This survey examined the behaviors associated with the six leading causes of death or disability in one state's high school youth. Participants were 2,439 9th-12th grade students. Results identified alcohol as the drug most frequently used by high school students, with over half of students having used alcohol by their senior year and almost half having had at least one drink in the month prior to the survey. Nearly 25 percent reported binge drinking—white students were almost twice as likely to binge drink as black students. More than one-third of students had ridden with a driver who had been drinking with one-fifth of males and one-tenth of females admitting to drinking and driving. For tobacco use, males and females appeared nearly equally likely to smoke cigarettes but white males made up almost all of smokeless tobacco users. For illicit drug use, black students were less likely than white or "other" students to have used most types of drugs. White males reported the use of almost all substances to a greater degree than other students. Comparisons to earlier reports suggest that younger adolescents are less likely to consider the use of alcohol, tobacco, or other drugs to constitute risky behavior. Contains 22 references. (RJM)
Results From the 1993 North Carolina Youth Risk Behavior Survey

Division of Innovation and Development Services
Accountability Services Area
North Carolina Department of Public Instruction
Bob Etheridge, State Superintendent

1994

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
E. BRUMBACK
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."
ALCOHOL, TOBACCO, AND OTHER DRUG USE BY 9TH-12TH GRADE STUDENTS:
RESULTS FROM THE 1993 NORTH CAROLINA YOUTH RISK BEHAVIOR SURVEY

Report prepared by

Victoria A. Mikow, Ph.D.

Division of Innovation and Development Services
Accountability Services Area

North Carolina Department of Public Instruction
Bob Etheridge, State Superintendent
1994
As North Carolinians, we are all concerned about the well-being of our young people. Parents respond to opinion polls expressing fears about safety at school. The General Assembly has passed extensive legislation in the Special Crime Session and the Short Session to deal with safety and juvenile crime. School administrators and teachers struggle to deal with the rising tide of violence in our public schools. We are all striving to respond to our young people’s needs while at the same time protecting our citizens.

The mission of the Department of Public Instruction is to guarantee that our young people receive the very best education possible. A part of that education includes effective substance abuse prevention and intervention programs. Based on national and state information, we have made progress in reducing or delaying our young people’s use of alcohol, tobacco, and other drugs. However, the findings of this report show us that the use of drugs continues at an unacceptable level. We must not falter in our efforts to continue our positive gains. We now know that the abuse of substances is clearly associated with juvenile crime and violence, as well as academic failure and other related social problems.

We must do more to reach our young people who are in trouble. It is crucial that we maintain our progress in prevention and intervention and target more specific strategies aimed at reducing use at the high school level. The findings of this report will help us target these strategies more effectively to build safe, drug-free schools where all young people can learn and succeed.

Bob Etheridge, State Superintendent
# TABLE OF CONTENTS

Foreword .................................................................................................................... i

Executive Summary .................................................................................................. ii

Introduction ................................................................................................................ 1

Overview of the North Carolina Youth Risk Behavior Study ..................................... 2

Indicators of Alcohol, Tobacco, and Other Drug Use .................................................. 3
  Lifetime Use of Alcohol .............................................................................................. 4
  Current Use of Alcohol .............................................................................................. 5
  Binge Drinking ........................................................................................................... 6
  Drinking on School Property ...................................................................................... 7
  Riding with a Drinking Driver ................................................................................... 8
  Drinking and Driving ................................................................................................. 9
  Additional Findings Related To Alcohol ................................................................. 10
  Tobacco use: Cigarettes and Smokeless Tobacco Products ..................................... 10
  Lifetime Use of Cigarettes ...................................................................................... 11
  Thirty-Day Use of Cigarettes .................................................................................. 12
  Smokeless Tobacco Use ......................................................................................... 13
  Marijuana ................................................................................................................... 14
  Lifetime use of Marijuana ....................................................................................... 14
  Thirty-Day Use of Marijuana .................................................................................. 16
  Cocaine ................................................................................................................... 17
  Other Illicit Drug Use ............................................................................................... 18
  Steriods .................................................................................................................... 19
  Injection of Illegal Drugs ......................................................................................... 20
  Obtaining Information about Alcohol and Other Drugs .......................................... 21
  Changes in Drug Use: Comparison of 1990-1993 .................................................... 21

Summary ....................................................................................................................... 24

References .................................................................................................................... 26

Selected Questions from the 1-93 NC YRBS ................................................................ 28
EXECUTIVE SUMMARY

Since 1990, the North Carolina Department of Public Instruction has participated in a cooperative agreement with the Centers for Disease Control (CDC) to conduct the North Carolina Youth Risk Behavior Survey (NC YRBS). In 1993, 71 schools were randomly selected as NC YRBS survey sites. In all, 2439 students from grades 9-12 completed usable surveys.

Results indicate that alcohol continues to be the drug most frequently used by high school students in North Carolina. By the time they become seniors, the majority of students have used alcohol. Almost half of all high school students in North Carolina drank at least one drink in the month prior to the survey.

Another aspect of frequent alcohol use is binge drinking. Nearly one-quarter of all high school students participated in binge drinking at least once in the month prior to the survey. White students were almost twice as likely to binge drink as black students; males almost twice as likely as female students. About one in every 30 students reported that they did not think that they could stop using alcohol.

Drinking and driving is a particularly dangerous activity. Yet, more than one-third of high school students rode with a driver who had been drinking in the month prior to the survey. This has not declined since 1990. Nearly one-fifth of male students compared to one-tenth of females students, reported drinking and driving. The proportion of twelfth grade students who drove a vehicle after drinking increased somewhat from 1990.

In the area of cigarette smoking, findings indicate that in North Carolina, males and females were nearly equally likely to smoke cigarettes. Cigarette smoking is up for ninth graders and down for seniors when compared to the limited findings from the 1990 YRBS. Seniors in North Carolina were slightly more likely than 12th grade students nationally to have smoked cigarettes. However, smokeless tobacco use is almost entirely a white male phenomenon among North Carolina students, increasing somewhat since 1990.

The use of illicit drugs continues to be a problem for high school students. Consistent with national findings, black students in North Carolina were much less likely than white or “other” students to have used most types of drugs. White males reported the use of almost all substances to a greater degree than black or female students. The use of marijuana in the month prior to the survey has increased since 1990. Students were also reporting a substantial amount of use of other illegal drugs, such as PCP, LSD, ecstasy, speed, ice, heroin, or non-prescription pills. Another pertinent finding is that steroid use continues to be reported by white male students.
High school students report receiving limited information about substances in their classes at school or from parents. Well over half of students said parents talked to them about substances never or only once in the past year. Also, one in five students reported that parental drinking had caused them problems in the past year.

The findings reported in this study indicate that high school students in North Carolina continue to use substances at an unacceptable level. Younger adolescents are less likely than in the past to consider the use of alcohol, tobacco, or other drugs to be risky behavior, setting the stage for the potential escalation in illegal drug use. Too many North Carolina students continue to place themselves at great risk and do not consider these actions to be risky behaviors. Work in substance abuse prevention and intervention, particularly at the high school level, needs to continue.
ALCOHOL, TOBACCO, AND OTHER DRUG USE
BY 9TH-12TH GRADE STUDENTS:
RESULTS FROM THE 1993 NORTH CAROLINA YOUTH RISK BEHAVIOR SURVEY

Introduction

For nearly twenty years, substance abuse has been viewed as one of the nation’s most critical and pervasive social problems. Nationally, drug abuse has been cited as the single biggest problem facing public schools for the last six years in the “Public’s Attitudes Toward Public Schools” (Gallup, 1993). The Gallup poll indicated that the use of drugs (78%) and violence (68%) were the two issues of greatest importance to parents, outweighing all other issues such as the quality of teaching, the adequacy of school funding, or test performance. In North Carolina, respondents listed the use of drugs as the third most important problem facing public schools, after lack of discipline and violence in schools (Mani loff and Clark, 1993). There is widespread public belief that the drug problem among young people is epidemic and is strongly associated with both violence and crime.

As a part of national health promotion efforts, the Centers for Disease Control (CDC) developed the Youth Risk Behavior Survey (YRBS) to determine the extent to which 9th-12th grade students across the nation engage in high risk behaviors that are associated with the leading causes of death and disability in high school youth. The information provided by the YRBS is intended to be used to help focus school programs and resources to address particular health problems, such as reducing or eliminating the use of alcohol and other drugs.

Since 1990, the North Carolina Department of Public Instruction has participated in a cooperative agreement with the CDC to administer the Youth Risk Behavior Survey in North Carolina. The Youth Risk Behavior Survey contains indicators of high risk behavior in six areas:

- Unintentional (accidental) and intentional (physical violence) injuries
- Alcohol and other drug use
- Sexual behavior that results in HIV infection, other sexually transmitted diseases, and unintended pregnancies
- Tobacco use
- Physical fitness
- Nutritional and dietary habits
Overview of the North Carolina Youth Risk Behavior Survey

The purpose of the Youth Risk Behavior Survey (YRBS) is to examine the behaviors associated with the six leading causes of death or disability in high school youth. For this report, selected indicators of substance use behavior, taken from the 1993 North Carolina Youth Risk Behavior Survey (NC YRBS), are examined.

In 1990, the North Carolina Department of Public Instruction contracted with East Carolina University to conduct the first, limited YRBS survey. The partial 1990 survey excluded some of the YRBS questions and sampled only 9th and 12th grade students. Where possible in this report, comparisons are made to the 1990 YRBS for 9th and 12th grade students only.

In 1993, North Carolina elected to participate fully in the YRBS. However, a modified version of the YRBS was developed so that some questions from the North Carolina Alcohol and Drug Defense (ADD) Student Survey could be included. The 1993 NC YRBS was administered to a representative sample of all 9th through 12th grade public school students in the spring of 1993.

Seventy-one schools were randomly selected as NC YRBS survey sites from a base of 407 public schools containing approximately 300,000 students in grades 9-12. Of the 71 schools chosen and 2961 students included in the sample, 12 (16.9%) schools elected not to participate in the study at all, four (5.6%) schools required active parental permission for students to participate in the survey, and six (8.5%) chose not to include the sexual behavior questions located at the end of the survey. The two reasons cited most often for non-participation in the survey were: (1) the questions about adolescent sexual behavior were unacceptable or inappropriate at the local level, and (2) other similar surveys or educational activities were scheduled at the same time. The final sample included 59 (83.1% response rate) schools and 2531 students completing the survey. To ensure accurate responses to sensitive questions as well as privacy and confidentiality, participation in the NC YRBS was entirely voluntary; students could decline to participate at any point in the survey administration.

Eighty-two percent (2439) of the students sampled completed usable surveys. Of those, 49.2 percent (1200) were male and 50.6 percent (1235) were female (Figure 1). Four students did not identify their sex. Summarizing participating students by grade, the results indicate that 29.6 percent (722) were in 9th grade, 28.5 percent (694) were in 10th grade, 23.9 percent (582) were in grade 11, and 17.4 percent (425) were in the 12th grade. There were 16 (.7%) students who did not identify their grade level. By ethnic group, 65.4 percent (1595) of high school students identified themselves as white, 28.4 percent (693) as black, 1.2 percent (30) as Hispanic, and 4.8 percent (117) as "other." The NC YRBS sample closely approximates the ethnic distribution of North Carolina students as a whole in 1993: white students in North Carolina comprised 66.1 percent, blacks represented 30.2 percent, and Hispanics were 1.1 percent of the total student population. There were too few Hispanic students to provide
representative information about their use of alcohol, tobacco, or other drugs so the 1993 NC YRBS findings are limited to white, black, and “other” students.

Figure 1. 1993 NC YRBS 9th-12th grade student sample by sex, grade, and race

Indicators of Alcohol, Tobacco, and other Drug Use

The use of drugs has significant health, social, and legal consequences for adolescents. Drug use has been on the upswing, according to researchers who conduct a national drug use study of students in grades 8, 10, and 12 every two years (Bachman, Wallace, O’Malley, Johnston, Kurth, & Neighbors, 1991; Johnston, O’Malley, & Bachman, 1992, 1993, 1994). In their 19th annual survey of American high school seniors (The National High School Senior Drug Abuse Survey) and their third annual survey (Monitoring the Future) of eighth- and tenth-graders, Johnston et al. report an increase in marijuana use throughout the country at all three grade levels, as well as an increase in the use of stimulants, LSD, and inhalants. Also noted is an increase in cigarette smoking at all three grade levels.

North Carolina students appear to be similar in most ways to high school students nationally. In the next sections, findings from the 1993 NC YRBS pertaining to patterns of alcohol, tobacco, and other drug use are reported for students in grades 9 through 12 in North Carolina.
Alcohol Use.

Alcohol is the most widely used drug in America by both adults and young people. The 1993 National High School Senior Drug Abuse Survey (Johnston et al., 1994) indicates that by the time young people across the nation reach their senior year of high school, nearly nine out of ten students have used alcohol.

The use of alcohol by high school-aged students is associated with the likelihood of engaging in other high risk behaviors. Alcohol is present in approximately half of all homicides, suicides, and motor vehicle crashes, that are the leading causes of death and injury among young people (Perrine, Peck, and Fell, 1988; US Department of Health and Human Services, 1990, 1990a, 1990b). Because of the high proportion of students using alcohol and the risks associated with the use of alcohol, the Healthy People, 2000 (American Medical Association, 1990a) national goals for adolescents specifically include the reduction in the frequency of alcohol use and reduction in binge drinking or bouts of heavy drinking (5 or more drinks at one sitting). Alcohol use by North Carolina high school students is reported in the following sections.

Lifetime Use of Alcohol

Seventy-two percent of all North Carolina 9th-12th grade students reported having used alcohol at least once (lifetime use). The use of alcohol increases with age; 78 percent of all twelfth students used alcohol (Figure 2).
Male students (73%) were somewhat more likely than female students (70%) to have used alcohol.

30 percent of all 9th-12th grade students reported using alcohol prior to the age of 13.

Variation in lifetime use of alcohol across racial groups was small: 73 percent of black students, 71 percent of white students, and 69 percent of "other" students reported using alcohol at least once.

Thirty-day or Current Use of Alcohol

Although the use of alcohol is illegal for youth under the age of 21, almost half of all high school students drank at least one drink in the month prior (current use) to the survey (Figure 3). More males reported that they drank in the month prior to the survey and their percentage increased with age. A similar trend did not emerge for females.

Figure 3. Percent of NC students having at least one drink in the 30 days prior to the survey by sex, grade, and race
Overall, 48 percent of all male students and 40 percent of female students in grades 9-12 reported having at least one drink of alcohol in the 30 days prior to the survey.

Fifty-one percent of seniors reported drinking in the past month.

Current use of alcohol increases with age for males. Females' use of alcohol also increases, but not as much. Forty percent of 9th grade males, 44 percent of 10th, 53 percent of 11th, and 57 percent of 12th grade males reported drinking at least once in the previous month.

White and black male students were equally likely to have used alcohol in the previous month with 48 percent, respectively, reporting alcohol use.

**Binge Drinking**

The number of drinks consumed at one sitting is one indicator of alcohol abuse and a measure of risk for alcoholism. "Binge" drinking is defined by researchers as drinking five or more drinks in a row at one sitting and is a particularly dangerous practice. Heavy drinking by high school-aged students has been strongly linked to physical fights, vandalism, academic problems, and legal difficulties (Dryfoos, 1987). In North Carolina, nearly one-quarter (23%) of all 9th-12th grade students reported drinking five or more drinks at one time at least once in the 30 days prior to the survey in 1993 (Figure 4).

![Figure 4. Percent of NC students consuming 5 or more drinks at one time in the past 30 days by sex, grade, and race](image-url)
White (27%) and “other” (27%) students were almost twice as likely to binge drink as black students (14%).

Male students are almost twice as likely to binge drink as female students. Thirty percent of all 9th-12th grade male students drank five or more drinks in the previous month compared to 16 percent of all female high school students.

**Drinking on School Property**

Few high school students drink on school property. Five percent of all 9th-12th grade students reported drinking on school property, although more than twice as many male (10%) as female (4%) students reported doing so (Figure 5).

![Figure 5. Percent of NC students drinking on school property by sex, grade, and race](image)
Riding with a Drinking Driver

As noted earlier, the use of alcohol is highly associated with the risk for death and injury in motor vehicle crashes. Overall, 33 percent of high school students reported riding with a driver who had been drinking in the month prior to the survey (Figure 6).

![Bar chart showing percent of NC students who rode with a drinking driver in the 30 days prior to the survey.](chart)

Figure 6. Percent of NC students who rode with a drinking driver in the 30 days prior to the survey

- Slightly more males (35%) than females (31%) rode with a drinking driver in the month prior to the survey.
- Twelfth grade students (37%) were most likely to ride with a drinking driver.
- 41 percent of 12th grade males rode with a drinking driver while 33 percent of female 12th grade students reported doing so.
Drinking and Driving

Drinking and driving is unsafe at any age. Overall, 13 percent of high school students reported driving a car or other vehicle after consuming alcohol in 1993 (Figure 7).

![Bar chart](image)

**Figure 7.** Percent of NC students who drove a vehicle after drinking in the 30 days prior to the survey by sex, grade, and race

- Male students (18%) were more than twice as likely as female students (7%) to report driving after drinking.
- Nearly one quarter (24%) of all seniors reported driving a car after drinking in the past 30 days.

Students also were asked how many cans or bottles of beer that a person can drink and still drive safely. Although nearly two-thirds of high school students reported that any drinking impairs driving skills, more than one-third of high school students reported that an individual could drink and drive safely.
Additional Findings Related to Alcohol

Students were asked to report whether they had experienced problems with others as a result of their use of alcohol. Overall, 4 percent of 9th-12th grade students reported problems with teachers or their school principal as result of drinking, 12 percent with friends their own age, 6 percent with the police, and 13 percent with other family members.

Problem drinking and alcoholism by parents and siblings increases the risk of alcoholism and drug abuse in youth (Cloninger, Bohman, Sigvardsson, & von Knorring, 1985). Children of alcoholics are four times more likely to become alcoholics than other youngsters (Hawkins, Catalano, & Miller, 1992). Nineteen percent of all high school students reported that their parents' drinking has caused them problems in the past year. Based on population estimates, this translates to approximately 57,000 students who are “at risk” due to parental alcohol problems.

Research has shown that if adolescents believe that use of alcohol, tobacco, and other drugs by their peers or same age friends is widespread and condoned, they are more likely to engage in substance use. Findings from this study indicate that 74 percent of all 9th-12th grade students say that their friends do not care whether they drink (51%) or approved of someone their own age drinking alcohol (23%). A total of 79 percent reported that most students in their grade did not care whether they drink (51%) or approved of drinking (28%).

As an indicator of over-involvement with alcohol, students were asked whether they thought that they could stop using alcohol if they wanted to. About 3 percent of high school students reported that they did not think they could stop using alcohol. Based on population estimates, this indicates that approximately 7,000 students in North Carolina feel that they cannot control their drinking.

Tobacco Use: Cigarettes and Smokeless Tobacco Products

According to the Office of the Surgeon General, the use of tobacco products is the single leading cause of preventable deaths and disease in the United States, accounting for one out of every six deaths (US Department of Health and Human Services, 1994). Considerable evidence indicates that the health problems associated with tobacco use are a direct function of the number of years of tobacco use and the amount used. Despite health warnings, the onset of the use of tobacco typically occurs in adolescence, usually by the age of 16 (Gallup, 1992). Further, about the same number of teenagers begin to use tobacco products each year; this rate has remained relatively unchanged among adolescents for the past decade, despite the continuing decline in the prevalence of smoking among adults.
Approximately 28 percent of 12th grade students throughout the nation smoke cigarettes. Overall, about one-third of high school-aged students smoke cigarettes or use a smokeless tobacco product such as chew or snuff (US Department of Health and Human Services, 1994). Tobacco is considered a “gateway drug”; that is, tobacco is generally found to be the first drug used by individuals who may escalate their use of substances to alcohol, marijuana, and other drugs.

Adolescents who use smokeless tobacco products are more likely to become cigarette smokers than individuals who do not use smokeless tobacco. White adolescents are more likely than black or Hispanic adolescents to use any form of tobacco. Finally, research indicates that tobacco use in adolescence is associated with increased involvement in violence such as fighting and carrying weapons, engaging in higher-risk sexual behavior, and using alcohol and other drugs (US Department of Health and Human Services, 1994).

**Lifetime Use of Cigarettes**

More than half (56%) of all North Carolina high school students have smoked cigarettes (Figure 8). In addition, 30 percent of all 9th-12th grade students reported that they smoked a whole cigarette prior to the age of 13.

![Figure 8. Percentage of North Carolina students who ever smoked a whole cigarette by sex, grade, and race](chart)

- White (59%) and “other” (60%) students were more likely to have smoked than black (47%) students.
- More male (58%) than female (53%) students reported ever smoking a cigarette.
Thirty-Day Use of Cigarettes

The use of cigarettes in the past month is an indicator or marker for addiction (US Department of Health and Human Services, 1994). Twenty-nine percent of all high school students (approximately 87,000 students) smoked cigarettes on one or more of the previous 30 days (Figure 9).

![Bar chart showing the percentage of North Carolina students who smoked cigarettes in the 30 days prior to the survey]

- In 1993, males (30%) were more likely than females (28%) to report smoking cigarettes.
- One-third (33%) of ninth grade students smoked cigarettes in the month prior to the survey.

In a separate question about wanting to quit smoking, 16 percent of all students reported trying to quit smoking during past six months. Based on population estimates, this indicates that approximately 18,000 high school students were addicted smokers who wanted to quit.
Smokeless Tobacco Use

Smokeless tobacco use is associated with a number of negative health consequences such as gum disease, oral cancer, cavities, nicotine addiction, and increased risk of becoming a cigarette smoker (US Department of Health and Human Services, 1994). Similar to smoking cigarettes, initiation in the use of smokeless tobacco products generally begins in early adolescence and some research indicates that age of onset is as low as 10 years (US Department of Health and Human Services, 1992b). In North Carolina, white males reported much higher use of smokeless tobacco products compared to other racial groups and females.

Figure 10. Percentage of North Carolina students who ever used smokeless tobacco by sex, grade, and race

- Two and one-half times as many white males (59%) as black males (24%) have ever used smokeless tobacco.
- White females (13%) were four times less likely to have tried smokeless tobacco products than white males (59%).
- Nearly one-third (30%) of males reported using smokeless tobacco products prior to the age of 13.
In a question about current use of smokeless tobacco products, 11 percent of all high school students reported the use of a smokeless tobacco product in the month prior to the survey. Overall, more than one-fifth (21%) of 9th-12th grade male students reported use of smokeless tobacco in the previous month compared to 2 percent of female students. White males (27%) were nearly seven times more likely than black males (4%) to have used smokeless tobacco products in the month prior to the survey.

Also, on another question, 7 percent of all 9th-12th grade students reported using smokeless tobacco products on school property in the previous 30 days. Of those, white males (17%) were nearly six times more likely than black males (3%) to have used smokeless tobacco products on school grounds.

Marijuana

The 1993 Monitoring the Future Project (Johnston, et al., 1994) indicated that the use of marijuana has increased nationally among 8th, 10th, and 12th grade students. Research has shown that the use of marijuana is generally preceded by the use of alcohol and tobacco products. However, the use of marijuana is associated with escalating use of illicit substances and is therefore considered a more serious “gateway” drug than either tobacco or alcohol. The most common sequence of drug use is cigarettes, alcohol, and marijuana followed by the use of psychoactive or prescription drugs and other illegal drugs (US Department of Health and Human Services, 1994). The regularity and frequency of marijuana use by North Carolina students is reported in the following sections.

Lifetime Use of Marijuana

Overall, 29 percent of all North Carolina 9th-12th graders reported using marijuana at least once. In general, the use of marijuana increased with age: 26 percent of 9th grade, 26 percent of 10th grade, 32 percent of 11th grade, and 34 percent of 12th grade students had used marijuana at least once.
Figure 11. Percentage of North Carolina students who ever used marijuana by sex, grade, and race

- White (29%) and black (29%) students were similar in ever having used marijuana. However, more “other” (38%) students reported having tried marijuana than either black or white students.

- Males (34%) were more likely than females (24%) to have tried marijuana.
Thirty-Day Use of Marijuana

More than one-in-seven (15%) or approximately 45,000 9th-12th grade students reported using marijuana in the 30 days prior to the survey (Figure 12). There was little difference in current use of marijuana by grade.

![Bar chart showing percentage of North Carolina students who used marijuana in past 30 days by sex, grade, and race]

- Fifteen percent of 9th graders, 13 percent of 10th graders, 15 percent of 11th graders, and 16 percent of 12th graders used marijuana at least once in the previous 30 days.
- Nearly one-fifth (19%) of male students used marijuana in the past month compared to a little more than one-tenth (11%) of female students.

Although not shown in the Figure 12, 7 percent of all 9th-12th grade students reported using marijuana on school property at least once in the previous 30 days. Students were also asked how often they had used marijuana and alcohol at the same time. More than one-tenth (12%) of high school students reported using alcohol and marijuana at the same time.
Students’ Use of Other Drugs

Cocaine

The use of cocaine by young people has concerned the American public and policy makers for some time. The War on Drugs stemmed in large measure from the public’s perception that the use of cocaine was epidemic and the increase in violent crime was directly linked to illegally importing and distributing cocaine. However, in North Carolina, experimentation (lifetime use) with cocaine is relatively limited. Overall, 4 percent of all 9th-12th grade students reported ever having used any form of cocaine (Figure 13). More than twice as many whites (5%) as blacks (2%) reported ever using cocaine. However, students who describe themselves as “other” (11%) were the most likely to report having tried cocaine.

![Figure 13. Percent of NC students who ever used any form of cocaine (powder, crack, or freebase) by sex, grade, and race](image)

- Although the percentages are low, three times as many white (6%) as black (3%) males had tried cocaine, in any form.
- Similarly, twice as many white (4%) as black (2%) females had tried cocaine.

In a separate question (not shown in the figure above) about current use, 2 percent of high school students reportedly used some form of cocaine in month prior to the survey. White males (3%) were only slightly more likely than black males (2%) to have reported the use of cocaine in any form in the month prior to the survey.
Other Illicit Drug Use

Nationally, the use of some types of illicit drugs appears to be on the rise. Among these are LSD and stimulants (Johnston, et al., 1994). A substantial proportion of high school students in North Carolina reported using illicit drugs, such as LSD, PCP, ecstasy, mushrooms, speed, ice, heroin, or pills without a doctor's prescription (Figure 14). Fourteen percent (approximately 42,000) of 9th-12th grade students have tried illegal drugs. White students (18%) were four and one-half times more likely to use other illegal drugs than black students (4%). However, "other" (17%) students also reported a substantial use of illegal drugs.

![Figure 14. Percentage of North Carolina students who ever used any other type of illegal drug by sex, grade, and race](image)

- White males (19%) were almost four times more likely than black males (5%) to have used an illegal drug.
- White females (17%) were more than four times more likely than black females (4%) to have used an illegal drug.
Also, students were asked if they had ever tried hallucinogens, such as LSD. Overall, 8 percent of high school students reported using hallucinogens at least once. However, whites (10%) were five times more likely than blacks (2%) to have used hallucinogens. White male (12%) and white female (8%) students were more likely than black male (3%) or black female (1%) students to have used hallucinogens.

Research has shown that the use of illegal drugs by parents increases the risk of initiation of use of alcohol and other illicit drugs by adolescents (Johnson, Schutz, & Locke, 1984). Students were asked if a parent's drug use had ever caused problems in the past year. Nearly one in 10 high school students (approximately 27,000 students, based on population estimates) reported that a parent's use of drugs had caused problems.

Steroids

The use of steroids by male athletes has been fairly widespread in recent years (Bell & Doege, 1987), because steroids cause a rapid increase in muscle mass and increased performance in some sports. However, prolonged use of steroids is associated with adverse health consequences, such as infertility, violence and paranoia, cancer, and heart disease (American Medical Association, 1990b). The use of steroids by physically immature youth seems to have even more severe health consequences than in more mature athletes. In North Carolina, the use of steroids is not very common. Overall, 4 percent of high school students reported ever having used steroids (Figure 15). Three percent of white students, 2 percent of black students, and 9 percent of "other" students reported ever using steroids. Steroid use appears to be primarily a male phenomenon; female students were unlikely to report ever using steroids.

Figure 15. Percentage of North Carolina students who ever used steroids by sex, grade, and race
• White males (6%) were more likely than black males (4%) to have used steroids.
• One percent of white and black females reported having used steroids.

Injection of Illegal Drugs

Injection of illegal drugs is highly correlated with the risk for HIV infection (American Medical Association, 1990a). Indeed, IV drug users comprise the second largest identifiable group with AIDS (Centers for Disease Control, 1991). Currently, one-third of all AIDS cases are directly attributed to exposure to the HIV virus by injecting illegal drugs (Centers for Disease Control, 1991).

Figure 16. Percent of NC students who ever injected any illegal drug by sex, grade, and race

Overall, 3 percent (approximately 9,000 students) reportedly injected an illegal drug at least once. Male students (4%) were significantly more likely than female students (1%) to have injected drugs. White students (3%) and black students (2%) were substantially less likely to have injected drugs than students who described themselves as “other” (8%).
In a separate question, students were asked whether they had been offered, sold, or given an illegal drug on school property in the year prior to the survey. Nearly one-third (approximately 87,000) of all high school students reported the sale or offer of illegal drugs on school campuses. There was little variation by race in the sale or offer of drugs. Apparently, students continue to have access to drugs on public school campuses in North Carolina.

Obtaining Information about Alcohol or Other Drugs

Several questions were added to the 1993 NC YRBS from the 1991 Alcohol and Drug Defense (ADD) Student Survey to obtain information about students' attitudes toward the use of alcohol, tobacco, and other drugs. Additionally, questions were asked about where students obtain information about substances.

One question concerned how often in the previous school year students had received any information about alcohol or other drugs from health or other school classes. Overall, 48 percent of all 9th-12th grade students reported that they had never or only one time received information about alcohol or other drugs in health or other school classes. School counselors were not likely to provide information about substance use or abuse either; 84 percent of high school students reported having received information from school counselors never or one time only. Finally, students were not likely to get information from their parents about alcohol, tobacco, or other drugs. Nearly 60 percent of students reported that their parents never or only once talked with them about substances in the previous year.

The implication of these findings is that, despite federal and state legislation to the contrary, high school students are not getting information on alcohol or drugs at school, nor are they getting information from their parents at home.

Changes in Drug Use: Comparison of 1990-1993

As previously noted, in 1990 a limited version of the YRBS was administered to a representative sample of 9th and 12th grade students in North Carolina. While comparisons are made to comparable questions from the 1990 NC YRBS to 1993 findings for 9th and 12th grade students only, the two data points reported are too few to determine whether the changes reflect stable trends.

The percentage of current users of alcohol declined for 9th (Figure 17) and 12th (Figure 18) grade students between 1990 and 1993. Additionally, compared to 1990 data, fewer 9th and 12th graders binged in 1993. Unlike prior results, there has not been a decline the proportion of students who rode with drinking driver since 1990. Consistent with national trends, it appears that North Carolina students have increased their current use of marijuana (use of marijuana within the previous month) based on limited comparisons with the 1993 YRBS.
In 1993, 40 percent of 9th grade students reported drinking in the month prior to the survey compared to 44 percent of 9th students in 1990.

The percent of 9th grade students reporting drinking five or more drinks at one time in the month prior to the survey declined from 27 percent to 19 percent from 1990 to 1993.

The percent of 9th grade students who rode with a drinking driver in the month prior to the survey increased from 29 percent to 33 percent from 1990 to 1993.

The percent of 9th grade students who reported driving a car or other vehicle after drinking declined from 8 percent to 6 percent from 1990 to 1993.

The percent of 9th grade students who reported smoking cigarettes in the month prior to the survey increased from 27 percent to 32 percent from 1990 to 1993.

The percent of ninth graders using marijuana in the month prior to the survey increased from 11 percent to 14 percent from 1990 to 1993.
Figure 18. Comparisons of Thirty-day Use of Alcohol, Tobacco, and Marijuana for 12th graders in 1990 and 1993

- In 1993, 51 percent of 12th grade students reported drinking in the month prior to the survey compared to 58 percent of 12th grade students in 1990.

- The percent of 12th grade students reporting binge drinking declined from 41 percent to 28 percent from 1990 to 1993.

- There was no change in the percentage of 12th grade students reporting riding with a drinking driver from 1990 to 1993. Thirty-seven percent of 12th grade students reported riding with a drinking driver in both years.

- The percent of 12th grade students who drank and drove increased from 22 percent to 24 percent from 1990 to 1993.

- The percent of 12th grade students who smoked cigarettes in the month prior to the survey declined from 32 percent to 28 percent between 1990 and 1993.

- The percent of twelfth graders using marijuana in the previous month increased from 14 percent to 16 percent from 1990 to 1993.
The percent of ninth graders using cocaine in the month prior to the survey has remained nearly equal (2.4% to 2.5%) from 1990 to 1993. However, the percent of twelfth graders using cocaine in the month prior to the survey increased slightly from 2 percent to 3 percent from 1990 to 1993.

Summary

The majority of high school students in North Carolina and across the nation experiment with alcohol and other drugs. Although most of these students will moderate or discontinue their use as they mature, a significant minority will progress to serious involvement with substances. The relationship between substance abuse and HIV infection, as well as other high risk behaviors, has made the prevention of adolescent substance abuse even more urgent.

Alcohol continues to be the drug most frequently used by high school students in North Carolina. By the time they reach their final year of high school, the majority of students have used alcohol. Almost half of all high school students drank at least one drink in the month prior to the survey.

Another aspect of frequent alcohol use is binge drinking. Nearly one-quarter of all high school students participated in binge drinking at least once in the month prior to the survey. White students were almost twice as likely to binge drink as black students; males almost twice as likely as females. About one in every 30 high school students reported that they did not think they could stop using alcohol. Based on population estimates, this indicates that approximately 7,000 students in North Carolina feel that they cannot control their drinking.

Given teenagers' limited driving experience, drinking and driving is a particularly dangerous activity. Yet, more than one-third of high school students rode with a driver who had been drinking in the month prior to the survey. There has not been a decline in this activity since 1990. More than one in ten students drove a car or other vehicle after drinking in the month prior to the survey. Nearly one-fifth of male students, compared to one tenth of female students, reported drinking and driving. The proportion of twelfth grade students who drank and drove increased somewhat from 1990.

In the area of cigarette smoking, findings indicate that in North Carolina, males and females were nearly equally likely to smoke cigarettes. Cigarette smoking is up for ninth grade students and down for twelfth grade students compared to 1990. Twelfth graders in North Carolina were slightly more likely than 12th graders nationally to have smoked cigarettes. However, smokeless tobacco use in North Carolina is almost entirely a white male phenomenon, increasing somewhat since 1990.
The use of illicit drugs continues to be a problem for high school students. White males reported the use of almost all substances to a greater degree than black or female students. The use of marijuana in the month prior to the survey increased. Students were also reporting the use of other illegal drugs, such as LSD, PCP, ecstasy, speed, ice, heroin, or non-prescription pills. Another pertinent finding is the steroid use reported by white male students. Black students in North Carolina were much less likely than white and "other" students to have used most types of drugs.

Two other issues are raised by the survey results — the impact of parental substance abuse on teenagers and the reported lack of parental sharing of information on substance abuse with high school age students. Problem drinking, alcoholism, and other drug use by parents increases the risk for substance abuse by adolescents as well as other social and academic problems.

The findings reported in this study indicate that the high school students in North Carolina are using substances at an unacceptable level. Adolescents are less likely than in the past to consider the use of alcohol, tobacco, or other drugs to be risky behavior. Declining social constraints on substance use set the stage for the potential escalation in illegal drug use. Too many North Carolina students continue to place themselves at great risk and do not consider these actions to be risky behaviors. According to the findings from the 1993 NC YRBS, work in substance abuse prevention and intervention, particularly at the high school level, needs to continue.
REFERENCES

American Medical Association. (1990a). *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. American Medical Association, Department of Medicine, Chicago, IL.


SELECTED QUESTIONS PERTAINING TO ALCOHOL, TOBACCO, OR OTHER DRUGS
TAKEN FROM THE 1993 NC YRBS

29. How old were you when you smoked a whole cigarette for the first time?
   a. I have never smoked a whole cigarette
   b. Less than 9 years old
   c. 9 or 10 years old
   d. 11 or 12 years old
   e. 13 or 14 years old
   f. 15 or 16 years old
   g. 17 or more years old

30. How old were you when you first started smoking cigarettes regularly (at least one cigarette every day for 30 days)?
   a. I have never smoked cigarettes regularly
   b. Less than 9 years old
   c. 9 or 10 years old
   d. 11 or 12 years old
   e. 13 or 14 years old
   f. 15 or 16 years old
   g. 17 or more years old

31. During the past 30 days, on how many days did you smoke cigarettes?
   a. 0 (zero) days
   b. 1 or 2 days
   c. 3 to 5 days
   d. 6 to 9 days
   e. 10 to 19 days
   f. 20 to 29 days
   g. All 30 days

32. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day?
   a. I did not smoke cigarettes during the past 30 days
   b. Less than 1 cigarette per day
   c. 1 cigarette per day
   d. 2 to 5 cigarettes per day
   e. 6 to 10 cigarettes per day
   f. 11 to 20 cigarettes per day
   g. More than 20 cigarettes per day
33. During the past 30 days, on how many days did you smoke cigarettes on school property?
   a. 0 (zero) days
   b. 1 or 2 days
   c. 3 to 5 days
   d. 6 to 9 days
   e. 10 to 19 days
   f. 20 to 29 days
   g. All 30 days

34. During the past 6 months, did you try to quit smoking cigarettes?
   a. I did not smoke cigarettes during the past 6 months
   b. Yes
   c. No

35. How old were you when you tried smokeless tobacco (chewing tobacco or snuff) for the first time?
   a. I have never tried smokeless tobacco
   b. Less than 9 years old
   c. 9 or 10 years old
   d. 11 or 12 years old
   e. 13 or 14 years old
   f. 15 or 16 years old
   g. 17 or more years old

36. During the past 30 days, did you use chewing tobacco, such as Redman, Levi Garrett, or Beechnut, or snuff, such as Skoal, Skoal Bandits, or Copenhagen?
   a. No, I did not use chewing tobacco or snuff
   b. Yes, chewing tobacco only
   c. Yes, snuff only
   d. Yes, both chewing tobacco and snuff

37. During the past 30 days, did you use chewing tobacco, such as Redman, Levi Garrett, or Beechnut, or snuff, such as Skoal, Skoal Bandits, or Copenhagen on school property?
   a. No, I did not use chewing tobacco or snuff
   b. Yes, chewing tobacco only
   c. Yes, snuff only
   d. Yes, both chewing tobacco and snuff
38. Do you feel you could stop using tobacco if you wanted to?
   a. I do not use tobacco
   b. Yes
   c. No

39. How old were you when you had your first drink of alcohol other than a few sips?
   a. I have never had a drink of alcohol other than a few sips
   b. Less than 9 years old
   c. 9 or 10 years old
   d. 11 or 12 years old
   e. 13 or 14 years old
   f. 15 or 16 years old
   g. 17 or more years old

40. During the past 30 days, on how many days did you have at least one drink of alcohol?
   a. 0 (zero) days
   b. 1 or 2 days
   c. 3 to 5 days
   d. 6 to 9 days
   e. 10 to 19 days
   f. 20 to 29 days
   g. All 30 days

41. During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?
   a. 0 (zero) days
   b. 1 day
   c. 2 days
   d. 3 to 5 days
   e. 6 to 9 days
   f. 10 to 19 days
   g. 20 or more days
42. During the past 30 days, on how many days did you have at least one drink of alcohol on school property?
   a. 0 (zero) days  
   b. 1 or 2 days  
   c. 3 to 5 days  
   d. 6 to 9 days  
   e. 10 to 19 days  
   f. 20 to 29 days  
   g. All 30 days

43. About how many cans or bottles of beer can a person drink and still drive safely?
   a. Any drinking will hurt driving skills  
   b. 1 or 2 in an hour  
   c. 5 to 6 if you wait 2 hours  
   d. Some skilled drivers can drive safely after drinking 6 or more beers in a night

44. If you have used alcohol in the past year, how often has your drinking caused problems with your teachers or your principal?
   a. Never a problem  
   b. Once  
   c. Less than once month  
   d. More than once a month, less than once a week  
   e. More than once a week

45. If you have used alcohol in the past year, how often has your drinking caused problems with friends your age?
   a. Never a problem  
   b. Once  
   c. Less than once month  
   d. More than once a month, less than once a week  
   e. More than once a week

46. If you have used alcohol in the past year, how often has your drinking caused problems with the police?
   a. Never a problem  
   b. Once  
   c. Less than once month  
   d. More than once a month, less than once a week  
   e. More than once a week
47. If you have used alcohol in the past year, how often has your drinking caused problems with your parents or family?
   a. Never a problem
   b. Once
   c. Less than once month
   d. More than once a month, less than once a week
   e. More than once a week

48. If one of your parents has used alcohol in the past year, how often has his or her alcohol use caused you problems?
   a. Never a problem
   b. Once
   c. Less than once month
   d. More than once a month, less than once a week
   e. More than once a week

49. How do your parents/guardians or family feel about someone your age drinking alcohol?
   a. They strongly approve
   b. They approve
   c. They don’t care
   d. They disapprove
   e. They strongly disapprove
   f. I don’t know

50. How do your friends feel about someone your age drinking alcohol?
   a. They strongly approve
   b. They approve
   c. They don’t care
   d. They disapprove
   e. They strongly disapprove
   f. I don’t know

51. How do most students in your grade feel about someone your age drinking alcohol?
   a. They strongly approve
   b. They approve
   c. They don’t care
   d. They disapprove
   e. They strongly disapprove
   f. I don’t know
52. Do you feel you could stop using alcohol if you wanted to?
   a. I do not use alcohol
   b. Yes
   c. No

53. How old were you when you tried marijuana for the first time?
   a. I have never tried marijuana
   b. Less than 9 years old
   c. 9 or 10 years old
   d. 11 or 12 years old
   e. 13 or 14 years old
   f. 15 or 16 years old
   g. 17 or more years old

54. During your life, how many times have you used marijuana?
   a. 0 (zero) times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 to 99 times
   g. 100 or more times

55. During the past 30 days, how many times did you use marijuana?
   a. 0 (zero) times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 or more times

56. During the past 30 days, how many times did you use marijuana on school property?
   a. 0 (zero) times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 or more times
57. If you have used marijuana in the past 30 days, how often did you use beer, wine, or liquor at about the same time?
   a. Never use either alcohol or marijuana
   b. Never use alcohol with marijuana
   c. Less than half the time

58. How old were you when you tried any form of cocaine, including powder, crack, or freebase, for the first time?
   a. I have never tried cocaine
   b. Less than 9 years old
   c. 9 or 10 years old
   d. 11 or 12 years old
   e. 13 or 14 years old
   f. 15 or 16 years old
   g. 17 or more years old

59. During your life, how many times have you used any form of cocaine, including powder, crack, or freebase?
   a. 0 (zero) times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 or more times

60. During the past 30 days, how many times did you use any form of cocaine, including powder, crack, or freebase?
   a. 0 (zero) times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 or more times
61. During your life, how many times have you used the crack or freebase forms of cocaine?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>0 (zero) times</td>
</tr>
<tr>
<td>b.</td>
<td>1 or 2 times</td>
</tr>
<tr>
<td>c.</td>
<td>3 to 9 times</td>
</tr>
<tr>
<td>d.</td>
<td>10 to 19 times</td>
</tr>
<tr>
<td>e.</td>
<td>20 to 39 times</td>
</tr>
<tr>
<td>f.</td>
<td>40 or more times</td>
</tr>
</tbody>
</table>

62. How old were you when you tried LSD, PCP, or other hallucinogens (Acid, Angel Dust) for the first time?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>I have never tried LSD, PCP, or hallucinogens</td>
</tr>
<tr>
<td>b.</td>
<td>Less than 9 years old</td>
</tr>
<tr>
<td>c.</td>
<td>9 or 10 years old</td>
</tr>
<tr>
<td>d.</td>
<td>11 or 12 years old</td>
</tr>
<tr>
<td>e.</td>
<td>13 or 14 years old</td>
</tr>
<tr>
<td>f.</td>
<td>15 or 16 years old</td>
</tr>
<tr>
<td>g.</td>
<td>17 or more years old</td>
</tr>
</tbody>
</table>

63. How old were you when you first tried UPPERS (like speed or amphetamines) without a doctor telling you?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>I have never tried UPPERS (like speed or amphetamines)</td>
</tr>
<tr>
<td>b.</td>
<td>Less than 9 years old</td>
</tr>
<tr>
<td>c.</td>
<td>9 or 10 years old</td>
</tr>
<tr>
<td>d.</td>
<td>11 or 12 years old</td>
</tr>
<tr>
<td>e.</td>
<td>13 or 14 years old</td>
</tr>
<tr>
<td>f.</td>
<td>15 or 16 years old</td>
</tr>
<tr>
<td>g.</td>
<td>17 or more years old</td>
</tr>
</tbody>
</table>

64. During your life, how many times have you used any other type of illegal drug, such as LSD, PCP, ecstasy, mushrooms, speed, ice, heroin, or pills without a doctor’s prescription?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>0 (zero) times</td>
</tr>
<tr>
<td>b.</td>
<td>1 or 2 times</td>
</tr>
<tr>
<td>c.</td>
<td>3 to 9 times</td>
</tr>
<tr>
<td>d.</td>
<td>10 to 19 times</td>
</tr>
<tr>
<td>e.</td>
<td>20 to 39 times</td>
</tr>
<tr>
<td>f.</td>
<td>40 or more times</td>
</tr>
</tbody>
</table>
65. During your life, how many times have you taken steroid pills or shots without a doctor’s prescription?
   a. 0 (zero) times
   b. 1 or 2 times
   c. 3 to 9 times
   d. 10 to 19 times
   e. 20 to 39 times
   f. 40 or more times

66. During your life, have you ever injected (shot up) any illegal drug?
   a. Yes
   b. No

67. During the past 12 months, has anyone offered, sold, or given you an illegal drug on school property?
   a. Yes
   b. No

68. If one of your parents has used drugs in the past year, how often has his or her drug use caused problems?
   a. Never used drugs
   b. Once
   c. Less than once a month
   d. More than once a month, less than once a week
   e. More than once a week

69. In the past school year, how often did you get any information on alcohol or drugs from health or other school classes?
   a. Never
   b. Once
   c. More than once

70. In the past school year, how often did you get any information on alcohol or drugs from counselors at school?
   a. Never
   b. Once
   c. More than once
71. In the past school year, how often did you get any information on alcohol or drugs from discussions with your family?
   a. Never  
   b. Once  
   c. More than once

72. In the past school year, how often did you get any information on alcohol or drugs from a friend your age?
   a. Never  
   b. Once  
   c. More than once

73. In the past school year, how often did you get any information on alcohol or drugs from a uniformed DARE police officer?
   a. Never  
   b. Once  
   c. More than once

74. Do you feel you could stop using marijuana or other illegal drugs if you wanted to?
   a. I do not use marijuana or other illegal drugs  
   b. Yes  
   c. No