been perceived as the most critical factor in whether teens participate in drug use, this study found that parental involvement played a key role in whether children get involved with drugs. The study focused on marijuana use because it is the most commonly used illegal drug. It showed that fathers seem to have more impact on keeping children away from drugs than mothers. The study also focused on parenting styles, showing authoritative, not authoritarian, parenting styles are the most effective. This style of parenting shows children a lot of love and attention but also has definite

standards and expectations. The study also concluded that another important finding indicated that children who think they are going to be caught by their parents are less likely to get involved in drug use (Hellewell).

Beymer and Hutchinson (2002) in a study to better identify and understand problems such as alcohol and marijuana use by children conducted interviews with professionals working with these children. The professionals who were included in the study were a principal of an elementary school, a licensed school psychologist, a circuit court judge, a deputy chief probation officer, a chief of police, an elementary school counselor and social worker, a director of community corrections, an addiction service coordinator at a country hospital, a child protective services social worker, a teacher of emotionally handicapped students, and a principal of a middle school. The questions asked in the study were: What personal characteristics do you feel troubled children have in common? What kinds of problems do these children have? What kind of home environment/family background do these children have? What is the primary cause of these children's problems? and at what age level were most of the problems you see identified? Responses generally concerned the effects on children of inadequate nurturance resulting from instability in the home environment and poor parent-child communication. It was further found that the risk of alcohol or drug abuse rises for children in families with substance abuse problems, especially if the parents excuse their children's delinquent behavior. The ages that children were first identified to be having problems with alcohol and marijuana was 9 to 12. The study concluded that varied problems at home are the primary contributors to behavior problems with children. Some of the problems are focus on external factors such as unemployment, low income, labor intensive jobs, poorly educated parents, and alcohol and substance abuse. Other focused on

the make-up of the family, such as having a teenage mother, a single parent, a female head of household, divorced parents, and stepparents.

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

Rossenbaum (1998) conducted a field experiment to estimate the short- and long-term effect of the Drug Abuse Resistance Education program (DARE) on student' attitudes, beliefs, social skills, and drug use behaviors. One thousand seven hundred and ninety-eight students from urban, suburban, and rural schools were followed for more than six years, with surveys administered each year from 6th grade through 12 grade. The study tested the hypothesis that DARE would have a sustained preventive effect on drug use behaviors. All analyses of drug use activity had to control for the reality of increased usage over time, as well as for dramatic shifts in level and rate of increase during the high school years. The results provided no support for the drug prevention hypothesis. After controlling for the effect of the high school years and supplemental drug education, they found that DARE had no significant impact on drug use, that is, students who participated in DARE were no different from students in the control group with regard to their recent and lifetime use of drugs and alcohol (Rosenbaum, pp. 381-412).

Manisses Communications Group, Inc. (1999) analyzed a study done by the University of Kentucky on the Drug Abuse Resistance Education (DARE) program. The study represented an attempt to examine the impact of DARE for a period as long as 10 years. Researchers compared pre-DARE levels of student' tobacco, alcohol, and marijuana use with their use rate at age 20. The students had participated in a 17-week DARE curriculum in sixth grade. Researchers compared the students who received the police-administered curriculum with those who had participated in drug education programs taught by health teachers. The results indicated the DARE had no significant positive effect. For cigarette, alcohol, and marijuana use, researchers found that use

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levels and negative expectations associated with use had no relationship to a student's participation in DARE. In addition, the study found the DARE had no significant positive effect on peer-pressure resistance or self-esteem (Manisses Communications Group, Inc., pp. 6-7).

Thombs, (2000) conducted a study to examine the long-term effects of DARE (Drug Abuse Resistance Education) by assessing substance use among 630 undergraduates attending a large public university in Ohio. The results revealed that among those respondents one to six years beyond high school, 62.5% had participated in DARE as a child or teenager, 30.6% had not participated in the program, and 6.7% were uncertain. Results from a multiple discriminate analysis found that after accounting for the effect of age, there were no substantial group differences in substance use. Participation in the DARE program during elementary school, middle school, or high school did not appear to deter subsequent use in the undergraduate years. These results are consistent with previous research on the short-term and long-term effects of DARE participation. Overall, the data from this study add to a growing research literature that questions the effectiveness of DARE in deterring cigarette, alcohol, and other drug use (Thombs, pp.27-42).

Harvard Mental Health Letter (2000) in a 10-year follow-up study suggests that the country's most popular school drug education program is not effective. Drug Abuse Resistance Education (DARE) was developed by the Los Angeles Police Department and school system and has been adopted by many school districts in the United States. The curriculum is taught to elementary and junior high school students by police officers who have taken an 80-hour course in teaching techniques and classroom management as well as the effects of drug use. In 17 weekly sessions of lectures and question-and-answer sessions, students are given information about drugs, taught how to resist social pressures for drug use, instructed in decision-making skills, and told

about healthful alternatives to drugs. The authors of the follow-up study conducted a mail survey of 1,002 men and women, ages 19-21, who had taken either DARE or a standard drug education curriculum (which varied with the school and the teacher) in sixth grade. The standard drug education lasted on average 30 to 45 minutes over a period of three to four weeks. In the review, only alcohol, tobacco, and marijuana were considered because few of the subjects had used any other recreational drugs. The two groups did not differ in drug use, attitudes toward drugs, resistance to peer pressure, or self-esteem. Attitudes toward drugs at age 20 were closely correlated with attitudes at age 10, before exposure to DARE. The authors point out that 20 is an age when drug experimentation reaches a peak and begins to decline. They conclude that in the long run, DARE is either ineffective or no more effective than standard drug education, which is less expensive and time-consuming. Earlier studies had shown that DARE has no short-term effect either. The authors suggest that parents and teachers continue to value the program because most children exposed to it do not take drugs. But the same is true of most children who receive less elaborate forms of drug education or none at all. According to the authors, adults overestimate the effects of formal drug education because the extent of teenage drug abuse has been exaggerated (Harvard Mental Health Letter).

Bond et al. (2004) in a research paper published by the Journal of School Health examined the impact of a school-based preventive intervention on cannabis use in adolescence, using a cluster-randomized trial of a multilevel intervention aimed at improving social relationships within schools by promoting change in school environment. The study indicated that a multilevel school-based program may provide an innovative direction for sustainable school interventions with the potential to reduce substance use. The study identified that cannabis was the most widely used illicit substance in North America and many European countries. School environments have been

linked to substance use in several ways. School connectedness has been shown to be protective against substance use as well as other adolescent health problems. Programs such as knowledge of cannabis use and its effects showed some positive results. However, the study concluded that it was worth the time and effort invested to implement a multilevel intervention. The study focused on there areas: building a sense of security and trust, enhancing skills and opportunities for good communication, and building a sense of positive regard through valued participation in aspects of school life. Results indicated that intervention may have been responsible for reductions in the odds of cannabis use between 20% to 30%. The study demonstrated success in enabling schools to develop a coordinated approach to health promotion not just through individually focused materials, but by changing school environments.

Ellickson et al. (2003) conducted a study to evaluate the impact of a state-of-the-art drug prevention program, Project ALERT, on risk factors for drug use in mostly rural Midwestern schools and communities. Fifty-five middle schools from South Dakota were randomly assigned to treatment or control conditions. Treatment-group students received 11 lessons in Grade 7 and 3 more in Grade 8. The lessons focused on knowledge about smoking marijuana prevalence, immediate consequences, social acceptability, and normative expectations. In addition, there was mass media coverage of the homework sessions involving active role-plays with parents and family members. Effects for the 4,276 eighth graders were assessed 18 months after baseline. Results indicated the Project ALERT had a statistically significant effect on all the targeted risk factors associated with cigarette and marijuana use and more modest gains with the pro-alcohol risk factors. The program was successful in changing perceptions about positive consequences of use, friends' reactions to drug use, intentions not to use, and communication skills. The program helped adolescents at low, moderate, and high risk for future use, with the effect sizes typically

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stronger for the low and moderate risk groups. The study concluded that school-based drug prevention programs can lower risk factors that correlate with drug use, help low to high risk adolescents, and be effective in diverse school environments.

<center>Race Difference</center>

Gilmore (1990) conducted a study on racial differences in acceptability and availability of drugs and early initiation of substance use. The study examined the differences among White, Black, and Asian American fifth graders regarding their initial usage of various drugs, parents' attitudes toward these behaviors, and the availability of drugs. The population consisted of a total of 919 urban school children, of which 46% were White, 25% were Black, and 21% were Asian American. The proportion of children who had tried alcohol and cigarettes was highest for White and lowest for Asian Americans. Previous studies have also shown that Whites begin substance abuse earlier, contrary to the misconception that minority groups become involved with drugs at an earlier age. Availability of marijuana was highest for Whites and lowest for Asian Americans, and the children's perceptions of availability were significantly correlated with substance use. A similar racial pattern was seen regarding parental tolerance of alcohol use, with White parents being most tolerant and Asian Americans parents the least tolerant. For Whites and Asian Americans but not for Blacks, parental approval was an accurate predictor of the children's use of drugs. When asked about whether they expected to be punished for using drugs, the groups did not differ overall, but only Black children showed a link between expecting punishment and not using drugs. This study showed that there are racial differences in attitudes and behaviors concerning substance abuse at this young age (Gilmore).

Bachman (1991) conducted a study into the racial/ethic differences in smoking, drinking, and illicit drug use among American high school seniors. The study consisted of a questionnaire

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from representative samples of approximately 130 high schools consisting of 57,620 students between the years of 1976-1979, 75,772 students between the years of 1980-84, and 73,527 students between the years of 1985-89. The proportion of White respondents decreased during the years of the survey, while those of Asian Americans and Hispanics increased. The use of cigarettes, alcohol, and many illicit drugs was most prevalent among Native Americans, with White students having the next highest rates. Asian Americans, in general, used drugs very little. Black students had lower rates of drug usage than White and Hispanics reported slightly more use than Blacks but lower than Whites. The findings are similar to those of other studies and contrast with the higher drug-related injury and death rate among Blacks as compared with Whites. This study shows relatively low levels of drug use by most non-White youth, especially Black Americans and Asian Americans (Bachman).

Reardon (2002) conducted a study on the differences in onset and persistence of substance abuse and dependence among White, Blacks, and Hispanics. The results showed few racial or ethnic differences in the prevalence of alcohol and substance abuse and dependence at age 15. However, rates of onset of alcohol abuse and substance dependence among Whites between ages 15 and 17 were significantly higher than for Blacks and Hispanics, and the rates of onset of marijuana abuse among Blacks between ages 18 and 20 were significantly higher than for Whites and Hispanics of the same age group. The conclusion was that Whites had a higher rate of marijuana and alcohol abuse in the teenage years than Blacks or Hispanics but by the age of 20 the rates of marijuana abuse were significantly higher among Blacks than among White and Hispanics (Reardon).

CHAPTER 3

METHODOLOGY

The purpose of this study was to analyze the factors that affect the use of marijuana by juveniles. Outside influences such as peer pressure, race, sex, parental influence; and prevention programs such as the Drug Abuse Resistance Education (D.A.R.E.) were analyzed to determine what relationship these factors had on the use of marijuana by juveniles. It was predicted that the juveniles who experienced strong peer pressure would generally use marijuana more often than juveniles who experienced less peer pressure. It was further predicted that race would have an effect on a juvenile's marijuana usage but to a lesser extent. Also, it was predicted that parental influence would have a significant effect on the usage of marijuana by their children. Finally, it was predicted that programs such as Drug Abuse Resistance Education (D.A.R.E.) would have little effect on the usage of marijuana by juveniles. This section describes in detail the data used for this study. This section also describes the variables used to test the hypothesis and the analytic strategy employed in the current study.

Data

The data used for the current study are archived on the National Archive of Criminal Justice Data (NACJD), which can be accessed through the University of Michigan's website. The NACJD collects and archives data in order for individuals to conduct secondary statistical analysis on previously collected data. The data used in the current study were collected in 1995 as part of an effort to evaluate the success of the Gang Resistance Education and Training (G.R.E.A.T.) program. The data were collected through the use of a cross-sectional survey administered to eighth grade students in schools where the G.R.E.A.T. program had been taught to seventh grade

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students the previous year. The sites where the surveys were administered were chosen based on records provided by the Bureau of Alcohol, Tobacco, and Firearms (ATF) that identified the schools where officers had taught the G.R.E.A.T. program the previous year. The sample for this data consisted of 5,935 eighth grade students from a total of 42 different schools in 11 different U.S. cities. The cities included were Las Cruces, NM; Omaha, NE; Phoenix, AZ; Philadelphia, PA; Kansas City, MO; Milwaukee, WI; Orlando, FL; Will county, IL; Providence, RI; Pocatello, ID; and Torrance, CA. The final number of students in the sample was restricted due to such factors as varying attendance rates among the schools and refusal of parents to sign consent forms. Because the respondents either participated in G.R.E.A.T. or they did not, the sample for this data was not random, but was selected to be a nationally representative sample of all eighth graders in the nation (Esbensen et al., 1999).

Variables

This section provides a detailed description of the dependent and independent variables used to examine the hypotheses in the present study. A single dependent variable was used in this study to determine whether or not the respondents had used marijuana. A total of six independent variables were used in this study. These variables were used to analyze the effects that the respondents' gender, race, and living situation, along with the involvement of friends in substance abuse and the completion of the D.A.R.E. program had on marijuana use.

Dependent Variable

In order to assess the usage of marijuana by juveniles, the study contained a question asking the juveniles how many times they had used marijuana in the last three months. The responses for this variable ranged from 1- representing only using marijuana one time within the past three months, to 90- representing everyday marijuana use.

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<u>Independent Variables</u>

There were five independent variables examined in this study. The first control variable is the respondents' gender (Male= 1; Female= 0). The next variables are used to control for the respondents' race. The original race variable included in the G.R.E.A.T. data consisted of seven different racial categories. For the purposes of this study the original race variable was recoded into four separate variables. It was first recoded into a new variable as follows: 1= White; 2- Black; 3- Hispanic; 4-7= Other. It was also recoded into four dummy variables as follows: (1= White; 0= Non-White) (2= Black; 0= Non-Black) (3= Hispanic; 0= Non-Hispanic) (4-7= Other; 0= White, Black, and Hispanic). This was done in order to examine the effects of each respondent's race separately.

In order to assess how each respondent was affected by friends involved in substance abuse, a friends substance abuse scale was constructed (Alpha = .87). The scale consisted of the following three items: 1) Do your friends use alcohol?; 2) Do your friends use tobacco?; 3) Do your friends use marijuana? All three of the items in the scale used a likert scale response method. The responses were scored as follows: (1= none of them; 2= few of them; 3= half of them; 4= most of them; 5= all of them). The scores on the scale had a possible range of 5 to 15, with a higher score on the scale indicating more substance abuse by the respondents' friends than a lower score.

The next variable assessing the interaction with other people was: Who do you live with? (1= mother only; 2= father only; 3= both parents; 4= other; 5= grandparents). Finally, to asses whether formal programs such as the Drug Abuse Resistance Education (D.A.R.E) program had a substantial effect on the juveniles' marijuana usage, the question was asked: Have you completed the D.A.R.E. program? (1= no; 2= yes).

Analytic Strategy

To test the hypotheses in this study, several statistical tests were computed and reported. At the univariate level, frequency and descriptive statistics for each of the variables were included. These statistics include the mean, median, mode, standard deviation, range, minimum, and maximum of the responses to each item; along with the frequency of the responses for each of the variables.

At the bivariate level independent sample t-tests were computed to compare the prevalence of marijuana use between males and females and those who have completed DARE and those who have not. Also, a Pearson's Correlation matrix was constructed to examine the correlations between a juvenile's marijuana use and all of the independent variables.

At the multivariate level two analysis of variance (ANOVA) tests were conducted to analyze the differences in marijuana use by race and by living situation. Also at the multivariate level an ordinary least squares regression (OLS) model was constructed. This allowed for an in depth analysis of the effect that each individual independent variable had on marijuana use by juveniles, while at the same time controlling for all other variables in the model. Regression analysis typically only uses data measured at the interval/ratio level. However, variables measured at the nominal and ordinal levels can also be included in a regression analysis through the use of dummy variables. For the purposes of this study dummy variables were created in order to examine the effects of gender, race, and living situation on marijuana use by juveniles.

CHAPTER 4

RESULTS

The purpose of this study was to analyze the use of marijuana by juveniles and the effect of peers, parents, race, gender and drug abuse resistance education has on that use. It was predicted that the juveniles would be most influenced by their peers (friends, school-mates, etc). It was further predicted that parents of juveniles would have an effect on the use of marijuana by their children. It was further predicted that race would have an effect on marijuana use by juveniles showing Whites and Hispanics less likely than Blacks to use marijuana. Finally, it was predicted that the Drug Abuse Resistance Education (D.A.R.E.) program would have little effect on the amount of marijuana use by juveniles in this study.

This section includes descriptions of the results for all of the statistical tests that were conducted in this study. Results described in this section are also illustrated in tables that are included in the text. There are six tables discussed in this section. The first two tables consist of analysis of the data at the univariate level, and the final four tables present analysis of the data at the bivariate and multivariate levels.

Summary Statistics

Table 1 contains the summary statistics for all of the variables used in the current study. This table indicates the number of males and females that participated in the study, the respondents' gender, the respondents' answer to completing the D.A.R.E. program, the statistics on the dependent variable, and the respondents' answers to whether they lived with both parents, one parent, grandparents, or none of the above. There were 5,884 who indicated their gender. Of those, 51.9 % were female and 48.1 % were male. There were 5,832 respondents who indicated

their race. Of those, 40.4 % were White, 26.5 % were Black, 18.8 % indicated they were Hispanic, and 14.1% indicated their race as other. There were 5,852 respondents to the question of whether they completed the D.A.R.E. program. 15.3 % indicated they had not completed the program and 84.7 % indicated they had completed the program. Finally, out of a total of 5,878 respondents, 27.6 % indicated they lived with their mother only, 3.6 % with their father only, 61.7 % indicated they lived with both parents, 2.0 % indicated they lived with their grandparents, and 5.1 % indicated none of the above.

Table 1
Descriptive Statistics for All Variables

	Frequency	%	S.D.	Range	Mean	Median	Mode
Times Used Marijuana			70.59	1-365	10.71	0	0
Gender			.50	0-1	.48	.00	.00
Female	3054	51.9					
Male	2830	48.1					
Race			1.08	1-4	2.07	2.0	1.0
White	2355	40.4					
Black	1544	26.5					
Hispanic	1098	18.8					
Other	835	14.1					
Complete DARE			.360	1-2	1.85	2.0	2.0
No	894	15.3					
Yes	4968	84.7					
Live With			1.01	1-5	2.50	3.0	3.0
Mother only	1620	27.6					
Father only	213	3.6					
Both	3628	61.7					
Others	301	5.1					
Grandparents	116	2.0					
Friends Substance Abuse scale			3.61	3-15	6.84	6.0	3.0

Table 1 also reports the mean, median, mode, and standard deviation of the responses to the items that make up the friends substance abuse scale. This scale consisted of three items that when combined measured the amount of substance abuse that the respondents' friends were involved in. Responses to the scale items were scored as follows: (1= none of them; 2= few of them; 3= half of them; 4= most of them; 5= all of them). The scores on the scale had a possible range of 5 to 15, with a higher score on the scale indicating more substance abuse by the respondents' friends than a lower score. The mean score of the responses to the scale items was 6.84. This would indicate that their friends are not heavily involved in substance abuse. The median score of the responses to the scale items was 6.0. This would also seem to indicate that the respondents' friends were not heavily involved in substance abuse. The mode or most frequently occurring score was a 3.0, and the standard deviation or dispersion around the mean was 3.61.

<div align="center">Mean Differences in Marijuana Use</div>

Table 2 indicates the results from the independent sample t-test comparisons of juveniles' marijuana use by gender and completion of the D.A.R.E. program. The table presents the means and standard deviations of the respondents' scores. The mean score on the dependant variable measuring marijuana use for male respondents was 15.66, while the mean score for females were 6.14. This indicates that more male juveniles in the current study use marijuana more often than female juveniles. These mean scores were found to be significantly different at the .01 level. This finding lends support to the hypothesis that males use marijuana more than females.

The mean score for respondents who did not complete the D.A.R.E. program was 19.17 while the mean score for the respondents who did completed the D.A.R.E. program was 9.20. This indicates that juveniles who have completed the D.A.R.E. program on average use marijuana less than those who have not completed the D.A.R.E. program. These mean scores were also

found to be significant at the .01 level. This finding contradicts the hypothesis that programs such as D.A.R.E. will not prevent marijuana use by juveniles.

Table 2
t-test Comparisons of Juveniles' Marijuana Use by Gender and DARE Completion

		N	Mean	S.D.
Gender*	Female	2884	6.14	46.89
	Male	2677	15.66	89.45
Complete DARE*	No	836	19.17	101.85
	Yes	4702	9.20	63.68

*P<.01

Correlation between Variables

Table 3 indicates the Pearson's correlation coefficients (Pearson's r) between the dependant variable of times used marijuana and all of the independent variables. The most significant independent variable was friend's substance abuse which had a moderate positive correlation of .253.This indicates that having friends involved in substance abuse seems to be the most significant factor contributing to marijuana use by juveniles. This finding supports the hypothesis that juveniles will be more likely to use marijuana as influenced by their peers such as friends and association with other juveniles.

The variables of sex, live with father only, live with both parents, and D.A.R.E. completion were all significant at the .01 level. The variables of live with both parents, and D.A.R.E. completion had weak negative linear relationships with the use of marijuana by juveniles. The variables assessing the respondents' sex and the living situation of father only both had weak positive linear relationships with the use of marijuana by juveniles. None of the variables assessing the respondents' race (White, Black, Hispanic, and Other) were significantly correlated

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with marijuana use by juveniles, but being White or Hispanic was negatively correlated with juvenile marijuana use, while the racial categories of Black and "other" were positively correlated with juvenile marijuana use. The variable "live with mother only" was significant at the .05 level and had a very weak positive linear relationship with the use of marijuana by juveniles.

Table 3
Pearson's Correlations between Juveniles' Marijuana Use and All Independent Variables

	Ever Used Marijuana
Sex	.067**
White	-.018
Black	.011
Hispanic	-.006
Other	.014
Complete DARE	-.050**
Live With Mother Only	.027*
Live With Father Only	.039**
Live With Both Parents	-.042**
Live With Others	-.001
Live With Grandparents	.011
Friends Substance Abuse	.253**

* Correlation is significant at the .05 level.
** Correlation is significant at the .01 level.

These findings lend support to the hypothesis that African American juveniles are more likely than Whites and Hispanics to use marijuana during adolescence. These findings also support the hypotheses that male juveniles are more likely to use marijuana than female juveniles

and juvenile's living with both parents are less likely to use marijuana than those in other living situations.

ANOVA of Race and Marijuana Use

Table 4 indicates the analysis of variance comparison of juveniles' marijuana use by race. The response to the dependent variable measuring marijuana use was coded continuously with a range of reported times used marijuana of 1 to 90. None of the comparisons in this test were significant at the .05 level. The mean score for White respondents was 9.21 indicating that White respondents on average reported that they had used marijuana a little over nine times in the past 3 months. The mean score for Black respondents was 12.07 indicating that Black respondents on average reported that they had used marijuana around 12 times during the past three months. The mean number of times that Hispanics in this study had used marijuana in the past 3 months was 9.81, which indicates that Hispanic respondents reported slightly more marijuana use than White respondents. Finally, the mean score for the "other" racial category was 13.14 indicating that on average the respondents from this racial category report more marijuana use than any of the other racial categories. These results provide some support for the hypothesis that African American juveniles are more likely than Whites and Hispanics to use marijuana during adolescence.

Table 4 also reports the results of the Tukey's HSD test, which compares the mean score for each racial group to each of the other racial groups. In this study, the mean amounts of marijuana use reported by respondents from the four different racial groups were not found to be significantly different. Even though the "other" racial category reported the highest mean amount of marijuana use and White respondents reported a much lower amount of marijuana use, the mean amounts reported were not found to be significantly different by the Tukey's HSD test.

Table 4

Analysis of Variance Comparison of Juveniles' Marijuana Use by Race

Race	Mean
White (N= 2270)	9.21
Black (N= 1437)	12.07
Hispanic (N= 1008)	9.81
Other (N= 794)	13.14

Note. All comparisons made using Tukey's HSD test
* $P < .05$, Whites as comparison.
** $P < .05$, Blacks as comparison.
*** $P < .05$, Hispanics as comparison.
**** $P < .05$, Other as comparison.

ANOVA of Living Situation and Marijuana Use

Table 5 reports the analysis of variance comparisons of juveniles' marijuana use by their living situation. The mean amount of marijuana use reported by respondents living with their mother only was 13.91, which indicates that respondents who live with their mother only reported that they had used marijuana nearly 14 times in the past 3 months. The mean amount of marijuana use reported by respondents living with their father only was 24.98. This indicates that respondents living with their father only reported that they had used marijuana about 25 times in the past 3 months. Also, respondents living with their father only had the highest mean amount of marijuana use out of all of the different living situations. The mean amount of marijuana use reported by respondents living with "other" was 1.40, again indicating the majority of respondents did not use marijuana and very similar to that of those respondents living with their father only. The mean amount of marijuana use reported by respondents living with their grandparents was 16.18, which indicates that respondents in this living situation reported that they had used

marijuana around 16 times in the past 3 months. The mean amount of marijuana use reported by respondents living with both parents was 8.41, which means that juveniles in this living situation reported using marijuana only about 8 times in the past 3 months. Juveniles living with both parents reported the least amount of marijuana usage in the past three months. These results provide support for the hypothesis that juveniles living with both parents are less likely to use marijuana than those in other living situations.

Table 5 also reports the results of the Tukey's HSD test, which compares the mean score for each living situation with all other living situations. The marijuana use by respondents living with their father only was significantly different at the .05 level from the marijuana use of the respondents living with both parents. All of the other reported amounts of marijuana use by living situation were not found to be significantly different at the .05 level.

Table 5
Analysis of Variance Comparison of Juveniles' Marijuana Use by Living Situation

Live With	Mean
Mother Only (N= 1518)	13.91
Father Only (N= 198)	24.98***
Both Parents (N= 3465)	8.41 **
Others (N= 270)	10.46
Grandparents (N= 103)	16.18

Note. All comparisons made using Tukey's HSD test
* P < .05, Mother Only as comparison.
** P < .05, Father Only as comparison.
*** P < .05, Both Parents as comparison.
**** P < .05, Others as comparison.
$ P < .05, Grandparents as comparison.

Table 6 reports the summary of the regression analysis for the variables predicting marijuana use by juveniles. The largest regression coefficient (Beta) was for the friend's substance abuse scale, which was significant at the .01 level with a Beta score of .235. This shows that having friends involved in substance abuse is the most significant predictor of juveniles' marijuana use. In addition, the independent variables of sex (.058 Beta) and complete D.A.R.E. (-.037 Beta) were also significant at the .01 level. The regression coefficient for Hispanic respondents was -.044, and was significant at the .05 level. None of the other independent variables in the model produced regression coefficients that were significant at least at the .05 level. There were no significant differences in amount of marijuana use found among the different racial categories or the different living situations.

Table 6
Summary of Regression Analysis for Variables Predicting Juveniles' Marijuana Use

Variable	B	t	Beta
Sex	8.346	4.347	.058**
White	-4.449	-1.550	-.030
Black	-1.929	-.605	-.012
Hispanic	-8.341	-2.496	-.044*
Live With Mother Only	5.485	1.152	.034
Live With Father Only	12.060	1.800	.031
Live With Both Parents	3.812	.826	.026
Live With Grandparents	11.355	1.370	.021
Complete DARE	-7.363	-2.729	-.037**
Friends Substance Abuse	4.843	16.305	.235**

Note. $R^2 = .073$
* $P < .05$
** $P < .01$

CHAPTER 5

DISCUSSION

The purpose of this study was to analyze the factors that affect the use of marijuana by juveniles and how outside influences such as peer pressure, race, gender, parent influence, and prevention programs such as Drug Abuse Resistance Education (D.A.R.E.) contribute to the use of marijuana by juveniles. It was predicted that juveniles were most influenced to use marijuana by their peers such as friends and association with other juveniles. It was further predicted that African American juveniles would be more likely than White and Hispanics use marijuana during adolescence. Also, it was predicted that parent relationship with their children would have a positive effect on the reduced usage of marijuana. Finally, it was predicted that the Drug Abuse Resistance Education (D.A.R.E.) would have little influence on reducing marijuana use by juveniles.

<u>Hypothesis 1</u>

The first hypothesis predicted that juveniles would be most influenced by their peers such as their friends and association with other juveniles. This hypothesis was validated by the research. Evidence supporting this hypothesis can be found in the results of Pearson's correlations between juveniles' marijuana use and all independent variables (see table 3). The most significant independent variable in the Pearson's correlation was friend's substance abuse which had a moderate positive correlation (.253) with the use of marijuana by a juvenile. Evidence supporting this hypothesis can also be found in the results of the regression analysis. Friend's substance abuse was the most significant predictor of marijuana use by juveniles in the regression equation with a Beta score of .235.

Hypothesis 2

The second hypothesis predicted that the Drug Abuse Resistance Education (D.A.R.E.) program would have little influence on reducing marijuana use by juveniles. There was no evidence found in support of this hypothesis. Evidence that contradicted this hypothesis can be found in the results of the t-test comparison of juveniles' marijuana use between those who had completed the D.A.R.E. program and those who did not (see Table 2). The differences in the mean scores for marijuana use by juveniles who had and had not completed the D.A .R.E. program were significantly different at the .01 level. Completion of the D.A.R.E. program only slightly reduced the amount of juvenile marijuana use. Further evidence was also found that contradicted the second hypothesis in the results of the correlation (see Table 3) which indicated that completing the D.A.R.E. program was negatively correlated with marijuana use by juveniles (-.050). Finally, evidence was also found that did not support hypothesis 2 in the results of the regression analysis (see Table 6). The question asking whether or not the respondents had completed the D.A.R.E. program had a Beta score of -.037, indicating that completion of the program decreased the amount of marijuana use by juveniles.

Hypothesis 3

The third hypothesis predicted that African American juveniles would be more likely than White and Hispanics to use marijuana during adolescence. Evidence was found that supported hypothesis 3 in the Pearson's correlation matrix (see Table 3) and in the analysis of variance comparison of juvenile use of marijuana use by race (see Table 4). The largest Pearson's r among the racial groups was for White respondents (-.018), which indicates a weak negative linear relationship. The Pearson's r for Hispanic respondents (-.006) also indicates a negative linear relationship with marijuana use. Both Blacks (.011) and "others" (.014) were positively correlated

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with marijuana use. In the ANOVA comparison the highest mean marijuana use was reported by "others" (13.14), followed by Blacks (12.07), and Hispanics (9.81). White respondents had the lowest mean amount of marijuana use with a score of (9.21). Evidence was also found that supported hypothesis 3 in the results of the regression analysis (see Table 6). Black respondents with a Beta score of -.012 reported more mean marijuana use than Whites or Hispanics.

<div align="center">Hypothesis 4</div>

The fourth hypothesis predicted that juveniles living with both parents would be less likely to use marijuana than those with other living situations. This hypothesis was supported by the results of the Pearson's correlation (see Table 3) and the ANOVA comparison (see Table 5). The results of the regression analysis (see Table 6) did not support this hypothesis.

The Pearson's r for living with both parents variable was (-.042) which indicates a negative linear relationship. This means that those living with both parents reported the least amount of marijuana use by living situation. All other living situations were positively correlated with marijuana use, except for living with others which basically had no correlation. Living with father only (.039) produced the most significant positive linear relationship, which indicates those living with their father only were the most likely to use marijuana.

The results of the ANOVA comparison of juvenile's marijuana use by living situation also supported hypothesis 4. The highest mean amount of marijuana use (24.98) was reported by those juveniles living with their father only, followed by those living with grandparents (16.18), mother only (13.91), and others (10.46). The lowest mean amount of marijuana use was reported by those living with both parents (8.41).

Evidence contradicting hypothesis 4 was found in the results of the regression analysis (see Table 6). The largest Beta score (.034) among living situations was for those juveniles living with

their mother only, which indicates those juveniles living with their mother only would be the most likely to use marijuana. All other living situations also showed an increase in marijuana use, with the lowest Beta (.021) belonging to the live with grandparents variable. This indicates that respondents living with grandparents reported the least amount of marijuana use.

Hypothesis 5

The fifth hypothesis predicted that male juveniles would be more likely to use marijuana than female juveniles. This hypothesis was supported by the results of the t-test comparison of juveniles' marijuana use by gender (see Table 2), the results of the Pearson's correlation (see table 3), and by the results of the regression analysis (see Table 6).

The t-test comparison of juvenile marijuana use by gender supported this hypothesis. The mean score on the dependant variable measuring the frequency of marijuana use for male respondents was 15.66, while the mean usage for females was 6.14. This indicates that males in this study reported that they had used marijuana more than twice as much as female respondents during the past 3 months. These mean scores were found to be significantly different at the .01 level.

The results of the Pearson's correlation test also supported hypothesis 5. The Pearson's r for the sex variable was (.067). This indicates that a weak positive linear correlation existed between the sex variable and marijuana use. Because this variable was coded 0 = female; 1 = male, this indicates that being male was correlated with marijuana use. This correlation was significant at the .01 level.

Finally, hypothesis 5 was supported by the results of the regression analysis. The regression coefficient for the respondent's sex variable was (.058). Because the variable was

coded 0 = female; 1 = male, this indicates that being male on average increased the amount of marijuana use by .058. This Beta was found to be significant at the .01 level.

Limitations

This study did contain a few limitations. One of these limitations was due to the use of secondary data. Secondary data are simply data that have already been collected by another researcher. This type of data is convenient to use because of the time and energy that can be saved by bypassing the data collection step in a research project. However, this type of data also has inherent drawbacks. A researcher who uses secondary data is limited to the sample, variables, and data collection methods that were used by the original researcher. A specific example of how the inability to add variables affects this study is provided by the lack of variables in this data set to measure substance abuse by the juveniles' parents. Variables that measured this phenomenon could add to the depth of this study by allowing an assessment of how substance abuse by parents affects the marijuana use of juveniles.

Another limitation of this study lies in the use of cross-sectional data. Cross-sectional data simply means that the data were collected from a single observation in time versus longitudinal data, which are collected through multiple observations over time. The use of longitudinal data would have enabled a more complete study of how the individual factors in this study affected the marijuana use by juveniles over time.

The final limitation of this study was the size of the sample. The size of the sample was so large that some very minor differences produced statistical significance in the results. This produced a requirement for deeper interpretation rather than merely reporting statistical significance. However, the large sample size used in this study was necessary in order to generalize the results to the total population of juveniles in the United States.

<u>Implications</u>

The implications of this study are significant. First of all, the literature reviewed in this study suggests that marijuana usage by juveniles is widespread. Marijuana use by juveniles is especially troubling because of the devastating affects it can produce throughout their lives. This study provides some especially important information for parents in two ways. First, parents should take particular interest in this study because it reveals that their children are most influenced by their peers. The results of this study showed that the influence of peers who were involved in substance abuse was the strongest predictor of marijuana use by juveniles. This may be due to a lack of interaction of parents with their children. Possibly, parents that would spend more time with their children or at least show more interest in who their children were associating with may have a positive effect on the usage of marijuana by their children. Secondly, this study is important for parents because it showed that the influence of the parents is also important in preventing marijuana use by juveniles.

Another important implication of this study deals with prevention programs. The time and money spent on Drug Abuse Resistance Education programs does not seem to have a significant effect on juvenile's usage of marijuana. As stated earlier, this study suggests that parents must find the time to interact with their children more and show more interest in whom their children spend their time with. The results show that this would have the most effective results for preventing marijuana use by adolescents. Perhaps if some of the time and money devoted to D.A.R.E. programs was shifted to programs that help children build positive relationships with parents and friends and avoid peer pressure, then maybe a greater preventative affect could be achieved.

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VITA

Daniel J. Moeser

Personal Data: Date of Birth: August 26 1949

Place of Birth: New York, New York

Marital Status: Married

Education: Public Schools, Copiague, New York

East Tennessee State University, Johnson City, Tennessee;

General Studies, BGSD, 2003

Criminal Justice and Criminology, M.A., 2005

Professional

Experience: Graduate Assistant, East Tennessee State University, College of

Arts and Sciences, 2004 – 2005

Honors and

Awards: Graduated Magna cum Laude,

East Tennessee State University.