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## Behaviors, Attitudes, and Knowledge Related to Drug and Alcohol Prevention Curricula in North Dakota Seventh Through Twelfth Grade Students

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BEHAVIORS, ATTITUDES, AND KNOWLEDGE RELATED TO  
DRUG AND ALCOHOL PREVENTION CURRICULA IN  
NORTH DAKOTA SEVENTH THROUGH TWELFTH GRADE STUDENTS

by

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A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Grand Forks, North Dakota

August

1995

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This dissertation, submitted by Loretta Jean Heuer in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory committee under whom the work has been done and is hereby approved.

Richard G. Landry  
(Chairperson)

John Delane Williams

Mary Lee Fuller

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James T. Larson

This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

Harvey Knoll  
Dean of the Graduate School  
July 21, 1995

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## TABLE OF CONTENTS

	Page
LIST OF TABLES .....	vii
ACKNOWLEDGMENTS .....	x
ABSTRACT .....	xiii
CHAPTER	
I. INTRODUCTION .....	1
Substance Use by Adolescents .....	1
Changes in Behaviors, Attitudes, and Knowledge .....	2
History of Substance Prevention .....	5
Drug Education Programs .....	7
Purpose .....	9
Significance of the Study .....	9
Research Questions .....	10
Definitions .....	11
Assumptions .....	12
Delimitations of the Study .....	13
II. LITERATURE REVIEW .....	14
Substance Use by Adolescents .....	16
Health Risks of Substance Use .....	19



	Page
Changes in Behaviors, Attitudes, and Knowledge .....	23
History of Substance Prevention .....	34
The Evolution of Prevention Programs .....	36
Drug-Free Schools Program .....	37
Drug Education Programs .....	39
National Curricula .....	39
North Dakota Curricula .....	41
Summary .....	48
III. METHODOLOGY .....	50
Description of the Study .....	50
Description of the Instrument .....	51
Sample .....	52
Data Collection .....	53
Data Analysis .....	55
IV. RESULTS .....	57
Description of the Sample .....	57
Research Question I .....	58
Summary .....	73
Research Question II .....	75
Summary .....	106

	Page
Research Question III .....	108
Summary .....	117
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS ..	119
Summary .....	119
Limitations .....	121
Conclusions .....	122
Recommendations .....	127
APPENDIX A NORTH DAKOTA YOUTH ALCOHOL AND DRUG SURVEYS .....	134
APPENDIX B TABLES 25-38 .....	151
APPENDIX C PERMISSION LETTER .....	192
REFERENCES .....	194

## LIST OF TABLES

Table	Page
1. Demographic Information on Junior and Senior High School Students for 1990 and 1993 .....	59
2. Percentage and Chi-square Values for the Substance-Using Behaviors of Junior High Students in 1990 and 1993 .....	61
3. Junior High Students' Attitudes Toward Substance Use in 1990 and 1993 .....	65
4. Percentage and Chi-square Values for the Substance-Using Behaviors of Senior High Students for 1990 and 1993 .....	68
5. Senior High Students' Attitudes Toward Substance Use in 1990 and 1993 .....	72
6. Two-Way Analysis of Variance for Total Knowledge by Year by Grade Level .....	74
7. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Discover Curriculum .....	77
8. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to DUSO Curriculum .....	80
9. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Me-Me Curriculum .....	82
10. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Operation Aware .....	84
11. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Positive Action Curriculum ..	86
12. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Skills for Growing .....	89

Table	Page
13. The Comparison of Each Elementary Prevention Curriculum to the Knowledge Level of Junior High Students .....	91
14. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Health Curriculum .....	92
15. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Here's Looking at You 2000 .	95
16. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Learning to Live Drug Free .	97
17. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Local Curriculum .....	99
18. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Skills for Adolescence .....	102
19. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Skills for Living .....	104
20. The Comparison of Each Junior High Prevention Curriculum to the Knowledge Level of Senior High Students Junior Curricula ..	106
21. Comparison of Elementary Curricula to the Behaviors and Attitudes of Junior High Students in 1993 .....	110
22. Comparison of Elementary Curriculum and the Knowledge Level of Junior High Students in 1993 .....	113
23. Comparison of Elementary Curricula to the Behaviors and Attitudes of Senior High Students in 1993 .....	114
24. The Comparison of Each Junior High Prevention Curriculum to the Knowledge Level of Senior High Students in 1993 .....	117
25. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Discover Curriculum .....	152
26. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to DUSO Curriculum .....	155

Table	Page
27. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Me-Me Curriculum . . . . .	158
28. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Operation Aware . . . . .	161
29. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Positive Action Curriculum . . . . .	164
30. Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Skills for Growing . . . . .	167
31. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Health Curriculum . . . . .	170
32. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Here's Looking at You 2000 . . . . .	173
33. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Learning to Live Drug Free . . . . .	176
34. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Local Curriculum . . . . .	179
35. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Skills for Adolescence . . . . .	182
36. Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Skills for Living . . . . .	177
37. Comparison of Elementary Curricula Relating to Behaviors and Attitudes of Junior High Students . . . . .	180
38. Comparison of Junior High Curricula Relating to Behaviors and Attitudes of Senior High Students . . . . .	182

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## ABSTRACT

Schools seem the natural place for the implementation of prevention programs because most children spend the majority of their youth in the educational system. The Drug-Free Schools and Communities Act of 1986 made funds available to State Departments of Education to implement alcohol and drug programming in the public schools.

The primary purpose of this study was to compare prevention curricula on their levels of effectiveness in increasing knowledge about substance use and in preventing certain behaviors and attitudes. The sample population consisted of 36,693 participants (19,739 junior high and 16,954 senior high) in 1990 and 30,616 participants (16,581 junior high and 14,035 senior high) in 1993. Most respondents were Caucasian (91.6%), both in 1990 and (91.3%) in 1993.

The 1990 and 1993 North Dakota Drug and Alcohol Surveys were the research instruments used to measure the behaviors, attitudes, and knowledge related to specific drug and alcohol usage. Elementary prevention curricula compared were: Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing. Junior high prevention curricula included: Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence.

The behavior of junior high students which showed a positive increase was the category of nonusers for smoking. The behaviors of senior high students which showed a positive increase were: nonuser categories for smoking and alcohol, and not being intoxicated during the last 6 months.

For junior high students who participated in the elementary curricula, respondents of Skills for Growing showed an increase in the percentage of students who reported never having trouble with their friends or being embarrassed by their behavior. For senior high students who participated in the junior high prevention curricula, respondents of Local Curriculum showed an increase in the percentage of students who did not use cigarettes and alcohol.

Comparison across the elementary curricula resulted in the respondents of Positive Action reporting the most positive changes in their behaviors and attitudes. Comparison across junior high curricula did not show any major positive changes in the behaviors of senior high students. The respondents of Health Curriculum displayed a positive change in one attitude and in their knowledge level regarding substance use.

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and I dedicate this dissertation to each of you.

## CHAPTER I

### INTRODUCTION

Public concern regarding adolescent substance use has increased in recent years because it poses serious threats to the health and welfare of the nation's youth. Drug abuse has an important role in premature morbidity and mortality of adolescents. Five of the 10 most frequent causes of death for this age group are related to substance use. Cigarette smoking is the leading cause of preventable death in the United States (Torabi, Bailey, & Majd-Jabbari, 1993). The abuse of tobacco, alcohol, marijuana, and illegal substances is related to most violent deaths in youth such as homicides, suicides, and accidents (Pentz et al., 1989). Although alcohol remains the most prevalent drug used by adolescents, polydrug use is common among adolescents aged 12-17 (Martin, Arria, Mezzich, & Bukstein, 1993).

#### Substance Use by Adolescents

Alcohol, tobacco, and marijuana are the drugs most likely to be used first by students (Hansen et al., 1987). The average age that students first use alcohol is 14 years old (U.S. Department of Health and Human Services, 1991). In 1993, 55.7% of North Dakota senior high school students reported using alcohol, and 23% indicated they had their first drink before the age of 10 (Landry, 1994).

Many students are initiated into smoking during adolescence and report having their first cigarettes before 11th grade (Eckhardt, Woodruff, & Elder, 1994; Landry, 1990, 1994). In 1993, 22.3% of North Dakota senior high school students reported they smoke cigarettes (Landry, 1994).

The use of marijuana has declined since the 1970s. In 1992, 22% of high school seniors used marijuana as compared to 51% in 1979 (Johnson, O'Malley, & Bachman, 1994). In North Dakota, the smoking of marijuana increased from 3.3% in 1990 to 5.4% in 1993 (Landry, 1994).

Presently, alcohol and tobacco remain the two most commonly used nonprescription drugs in the United States (Hansen, Malotte, & Fielding, 1988). This trend is true for North Dakota high school students, whose preferences are first alcohol and then tobacco (Landry, 1994). For many adolescents, the use of substances is limited to a brief period of experimentation, but for others it can lead to compulsive patterns of use characterized by psychological and physical dependence (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990; Wallack & Corbett, 1987). Thorne and DeBlassie (1985) state "one of six teenagers suffers from a severe addiction problem" (p. 335).

### **Changes in Behaviors, Attitudes, and Knowledge**

Behaviors, attitudes, and knowledge of adolescents are influenced by society and the people near them. The most formative years of children's lives are the first six years when they develop attitudes and behaviors which can last a lifetime. Children learn about substance use through observation and imitation

from individuals around them, such as their parents, grandparents, and peers. They began to form behavioral patterns that will be the bases for their actions and feelings throughout their life (Haggerty & Zimering, 1972).

### **Behaviors**

Adolescent substance abuse affects every community and captures the attention of the public because of increasing health and social problems. Besides public and private dollars spent on prevention, the social costs to the community and personal costs to individuals and families can be devastating. Most deaths of high school students are related to automobile accidents or violence involving drinking (Hansen, Johnson, Flay, Phil, Graham, & Sobel, 1988). In a study of Boston area teenagers, half the subjects admit being passengers in a car during the previous year when the driver had been drinking a short time earlier. Among subjects who were drivers, 14% confessed to driving a car shortly after or while consuming alcohol (Wechsler, Rohman, Kotch, & Idelson, 1984). Wallack and Corbett (1987) report, "the leading cause of death for individuals aged 15-24 is drunk driving" (p. 224).

Alcohol, tobacco, and marijuana are considered gateway drugs; their use by adolescents may lead to the utilization of other drugs (Eckhardt et al., 1994; Torabi et al., 1993). A strong relationship exists between cigarette smoking and illegal drug use among adolescents. In a 1985 survey by the National Institute on Drug Abuse, of the adolescents who smoked cigarettes, 74% also drank alcohol, 47% used marijuana, and 9% used cocaine. Among the adolescents who drank

alcohol, 37% also used marijuana and 5% used cocaine. Of the youth who used marijuana, 60% smoked cigarettes, 84% drank alcohol, and 12% used cocaine (Wodarski, 1990). These statistics bear witness to the gravity of polydrug use in the adolescent age group as adolescents attempt to make the transition into adulthood.

### Attitudes

The transitional phase from childhood to adulthood is usually a turbulent period. According to Erickson (1963) adolescence is the stage where individuals seek to establish a sense of identity, and the importance of the family and peers begins to shift for teenagers. This period is critical for the development of self-esteem, social, cognitive, and academic skills. If adolescents form nontraditional attitudes toward substance use, then behaviors demonstrated during these years can later jeopardize their ability to function as healthy, productive adults.

The most powerful influence on adolescent substance use is personal nonconformity or socially deviant attitudes (Newcomb & Bentler, 1988a). These nontraditional attitudes have been related to types of problem behaviors which include alcohol abuse, drug abuse, delinquent activities, and precocious sexual involvement (Donovan & Jessor, 1985). Jessor and Jessor (1977) incorporated these behaviors into the general syndrome of problem behavior, a theory which implies that risk-taking behaviors can be identified through the interaction of demographic, psychological, social, environmental, and behavioral variables.

Attitudes and beliefs of adolescents about drugs and alcohol are influenced by a variety of factors such as parental values, exposure to family and friends who use alcohol and drugs, exposure to chemicals in the media, and education (Lignell & Davidhizar, 1991). Research shows the individual's attitudes or personal standards, along with the number of alcohol-using friends, exerts the greatest influence on beer use (Pisano & Rooney, 1988).

### Knowledge

In the past, increasing adolescent's knowledge level has had little influence on their behavioral outcome, and at times it may have increased the use of substances (Newcomb & Bentler, 1989). However, knowledge and attitudes regarding substance usage appear to be associated because attitudes of adolescents may be affected by the information to which they are exposed in schools (Barnea, Teichman, & Rahav, 1992). Adolescents who had the more permissive attitudes also knew more about the various substances.

### **History of Substance Prevention**

During the late 1960s and early 1970s, prevention programs provided information regarding substances and their use to kindergarten through 12th-grade students by incorporating such teaching methods as scare tactics (Kim, McLeod, & Shantzis, 1989). They were taught about various drugs and their negative consequences. Educators believed high school students were ignorant about substances and their side effects and concluded that by increasing the knowledge base of these individuals, their drug use would decrease. At times, recovering



addicts also gave testimony about the perils of substance use (Bosworth & Sailes, 1993).

In the middle 1970s, strategies in prevention education changed from using scare tactics to the development of the humanistic approach, which focused on building the students' self-esteem and general life skills (Kim et al., 1989). Students learned strategies to develop and promote communication and decision-making skills. The students were viewed as active learners through role playing, peer instruction, or cooperative learning (Bosworth & Sailes, 1993).

During the late 1970s and early 1980s, educational prevention curricula focused on social influences that would increase personal and social competence (Kim et al., 1989). Then in 1986 the U.S. Congress passed P.L. 99-570, the Drug-Free Schools and Communities Act, which provided funding to states for grants to establish, operate, and improve drug education programs (Brandon, 1992). During this period, various preventive curricula were developed in school districts, university settings, and publishing companies to assist teachers in implementing preventive strategies. Examples include Project Alert, which was developed by the RAND Corporation and financially supported by the Conrad N. Hilton Foundation (Ellickson & Bell, 1990), and Project DARE, developed by the Los Angeles Police Department and Los Angeles Unified School District (Marx & DeJong, 1988). Recently, the over-simplified solution of the "Just Say No" theme has been presented nationwide.

### Drug Education Programs

In the past, most educational programs have not been effective in changing attitudes and behaviors. Preventive curricula have been effective in increasing students' knowledge but less successful in changing their attitudes and behaviors (Moskowitz, 1989). Although the Drug-Free Schools and Communities Act of 1986 and the 1989 Amendments Act require states to evaluate their drug education programs, most states have not completed the evaluations (Brandon, 1992; Pellow & Jengeleski, 1991).

Children now are using substances at a much younger age and there is a need to evaluate the effectiveness of school drug curricula. In North Dakota, national preventive curricula, such as Discover, Developing Understanding of Self and Others (DUSO), Health Curriculum, Here's Looking at You 2000, Learning to Live Drug Free, Me-Me, Operation Aware, Positive Action, Skills for Adolescence, Skills for Growing, and Skills for Living, have been implemented in many self-selected schools along with local and other curricula. Other national preventive curricula, such as Al-co-hol, Babes, Health Skills for Life, Ombudsman, Project Charlie, Project Self-Esteem, and Starting Early, are implemented in a smaller number of North Dakota schools.

In 1992, a study was conducted in which the effect of various curricula on the knowledge level and use behaviors of youth grades 7 through 12 in North Dakota high schools was investigated. The results indicated five of the elementary and junior high curricula respondents which had a higher than average

knowledge base about substance use were Project Charlie, Skills for Adolescence, Starting Early, and Other Curriculum. Curriculum respondents which received significantly lower scores on the knowledge statements were DUSO, Health Curriculum, and Me-Me (Landry & Morgan, 1992).

Project Charlie and Starting Early had a positive effect on the perceptions of learners about their knowledge base of substance abuse. Programs that had a significant positive effect on nonusage of drugs and alcohol were Starting Early (for smoking, alcohol, marijuana, and other substances); Skills for Adolescence (for chewing tobacco, alcohol, and steroids); Ombudsman (for smoking, chewing, alcohol, and marijuana); Operation Aware (for alcohol, marijuana, and other substances); Positive Action (for alcohol); DUSO (for smoking and alcohol); and Al-Co-Hol (for alcohol) (Landry & Morgan, 1992).

Programs that had a significant negative effect on nonusage of substances were Project Charlie (for smoking and alcohol); Me-Me (for chewing tobacco); Positive Action (for smoking); DUSO (for chewing tobacco); and Operation Aware (for chewing tobacco). Local curricula were effective at the elementary and junior high school levels, but significantly ineffective in affecting secondary students' behavior regarding substance abuse (Landry & Morgan, 1992). There has not been a statewide cross-sectional, ex post facto study in which different groups of students in the 7th through 12th grades are studied simultaneously to assess for change in behaviors, attitudes, and knowledge level over an extended period.

### **Purpose**

In the fall of 1990 and 1993, studies of junior and senior high school students in North Dakota were completed on alcohol and drug use, attitudes, and knowledge. These two studies were replications of 1980, 1982, and 1986 North Dakota Youth Alcohol and Drug surveys. The 1990 and 1993 reports provided a picture of the current alcohol and drug situation among North Dakota junior and senior high school students (Landry, 1994). The primary purpose of the present study was to assess whether there had been a change in the behaviors, attitudes, and knowledge from 1990 to 1993 in 7th- through 12th-grade students in North Dakota. The second purpose was to investigate the relationship between elementary and junior high school-based prevention programs and changes in self-reported behaviors, attitudes, and knowledge level related to the use of substances in junior and senior high students in North Dakota between 1990 and 1993. The third purpose was to compare the elementary and junior high prevention programs for changes in self-reported behaviors, attitudes, and knowledge level related to the use of substances in junior and senior high students in North Dakota between 1990 and 1993.

### **Significance of the Study**

Except for the study by Landry and Morgan (1992), no large-scale statewide studies have been undertaken to compare the efficacy of prevention curricula. The present study compared prevention curricula for the levels of effectiveness in preventing certain behaviors, influencing attitudes, and increasing

knowledge toward substance use. The results of this research contribute to the literature on school-based prevention curricula.

### **Research Questions**

**Research Question 1:** When reviewed cross-sectionally, are there changes in behavior, attitudes, and knowledge toward substance use of students in grades seven through twelve between 1990 and 1993 in North Dakota?

**Research Question 2:** Do elementary prevention curricula (such as Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing) and junior high prevention curricula (such as Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence) have different levels of effectiveness on behaviors, attitudes, and knowledge level of North Dakota junior and senior high school students between 1990 and 1993?

**Research Question 3:** Do elementary prevention curricula (such as Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing) and junior high prevention curricula (such as Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence) have different levels of effectiveness on behaviors, attitudes, and knowledge level of North Dakota junior and senior high school students?

### Definitions

For the purpose of this study, the following terms are defined:

Adolescence. Stage of development that includes individuals from 12 to 18 years old (Ellis & Nowlis, 1994, p. 309).

Attitude. The way individuals feel toward something or someone over a period of time (Wilson & Kneisl, 1983).

Behavior. Any human activity that is either mental or physical. Some behavior can be observed, but other behavior can only be implied (Wilson & Kneisl, 1983).

Curriculum. A series of planned events that is intended to have educational consequences for one or more students (Eisner, 1985).

Drug abuse. The frequent use of alcohol or other drugs (Hawkins, Catalano, & Miller, 1992).

Drug misuse. "The act of employing a drug in an incorrect way to achieve its created purpose" (Chunko, 1976, p. 348).

Drug use. "The act of employing a drug for the purpose and in the manner for which it was created or dispensed" (Chunko, 1976, p. 348).

Gateway theory. The taking of a drug which leads to an inclination to use stronger drugs (Johnson et al., 1990).

Incidence rates. A measure of all new cases arising in a population at risk during a defined period of time, usually one year (Valanis, 1986, p. 66).

Junior high students. Students who are in grades seven through nine in North Dakota schools.

Knowledge. The recall of universals or specifics, of processes or methods, of structures, or of patterns. Knowledge level of the cognitive taxonomy describes learner activities that deal with memory recollection (Popham, 1993).

Polydrug use. "The use of two or more mood-altering substances in combination or in sequence to produce varying effects" (Wright, 1985, p. 853).

Prevalence rates. A measure of the existing number of cases present in a population at a given time (Valanis, 1986, p. 68).

Problem behavior. Behavior that is socially defined as a problem, a source of concern, or as undesirable by the norms of conventional society and institutions of adult authority; its occurrence usually elicits some kind of control response (Jessor & Jessor, 1977).

Senior high students. Students who are in grades 10 through 12 in North Dakota schools.

### Assumptions

The basic assumptions of this study are as follows:

1. The terminology used in the questions on the survey was understood by the adolescents.
2. The participants in the study were truthful in their responses.
3. It is possible to measure accurately drug use, smoking experience, alcohol consumption, and other chemical use through the survey method.
4. Preventive curricula are implemented as described or intended by their creators.

### **Delimitations of the Study**

The following delimitations were implemented for the purposes of this study:

1. The adolescent population was restricted to students who were in grades 7-12 in North Dakota high schools during the academic years of 1990 and 1993.
2. This study was limited to student responses on the North Dakota Youth Alcohol and Drug Survey developed by members of the North Dakota Department of Human Services and the Department of Public Instruction.
3. This study was limited to the self-reported behaviors, attitudes, and knowledge of adolescents enrolled/attending North Dakota high schools.
4. This study focuses on the preventive curricula used in North Dakota schools.
5. This study includes only usable scanning sheets to protect against exaggerated answers.
6. This is a cross-sectional, ex post facto research study, not longitudinal.



## **CHAPTER II**

### **LITERATURE REVIEW**

The present study was designed to assess whether there had been a change in the behaviors, attitudes, and knowledge related to substance use from 1990 to 1993 in 7th- through 12th-grade students in North Dakota. The second purpose was to investigate the relationships between elementary and junior high school-based prevention programs and changes in self-reported behaviors, attitudes, and knowledge related to the use of substances in junior and senior high students in North Dakota. The third purpose was to compare the elementary and junior high prevention programs for changes in self-reported behaviors, attitudes, and knowledge related to the use of substances in junior and senior high students in North Dakota. Review of the literature relevant to adolescent substance use and school-based prevention programs is divided into review of the national and state prevalence of substance use by adolescents; health risks related to substance abuse; changes in adolescent behaviors, attitudes, and knowledge; and the Drug-Free Schools program.

Illicit drug use by children and adolescents increased substantially during the late 1960s and early 1970s. Dealers peddled drugs to children as young as eight years old; exposure to such substances influenced every class of society; and no racial or ethnic group was exempt. The presence of substances was

everywhere: in the streets, schools, homes, and playgrounds, as well as on television and in the lyrics of music (Haggerty & Zimering, 1972).

Currently, the use of various substances by adolescents continues to be influenced through such means as parental use, peer use, and various methods of advertising which broadcast the exhilaration of being high on alcohol, relaxed on tranquilizers, or becoming slimmer by using diet pills. The settings of many programs and movies on television frequently revolve around cocktail lounges, bars, or homes which display the use of alcohol (Sheppard, 1984). In the media, public personalities such as sports heroes, entertainers, and political figures are presented as known abusers. For example, some sports figures model substance use by using drugs before the game for extra energy, during the game for pain relief, or after the game to celebrate (Sheppard, 1984). Cigarette smoking is promoted through the use of the Marlboro Man and the Virginia Slim woman as ideal models for young people (Newcomb & Bentler, 1989).

The United States continues to be a substance-using culture. Many individuals use substances such as coffee or tea to wake up in the morning, smoke cigarettes to get through the stresses of the day, and/or consume alcohol to relax in the evening. The use of licit drugs continues to be presented in the media as the remedy for problems such as stress, headaches, depression, or physical illness (Newcomb & Bentler, 1989). Young children continue to be conditioned through television and printed media that for every pain or discomfort there is a chemical cure (Barun & Bashe, 1988). At some point in their young lives, adolescents must

sort through the images and messages presented in the media regarding licit and illicit drugs to make conscious decisions about their use (Newcomb & Bentler, 1989).

Although there have been steady declines in drug use since the early 1980s, the United States continues to have the highest rates of use among industrialized nations (Newcomb & Bentler, 1989). Students continue to abuse alcohol, cigarettes, marijuana, and other illicit drugs.

### **Substance Use by Adolescents**

The use of illicit chemicals is illegal for everyone, although such drugs as alcohol and cigarettes are legal for adults. To prevent adolescents from using substances, all states have raised the legal drinking age to 21 years and, in most states, the sale of tobacco to minors is forbidden (Research Application Division, 1988). Although adolescents continue to use a variety of substances, the trend of illicit drug use had been on the decline until recently. In 1975, 45% of senior high school students admitted using illicit drugs such as marijuana, hallucinogens, cocaine, heroin, or medications not prescribed by a doctor. During 1978 and 1979, 54% of senior students reported using at least one illicit substance during the previous year. Then, over the next few years, the use of these drugs declined until 1985 when there was a slight pause before the decrease began again. By 1992, illicit drug use in a sample of 15,800 seniors reportedly had fallen to 27%. Then in 1993, senior student use of these substances increased abruptly to 31% (Johnson et al., 1994).

### **National Prevalence of Adolescent Substance Use**

Since 1975, Johnson et al. (1994) conducted yearly large-scale epidemiological studies which provide data about the prevalence and patterns of drug use, the demographics, and specific psychosocial characteristics of drug users. The "Monitoring the Future" project at the University of Michigan's Institute for Social Research published annual reports of adolescent substance use from 1975 to 1994. National trends in prevalence from 1975 to 1993 for senior high school students are reviewed in this section (Johnson et al., 1994). The three substances used by high school students which are analyzed include cigarettes, alcohol, and marijuana.

**Cigarettes.** Since the study began in 1975, cigarettes continue to be used on a daily basis by high school students. Peak smoking rates of senior high students occurred during the years of 1976 and 1977 and then began to decline. The 30-day prevalence decreased from 38% in the class of 1977 to 29% in 1981. The descent halted in 1982 and 1983; then in 1984 a slight decline resumed, but statistics stabilized until 1988 when there was again a slight decrease to 28.7%. Throughout the years, there has been a lack of any noteworthy decrease in smoking rates. In 1993, the 30-day prevalence rate was 29.9% (Johnson et al., 1994).

**Alcohol.** The annual prevalence of alcohol use of high school seniors rose steadily from 85% in 1975 to 88% in 1979, where it peaked. During the interval between 1979 and 1985, the annual prevalence declined from 88% to 86%. The

rates stabilized from 1985 to 1987 and then continued to decline until the prevalence was 76.0% in 1993 (Johnson et al., 1994).

**Marijuana.** The use of marijuana peaked during the years of 1978 and 1979. Usage started to decline in 1980 and has continued to remain stable or decline each year. In 1992, 22% of the high school seniors used marijuana as compared to 51% in 1979. Then in 1993 there was an abrupt increase in the annual use to 26% (Johnson et al., 1994).

#### **State Prevalence of Adolescent Substance Use**

The North Dakota Department of Human Services and North Dakota Department of Public Instruction at Bismarck, North Dakota, conducted statewide Youth Alcohol and Drug Surveys during the years 1980, 1982, 1986, 1990, and 1993. The studies focused on the knowledge, substance use, and attitudes of junior and senior high school students. The statewide trends in prevalence from 1980 to 1993 for senior high students are reviewed in this section.

**Cigarettes.** During the years 1982 to 1986, there was an increase in cigarette smoking from 17.5% to 19.4%. Over the next four-year period, there was a slight decline to 18.7% in 1990. However by 1993, the number of senior high school students who smoked had increased to 22.3% (Landry, 1994).

**Alcohol.** The peak year for alcohol consumption was 1980, at 76.7% for senior high school students. The use of alcohol then declined to 71.3% in 1982, only to increase to 73.8% in 1986. Since then, a steady decrease in alcohol use

has been noted through the years. In 1990, 61.7% of senior high school students used alcohol compared with 55.7% in 1993 (Landry, 1994).

**Marijuana.** The regular smoking of marijuana by senior high students increased from 3.3% in 1990 to 5.4% in 1993 (Landry, 1994).

### **Health Risks of Substance Use**

The prevalence of adolescent substance use with risk-taking behaviors is a major public health problem in the United States. In 1983, the costs of alcohol problems and dependency for individuals in America were estimated to be over \$117 billion, in which almost \$71 billion of the costs were attributed to reduced productivity or unemployment. Health care costs were another \$15 billion (National Institute on Alcohol Abuse and Alcoholism, 1987). Economic costs for drug problems were estimated at \$44 billion (Rice, Kelman, & Dunmeyer, 1990). Due to individual health risks and the enormous costs to society, educators and individuals in the public schools need to be aware of current and long-term consequences of adolescent substance use. In addition, the combined effects of various attitudinal, behavioral, and demographic variables are highly related to the self-reported alcohol use behaviors of adolescents (Bechtel & Swisher, 1992).

Substance abuse, which includes alcohol, cigarettes, and marijuana use, continues to be associated with major health and behavioral risks. Alcohol is the first drug of choice for adolescents in the United States (Johnson, O'Malley & Bachman, 1987; Newcomb & Bentler, 1986). Though the legal drinking age for alcohol is 21 and it is illegal for adolescents to use, many students drink before

they graduate from high school. When adolescents misuse alcohol, they are in danger of increased accidents, suicides and homicides, family disruption, poor school and job performance, and eventually chronic disease if continual abuse develops (Shope, Dielman, Butchart, Campanelli, & Kloska, 1992). Each year many adolescents are seriously injured or permanently disabled in motor vehicle crashes. In this age group, alcohol-related traffic crashes are the leading causes of spinal cord injuries and death (U.S. Department of Health and Human Services, 1990). Premature morbidity or mortality may be due to acute and chronic health problems.

Cigarette smoking remains popular among the adolescent population even though it has been linked to lung cancer since the 1950s (Wynder, 1980). The use of tobacco is the single most preventable cause of disease or death, yet it is responsible for one of every six deaths in the United States. Smoking is a risk factor for cardiac disease; chronic bronchitis and emphysema; cancers of the lung, larynx, pharynx, oral cavity, esophagus, pancreas, and bladder; and other problems such as respiratory infections or stomach ulcers (Office on Smoking and Health, 1989).

Marijuana is the major illicit drug used by our nation's adolescents (Thorne & DeBlassie, 1985) even though it has been recognized as a component in accidents and acute respiratory disease (Hansen, Johnson, et al., 1988). It seems the majority of the effects associated with marijuana use are more acute than chronic and that the longer-term effects are reversible when use of the drug is

terminated (Maisto, Galizio, & Conner, 1991). However, when adolescents believe marijuana has low health risks, then there is an increase in the tendency to use this substance (Berdiansky, 1991). In a survey of 180 junior high students, a number of the adolescents did not believe that marijuana stayed in the body for more than 24 hours. This may suggest that if adolescents viewed marijuana use as pleasurable, they were less likely to accept the health risks (Lignell & Davidhizar, 1991). In addition, there is limited documentation regarding its contribution to cancer and chronic respiratory disease, but it is believed that heavy smoking of marijuana may be one of the main factors involved with lung cancer (Hansen, Johnson, et al., 1988).

Polydrug use is another health and safety concern. Adults usually tend to stay faithful to one or two substances, but adolescents are willing to try or use anything that is available to them (Martin et al., 1993; Schaefer, 1987). Frequently, it is difficult for professional individuals to recognize the effects of the various drugs and duration of use because teenagers utilize many different types of substances. Also, the chemicals are illegal so adolescents purchase them on the street, and they are never sure about the purity of the drugs (Schaefer, 1987).

Some researchers believe in the concept of gateway drugs leading to further drug use, but this theory remains controversial. Tobacco, alcohol, and marijuana are considered gateway drugs to further substance utilization (Eckhardt et al., 1994; Torabi et al., 1993), and nicotine in cigarettes is considered the number one gateway substance to illegal chemical use (Peck, Acott, Richard, Hill,



& Schuster, 1993). There is a strong association between cigarette smoking and illicit drug use among high school seniors. Adolescents who smoke daily report a much higher utilization of illicit drugs than nonsmokers (Johnson, O'Malley, & Bachman, 1987). Those who smoked a pack of cigarettes per day were three times as likely to drink alcohol, seven times more likely to use smokeless tobacco, and 10-30 times more likely to use illicit drugs than adolescents who did not smoke (Torabi et al., 1993).

Adolescents are vulnerable to substances that researchers consider are gateway drugs but frequently the dangers of alcohol and marijuana are deemphasized in prevention programs. Instead, educational information focuses on teaching the lethal effects of the hard drugs such as LSD, cocaine, or PCP. Also, teaching the long-term consequences of gateway substances, or their risks to society, may not be as useful as teaching the immediate effects (Berdiansky, 1991).

Public concern regarding adolescent substance use has renewed because the physical and psychological consequences can be irreversible and lifelong. Normal adolescent development has the potential to be impaired because, by using substances, adolescents do not learn how to develop healthy coping strategies that are a part of growing up (Anderson, 1988a). The psychological issues which result from adolescent substance abuse affect not only the individual but everyone around them, including family members, peers, and teachers. The behaviors, attitudes, and knowledge of adolescents contribute to the atmosphere that enables substance abuse problems to develop or worsen (Anderson, 1988a).

### **Changes in Behaviors, Attitudes, and Knowledge**

Behaviors, attitudes, and knowledge of adolescents are influenced by society and the people near them. Substance use is a learned behavior by young children (Peck et al., 1993). The most formative years of children's lives are the first six years when they develop attitudes and behaviors which can last a lifetime. It is during this period that children learn through observation and imitation from the people around them, such as their parents, grandparents, and peers. They begin to form attitudes and behavioral patterns that will be the basis for their actions and feelings throughout their life (Haggerty & Zimering, 1972).

The transitional period from childhood to adulthood can be a turbulent period for adolescents. It is a time of experimentation, exploration, and curiosity for them, so adolescents begin to move outside their family and begin to rely more on themselves and their peers (Bangert-Drowns, 1988). Some adolescents may seek out their peers because they receive emotional support that is not provided by inattentive or unconcerned parents (Wordarski, 1990). These adolescents also engage in problem behaviors such as sexual intercourse to meet human love and belonging needs that are not met in their homes (Lohrmann & Fors, 1986).

In a study of 2,184 adolescents between the ages of 12 and 18, there was higher substance use in families where the children perceived a lack of parental love and increased parental control (Pandina & Schuela, 1985). Adolescents who had negative relationships with their parents and a low degree of supportive

interaction with them were more likely to be associated with drug abuse.

Adolescents are more prone to abuse drugs when they come from families where there is a communication gap between parents and children, and where parents use either an authoritarian or laissez-faire style of discipline (Jurich, Polson, Jurich, & Bates, 1985).

### **Behaviors**

Adolescents may view their experimentation with substances as part of the normal rites of passage into adulthood (Botvin et al., 1990). In our society, adolescent substance use is viewed as a natural process, and many adolescents believe they may be looked at as deviant if they have not tried alcohol, cigarettes, or marijuana by the time they finish high school (Newcomb & Bentler, 1989). For many, the use of various substances is limited to a brief period of experimentation. For some teenagers, however, exploration with such chemicals as tobacco, alcohol, or other substances can lead to psychological or physical dependence (Botvin et al., 1990). If these individuals continue to abuse substances into adulthood, they may develop physical, psychological, financial, legal, and interpersonal problems (Newcomb & Bentler, 1988b).

A reliable predictor of any future behavior consists of reviewing past behaviors, especially when applicable to substance use. If adolescents have previously used substances, then it is likely this behavior may be repeated and even be predictive of subsequent use of more serious drugs (Newcomb & Bentler, 1989; Sheppard, 1984). Also, the people adolescents spend time with, along with

the role models they choose, affect their substance use behaviors (Napier & Goe, 1984). Creath, Wright, and Wisniewski (1992) report that 49% of the adolescents surveyed indicated the primary reason they tried smokeless tobacco was due to the influence of friends; 41% indicated curiosity. The only other consequential factor which influenced the initiation of use was family utilization (9.2%).

Parental attitudes toward drug use also have been shown to be important determinants of children's behaviors. Children learn the reasons for or against various patterns of behavior through nonverbal and verbal reinforcement of their parents. Children observe how medicine and drugs are used by members of the family. If parents use drugs to relax, then children may develop attitudes that drugs are not harmful and may be the only way to relieve tension or handle feelings that are uncomfortable (Haggerty & Zimering, 1972).

Adolescents drink for a variety of reasons which may include seeking pleasure, attempting to relax, eluding pain, or to be sociable (Lignell & Davidhizar, 1991). Yet, the misuse of alcohol is known to cause a number of personal and social problems for them. Teenagers who misuse substances have a higher vulnerability to accidents, injuries, and a variety of dangerous behaviors (Bukstein, Brent, & Kaminer, 1989). Alcohol-related motor vehicle accidents are the leading cause of death for adolescents aged 14-24 years, and elevated alcohol levels are frequently found in victims of suicide or homicide (American Academy of Pediatrics Committee on Adolescence, 1987). Though the risks of drinking and driving are well publicized in the media, teenagers continue to either drive a

vehicle while under the influence or ride with someone who has recently been drinking. In a study of Boston area teenagers, half the subjects admitted being passengers in a car during the previous year when the driver had been drinking a short time earlier. Among subjects who were drivers, 14% confessed to driving a car shortly after or while consuming alcohol (Wechsler et al., 1984). Newman, Anderson, and Farrell (1992) studied two groups of ninth grade students in a year-long prevention program based on role theory and educational immunization. The experimental group consisted of 51 classes in five junior high schools where the control group contained 36 junior high classes in four different schools. No significant differences were noted between the control and experimental group in the areas of drinking or drinking and driving. However, one year after the program, there were significantly fewer students in the experimental group who reported riding with another individual who had been drinking. The percentage of high school seniors in North Dakota, who had driven a car after drinking decreased from 57.7% in 1990 to 51.1% in 1993, while the percentage of students who admitted to riding in a car after the driver had been consuming alcohol decreased from 76.5% in 1990 to 67.7% in 1993 (Landry, 1994).

Student use of alcohol and drugs expands into the school campus and classroom settings. Adolescents' knowledge of drug availability on the school campus increased from approximately 49% to 70% between grammar school and high school (Fournet, Estes, Martin, Robertson, & McCrary, 1990). Many adolescents admit using alcohol or drugs before, during, or after school. They use

drugs before and during school, whereas they will use both alcohol and drugs after school (Moskowitz & Jones, 1988). The use of substances can lead to problems in school. Between 2.3% and 7.7% admit having been in trouble at school because of alcohol or drugs (Fournet et al., 1990). According to the 1993 Alcohol and Drug Survey, senior high school students in North Dakota indicated 7.8% had difficulties either with teachers or the principal during the past year because of drinking; this included 13.9% of the misusers and 5.5% of the users (Landry, 1994). The misuse of alcohol by adolescents continues to create problems at events such as high school dances or football games (Moskowitz & Jones, 1988).

Adolescents who are heavy users of alcohol have increased activities such as going out, dating, attending movies, partying, searching for jobs, and working part-time. Negative consequences encountered by these adolescents include such things as lower grades, less enjoyment of school, or negative relationships with teachers (Pendorf, 1992). Adolescent behaviors such as getting into trouble at school, having problems with the police, causing an accident, or starting a fight when either intoxicated or high, are indicative of substance abuse. Eventually adolescent substance abuse can be associated with problem behaviors such as delinquency, precocious sexual behavior, deviant attitudes, or dropping out of school (Newcomb & Bentler, 1989). Adolescents who drink heavily are more likely to experience problem behaviors which are related to alcohol use (Hansen & Graham, 1991) and also are more likely to use alcohol in high risk situations such as driving after drinking (Hansen, 1993).

Adolescents who do not use substances report having better health, better social relationships, and a happier state of mind. They describe a happier childhood and have a lower incidence of substance use among their parents (Marston, Jacobs, Singer, Widaman, & Little, 1988). High school students who are nonusers report involvement with extracurricular activities and spending an increased amount of time with their family instead of peers (Shilts, 1991).

Adolescents who use a combination of drugs are seeking either relief or pleasure from the stressors of life. In a recent study by Wright (1985), relief was sought by 25% of the adolescents who had suicidal thoughts, 18% reported having feelings of rejection, and 13% had been abused by family members. On the other hand, 60% of the polydrug abusers appeared to be pleasure seekers, and they were not concerned with the consequences of their behavior. These adolescents viewed themselves as lazy or bored (Wright, 1985), and they believed their substance use was a way of relieving their boredom. It is difficult to reach these students through a school prevention program because they do not acknowledge their substance use as a problem; instead they associate it with the boredom they feel (Wodarski, 1990).

### **Attitudes**

Although there are many reasons why adolescents use substances, a positive attitude toward chemicals is usually indicative of potential use (For & Rojek, 1983; Moore, Moore, & Hauck, 1982). Attitudes of teenagers toward drug use show a consistent relationship with their use of substances. Permissive

attitudes and frequent drug use were more common among adolescents who used substances than the nonusers (Fejer & Smart, 1973).

Many researchers report adolescent substance use is influenced by the behaviors and attitudes of their family and peer group. A link has been established between parental alcohol, cigarette, and drug use with substance use by adolescents (Fawzy, Coobs, & Gerber, 1983; Halebsky, 1987; Huba, Wingard, & Bentler, 1979; Jessor & Jessor, 1977; Johnson, Shontz, & Locke, 1984). Attitudes parents have toward substance use have been shown to be determinants of their children's substance-using behaviors. Parents act as role models through verbal and nonverbal reinforcement of certain attitudes and behaviors, and the children learn the reasons for and against certain substance-using behaviors (Johnson & Pandina, 1991). If parents have permissive views of substance use, then adolescents are more likely to use substances (Halebsky, 1987; McDermott, 1984).

To study the relationships between psychological characteristics and substance use, Shedler and Block (1990) examined 101 eighteen year olds who had been inducted into the study at three years of age. These students were assessed throughout the 15-year period with a variety of psychological tests. When they were 18 years old, the adolescents were interviewed by clinicians who were unaware of their psychological assessment outcomes. The students were separated into three groups based on their reported drug use. The abstainers never tried drugs. Experimenters had not used marijuana more than once a



month and they had not tried any other drug, whereas frequent users reported using marijuana once a week or more and they had tried at least one other drug. Significant differences were found in the personality characteristics of each group which were apparent from the initial assessments taken during early childhood and in the quality of parenting. Adolescents who had experimented with some drugs were found to be the best adjusted at 18 years of age. The adolescents who used drugs frequently were maladjusted, and displayed signs of interpersonal alienation, poor impulse control, and emotional distress. Adolescents in the abstainer group were described as being tense, overcontrolled, emotionally constricted, and lacking in interpersonal skills (Shedler & Block, 1990).

The psychological differences between the frequent drug users, experimenters, and abstainers could be tracked to their early years of childhood, and the quality of parenting these adolescents received. In the parent-child relationship, the mothers of the abstainers were described as unresponsive, cold, critical, and rejecting which was very similar to the description of the frequent users' mothers. The researchers speculated the reason there is a difference in substance use between the abstainers and frequent users may be the influence of the fathers. Adolescents may have internalized their fathers' attitudes and then respond to their own impulses in ways that parallel their fathers' attitudes (Shedler & Block, 1990).

Substance utilization of peers is another indicator of use because adolescents want to be associated with and fit into a group (Keefe, 1994; Sarvela

& McClendon, 1988). As use among their peers increases, the pressure to use substances also increases to conform to their ideals (Lignell & Davidhizar, 1991; Dinges & Oetting, 1993).

Peers do not need to use direct pressure to influence each other. Instead, if adolescents place a high enough value on being members of certain groups, then the norms of these groups can exert pressure for the individuals to conform (Keefe, 1994). Due to the increased importance of peer approval, they can become highly susceptible to peer conformity. As adolescents spend considerably more time with their friends, peer pressure increases to equal, and finally prevail over adult influence; and if adolescents do not have firm attitudes, then those attitudes can be easily altered (Pisano & Rooney, 1988). Parental influences may remain strong for long-term goals, but peers may influence short-term behavior and attitudes toward such issues as substance use (Sheppard, 1989).

The use of substances such as tobacco and alcohol increases with the age and grade level of children. Students in the upper elementary grades tend to have favorable attitudes toward the use of tobacco and alcohol. Children in the fourth through sixth grades have exhibited changes in their attitudes, increased their receptiveness to peers, and actually used alcohol between fifth and sixth grade (Pisano & Rooney, 1988). Also, the number of children who smoked increased sixfold between the sixth and ninth grades (Chen & Winder, 1986). There appears to be a progressive pattern related to the adolescent misuse of alcohol. High school seniors consumed more alcohol than freshman because they preferred

to be with friends who drink (Brannock, Schandler, & Oncley, 1990). As students grow older, a larger number consume alcohol and usually drink to the point of intoxication (Hansen, 1993). Since the usage of substances increases with grade level, students may face an increased number of problems in their later school years. Also, the earlier adolescents begin to use substances, the longer they are exposed to the health risks and there is an increased possibility their use will turn into substance abuse (Bell, Ellickson, & Harrison, 1993).

In a study of 3,348 junior and senior high school students, between 4% and 14% disclosed that they had recently experienced such negative consequences as conduct problems, personal problems, social problems, or academic problems related to their substance use. Consequences increased with age, so there is an elevation of self-reported negative consequences between the eighth and ninth grade (Holcomb, Sarvela, Ritzel, Sliepcevich, & Jellen, 1990). Many adolescents deny getting into trouble with teachers or encountering problems due to their alcohol or drug intake, but other negative consequences such as absenteeism or increased dropout rates were noted (Moskowitz & Jones, 1988).

The most powerful influence on adolescent substance use is personal nonconformity or socially deviant attitudes. Substance use develops because adolescents are disappointed with traditional values and then develop deviant attitudes (Newcomb & Bentler, 1988a). According to the problem-behavior theory suggested by Jessor and Jessor (1977), teenagers develop deviance-prone attitudes because family problems create an environment for children that is not

grounded in traditional social rituals. These nontraditional attitudes are then related to types of problem behaviors which include alcohol abuse, drug abuse, delinquent activities, and precocious sexual involvement (Donovan & Jessor, 1985).

The attitudes of individuals develop over time and they are reinforced by the experiences students have with their parents, the media, and peers. Consequently, short-term prevention program may be unable to effect any change in the attitudes of adolescents toward substance use. Besides increasing the length of the prevention program, educators may need to use a variety of media in order to make a change which will be long lasting (Lignell & Davidhizar, 1991).

Substance use among adolescents should not be treated as an isolated phenomenon. The development of effective preventive programs necessitates a comprehensive understanding of behaviors, attitudes, and knowledge which lead to adolescent substance use. The same adolescent behavior regarding substance use may have different causes among various demographic groups or populations because of their unique traditions, culture, and expectations from life (Maddahian, Newcomb, & Bentler, 1988). The factors which cause one group of adolescents to engage in illicit substance use may not be sufficient or important for another group (Maddahian et al., 1988).

#### Knowledge Level

According to Eiseman (1974), information becomes knowledge when it is synthesized and internalized by children to modify their existing behavior. Giving

adolescents information about the various substances increases their knowledge level. However, it is only one factor that influences their decisions to experiment with substances, use them regularly, or to increase the amount or frequency of use (Pickens, 1985). In the past, increasing adolescents' knowledge level has had little influence on their behavioral outcome, and at times it may have increased the use of substances (Newcomb & Bentler, 1989).

Knowledge and attitudes regarding substance usage appear to be associated because attitudes of adolescents may be affected by the information to which they are exposed in the schools (Barnea, Teichman, & Rahav, 1992). The more permissive the adolescent's attitudes, the more he or she knew about the various substances. The knowledge level of students also increased with grade level (Landry, 1994), and the higher grades tended to have the more permissive attitudes (Fejer & Smart, 1973).

### **History of Substance Prevention**

In the mid 1960s, there was an increasing awareness and concern about the level of substance use among children and adolescents. By the late 1960s, adolescent substance use was considered a major epidemic because a large number of adolescents had begun to experiment with illicit drugs such as marijuana, PCP, and other psychoactive drugs (Adger, 1992). As a response, the area of substance education grew rapidly. Some of the programs attempted to prove factual information with the hope that by adequately informing adolescents, they would decide not to use drugs. Other prevention programs attempted to

produce negative attitudes toward the use of substances such strategies as the use of scare tactics or warnings of danger (Fejer & Smart, 1973). The prevention programs which involved only dissemination of information was quickly shown to be inadequate and new approaches were attempted (Adger, 1992)

Prevention programs in the early 1970s addressed the interpersonal and intrapersonal factors that influenced substance using behaviors among adolescents. The enthusiasm for prevention programs again increased because studies found correlations between substance use and attitudes, beliefs, values, and alienation. The basic assumption of these programs was that adolescents used substances because they did not think through their values or learned how to express their feelings (Adger, 1992). When these programs failed to deter adolescent substance use, there was considerable disillusionment with the prevention curricula that had been developed. Even though, a large amount of time, effort, and millions of dollars were spent on these programs, it appeared the substance prevention programs were ineffective (Randall & Wong, 1976).

The traditional prevention programs were unsuccessful in reducing substance use, so new and innovative programs have been developed to address the problem. There has been a renewed interest in prevention programs because the new curricula use life skills training and peer refusal techniques. The new curricula have been adapted and built upon some of the successes of the previous programs use in the 1960s and 1970s that only provided information or used the affective approach. Many of the new prevention programs have been strengthened

by a better understanding of the risk factors and the incorporation of community and family (Adger, 1992).

### **The Evolution of Prevention Programs**

Drug education has progressed through several evolutionary periods, but it has always had a place in the curriculum (Mathews, 1975). Though in the late 1950s and early 1960s minimal attention was paid to drug education, high school students were taught the basics about the sources, types of substances available, and their evils. Many teachers lacked subject knowledge and, with their overzealousness to prevent drug experimentation, they frequently provided misinformation (Wepner, 1979).

In the late 1960s, national recognition of substance abuse by adolescents began to emerge and the educational establishment responded with a plethora of bulletins, pamphlets, and teacher guides. Frequently the curricula taught by teachers remained unchanged, but some educators increased their knowledge level with various pamphlets (Wepner, 1979). However, as substance use in America continued to increase, parents became concerned about their children's use of recreational drugs. They did not understand why their children would become involved in such self-destructive behavior (Floyd & Lotsof, 1978). Due to the combination of national mass-media attention along with the desire for improvement by educators, there was a large increase in the number of inservice courses offered throughout the country (Wepner, 1979).

Drug education during this time attempted to modify the beliefs, attitudes, and values of adolescents regarding substances and their use. The ultimate goal of these educational programs was to influence students' behaviors so they would make wise choices (Mathews, 1975). Most of these drug education programs were school-based academic ones with curricula and delivery-style problems (Sorensen & Joffe, 1975). Besides the curricula problems, the teaching styles of formal drug education frequently alienated the students.

As the focus of drug education shifts, the trend is to emphasize people instead of drugs in the curricula (Antonow, Eicke, & Mathews, 1976). During the middle 1970s, the theme switched from the presentation of traditional drug information to the "affective" or "humanistic approach." This strategy focused on the development of individual self-esteem and general life skills that were often irrelevant to substance use (Kim et al., 1989).

The theme shifted again in the late 1970s and early 1980s to the "social influences" approach in which the main focus was on social influences that promote substance use. Specific programs were designed so adolescents could be trained to use various coping skills which would then allow increased personal and social competence (Kim et al., 1989).

### **Drug-Free Schools Program**

The Elementary and Secondary Education Act (ESEA) was passed in 1965 and offered federal support to schools in low-income communities. Throughout the years, Congress amended and expanded the act seven times. When the ESEA



was evaluated, the results showed the funds were spread very thinly and were not meeting the needs (Department of Education, 1993).

In October of 1986, President Reagan signed into law P.L. 99-570, Drug-Free Schools and Communities Act of 1986, which made funds available to State Departments of Education to implement alcohol and drug programming in the public schools (Palmer & Byrd, 1989). These funds are provided to governors, state and local educational agencies, institutions of higher education, and nonprofit organizations to generate and manage a range of drug and alcohol prevention programs (Department of Education, 1993).

On April 28, 1988 Public Law 100-297, the Hawkins-Stafford Elementary and Secondary School Improvement Amendments, was enacted. These amendments repealed Subtitle B of Title IV of the Anti-Drug Abuse Act of 1986 and reenacted the Drug-Free Schools and Communities Act as Title V of the Elementary and Secondary Education Act of 1965 (ESEA). Subsequently, on November 18, 1988, the Act was amended by P.L. 100-694, the Anti-Drug Abuse Act of 1988. The purposes of the Drug-Free Schools and Communities Act of 1988, Part B, are to establish, implement, and improve programs of drug abuse prevention, early intervention, rehabilitation referral, and education programs in elementary and secondary schools; and to support innovative, community-based programs of coordinated services for high-risk youth. (Office of Instructional Services, 1989, p. 8)

The 1989 P.L. Drug-Free Schools and Communities Act Amendments (P.L. 101-226) required state education agencies (SEAs) to provide an evaluation of the effectiveness of state and local drug and alcohol abuse education and prevention curricula (Brandon, 1992).

### **Drug Education Programs**

Educators, health professionals, and the public are just beginning to understand the scope and nature of the substance-abuse problem. Although there have been steady declines in substance use by adolescents since the 1980s (Newcomb & Bentler, 1989), it is unknown whether drug education has had a role in this decrease (Pruitt, 1993).

### **National Curricula**

Numerous national programs have been developed to prevent substance use. Although they may vary in many aspects, most of the prevention curricula rely on a variety of educational strategies which focus on either a single substance or polydrug use. The length of these programs can range from one class period to a complete course (Moskowitz, 1989).

Commercially available prevention curricula such as Project Alert, developed by the RAND Corporation (Ellickson & Bell, 1990), and Project DARE, generated by the Los Angeles Police Department and Los Angeles Unified School District (Marx & DeJong, 1988), have been made available for use in the public schools. Due to the availability of federal funding, various commercially available prevention curricula are widely used in the public schools. For instance, 64% of Wisconsin schools used purchased curricula (Fredisdorf, 1989). These drug education programs have been developed to assist educators in implementing interactive strategies to prevent substance abuse. Through the years, educators'

roles have evolved from the lecturer, who only provides information, to one of facilitator, who promotes student learning (Bosworth & Sailes, 1993).

Educational efforts to prevent substance abuse in the United States are mainly public education or school-based programs which have achieved only modest outcomes (Nathan, 1983). The curricula have been designed to dissuade experimentation along with regular adolescent use of various substances. Target periods for these preventive programs have been late childhood or early adolescence because this time has been assumed to be the first risk period for the onset of drug use. However, many prevention programs have met with little success in preventing adolescent substance use because they have focused on increasing knowledge or changing attitudes rather than on changing the behaviors (Tobler, 1986). The attitudes and behaviors of adolescents are difficult to change so prevention programs, especially those for alcohol use, may lead to attitudinal effects which are opposite to those intended by the program. School-based programs that are taught in late elementary or early in junior high and have multiple components such as the development of social skills and peer resistant training have been more successful in preventing the onset of substance use (Dielman, Shope, Butchart, & Campanelli, 1986; Hansen et al., 1988).

Many drug education programs emphasize the hazards of substance use. The physiological and psychological dangers along with the legal and social consequences of substance use are taught to the students. Since many of the national programs have been criticized regarding their approach to drug

education, some schools have incorporated drug education into another program such as health education (Berdiansky, 1991).

### **North Dakota Curricula**

Schools seem the most natural place for the implementation of prevention programs because most children spend the majority of their young life in the educational system. In addition, prevention programs that are aimed at prevention and early intervention can intervene with adolescent drug use and the influence of their peers (Wodarski, 1990). Adolescents are using substances at a much younger age so there is a need to evaluate the effectiveness of school-based drug curricula in relation to changes in behaviors, attitudes, and knowledge. The national curricula taught in North Dakota schools was divided into two categories, elementary and junior high. Elementary curricula consists of Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing. These curricula will be assessed for the impact they have on the behaviors, attitudes, and knowledge level of junior high students between 1990 and 1993.

#### **Discover**

Discover curriculum was developed for kindergarten through grade six and is published by the Educational Assessment Publishing Company in San Diego, California. Educators present three major concepts which are self-esteem building and development of coping skills; drug information; and relationship skills and decision making (Adams & Butler, 1989).

### DUSO

In 1970, Dinkmeyer developed DUSO-1 for kindergarten and first grade students and then DUSO-2 for children in grades three and four. Dinkmeyer and Dinkmeyer revised both programs in 1982 so they are now DUSO-1-R and DUSO-2-R. The curricula focuses on assisting children to understand their ways of thinking, behaviors, and feelings, so it is divided into three main sections which include developing understanding of self, developing understanding of others, and developing understanding of choice (Morse, Bockoven, & Harman, 1987).

### Me-Me

The Me-Me program was developed for kindergarten through grade six. A multidisciplinary approach is used to prevent substance abuse by improving each student's self-concept and teaching them to say no to drugs. Information on various substances is presented to students according to their grade and knowledge level. Children also learn who is qualified to give medication; the differences between prescription and over-the-counter medications; and the effects of alcohol, caffeine, and nicotine. Me-Me curricula is published by Me-Me, Inc. (Me-Me Brochure, 1975).

### Operation Aware

Operation Aware was developed for kindergarten through grade three. This curriculum focuses on self-awareness and encourages children to learn about themselves, accept themselves, acknowledge their strengths and weaknesses, and be able to relate to their surrounding. Most of the activities focus on the

students' relationships with their family and peers (Operation Aware, Inc. Brochure, 1989).

### **Positive Action**

Positive Action publishes the Positive Action curriculum which promotes self-concept for students in kindergarten through grade eight. The goals of this program are to promote total wellness, competency, and healthy life styles in individuals. Children develop personal responsibility and understanding along with positive social skills. Positive Action promotes self-assured individuals capable of imaginative problem solving (Positive Action Brochure, 1993).

### **Skills for Growing**

Skills for Growing is a comprehensive program designed to provide children in kindergarten through grade 12 the basic skills they will need for healthy growth and successful living. This curriculum was developed by a joint venture involving the National Association of Elementary School Principals, Lions Clubs International, and Quest International. The philosophy of this curriculum is based on the concept that educators focus less on negative behaviors and concentrate more on the positive attitudes, values, and behaviors of children. The focus of this curriculum is to assist students in developing character, citizenship, responsibility, and positive social skills. To meet its goals, the Skills for Growing curriculum has five interrelated components which include community support, positive school climate, classroom curriculum, parents as partners, and training and follow-up support (Keister, Graves, & Kinsley, 1988; Little, 1988).

Junior high curricula consists of Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Skills for Adolescence, Skills for Living, and Local Curriculum. These curricula will be investigated for the impact they have on the behaviors, attitudes, and knowledge of senior high students between 1990 and 1993.

### **Health Curriculum**

The health education curriculum is taught to most high school students. Topics covered by the course may include personal health appraisal; physical health; mental, social, and emotional health; emergency health services, human maturation; and use and misuse of chemicals. The health curriculum may integrate concepts from one or more national preventive curricula that are on the market.

### **Here's Looking at You 2000**

Roberts, Fitzmahon, and Associates developed the Here's Looking at You 2000 program which offers a comprehensive, multimedia approach to alcohol and drug education for kindergarten through grade twelve. Parents are also involved in this curriculum which promotes a clear "no use" message for all grades (Kim, McLeod, & Shantzis, 1993).

### **Learning to Live Drug Free**

The United States Department of Education developed the Learning to Live Drug Free curriculum for students in kindergarten through grade 12. The philosophy of this program is that most adolescents do not use drugs (Flatter &

McCormick, 1989). Through the enhancement of life skills, they will be discouraged from using drugs. Learning to Live Drug Free curriculum focuses on positive prevention messages. Students are taught that they should be proud they are taking part in healthy activities and not using drugs (Flatter & McCormick, 1989).

### **Local Curriculum**

To achieve a drug-free environment, some schools develop their own curricula to reduce student addiction to drugs or alcohol. Local curriculum may include integrated sections from one or more of the national curricula that are on the market.

### **Skills for Adolescence**

Quest National Center in Columbus, Ohio, designed the Skills for Adolescence curriculum for teenagers in grades six through eight. This program allows them the opportunity to interact with their peers while exploring the issues of adolescent life. Educators foster such skills in adolescents as responsibility, decision making, communication, self-confidence, and goal setting (Gerler, 1986).

### **Skills for Living**

Skills for Living curriculum was developed for students in grades 7 through 12 by the Quest National Center. The program was funded with major grants from numerous foundations including W. K. Kellogg Foundations. The goal of this program is to improve the quality of family life and promote positive mental health by helping adolescents and their parents develop the necessary skills for



effective living. Adolescents will develop competencies in self-discipline, responsibility, good judgment, and learning to get along with others (Scheer & Williams, 1979).

Other national preventive curricula such as Al-Co-Hol, Babes, Health Skills for Life, Ombudsman, Project Charlie, Project Self-Esteem, and Starting Early are implemented in only a small number of North Dakota schools so they are not included in this research.

When comparing substance preventive programs for their level of effectiveness in preventing the use of substances by adolescents, caution needs to be taken because not all of the curricula have the same focus or theoretical framework. All of the elementary curricula included in this study focus on the the concept of building children's self-esteem, although the Discover curriculum and Me-Me curriculum have a straight forward approach to addressing the issue of substance use. Students in these programs are taught about the various drugs, their effects, and consequences of their use. Preventive curricula consisting of Positive Action, Operation Aware, and Skills for Growing are aimed at the development of positive social behaviors and the character of the children.

In comparison of the junior high prevention curricula, Skills for Adolescence focuses on factors that are associated with adolescent alienation and ways it can be prevented. This program gives students a chance to interact with one another while exploring the issues of adolescent life. The parents are included in the teachings of this curriculum (Gerler, 1986).

Here's Looking at You, 2000 curriculum clearly promotes a "no use" message at all grade levels and the lessons focus on the risk factors of adolescent substance abuse. This curriculum has been developed so that it can be part of the broader school health curriculum. Parents are encouraged to participate in the teachings of this curriculum (Kim, McLeod, & Shantzis, 1993).

Skills for Living curriculum focuses on developing competency in self-discipline, responsibility, good judgement, and getting along with others. Adolescents are expected to develop skills which will make them successful not only in their classroom activities but also in their daily life outside of the classrooms. The parents are encouraged to become involved in the teaching of their children and there is leadership training for students to help each other establish and implement community service outreach (Scheer & Williams, 1979).

Learning to Live Drug Free curriculum focuses on skills that deter drug use. This curriculum also includes information about drugs, a background for teachers on the growth and development of children, and suggestions on how to work with parents and the community. Drug prevention messages can be infused into the general curriculum through a process by which teachers can provide information through a variety of subject matter. For instance, in an elementary math lesson, the teacher may present the cost to society when individuals use illegal drugs (Flatter & McCormick, 1989).

The Health Curriculum and Local Curriculum are developed by individuals school districts. The main focus or the theoretical framework is unknown.

### Summary

Alcohol is the first drug of choice for adolescents in the United States (Hansen et al., 1987). However, alcohol, along with tobacco and marijuana are considered gateway drugs to further substance utilization (Eckhardt et al., 1994; Torabi et al., 1993). There is a strong association between cigarette smoking and illicit drug use among high school seniors. Those who smoked a pack of cigarettes per day were three times as likely to drink alcohol, seven times more likely to use smokeless tobacco, and 10-30 times more likely to use illicit drugs than adolescents who did not smoke (Torabi et al., 1993).

This study is intended to assess if there are changes in the behaviors, attitudes, and knowledge of substance use from 1990 to 1993 in 7th- through 12th-grade students in North Dakota. Although there are many reasons why adolescents may use substances, a positive attitude toward chemicals is usually indicative of potential use (For & Rojek, 1983; Moore et al., 1982). Several researchers report adolescent substance use is influenced by the behaviors and attitudes of their family and peer group, although the most powerful influence on adolescent substance use is personal nonconformity or socially deviant attitudes. Substance use develops because adolescents are disappointed with traditional values and, as a result, develop deviant attitudes (Newcomb & Bentler, 1988a).

Schools seem the natural place for the implementation of prevention programs because most children spend the majority of their youth in the educational system. Because adolescents are using substances at a much younger

age, there is a need to evaluate the effectiveness of school-based drug curricula in relation to changes in behaviors, attitudes, and knowledge. The present study is an attempt to investigate the relationship between elementary and junior high school-based prevention curricula and the changes in self-reported behaviors, attitudes, and knowledge related to the use of substances in junior and senior high students in North Dakota between 1990 and 1993.

Educational efforts to prevent substance abuse in the United States are mainly public education or school-based programs which have achieved only modest outcomes (Nathan, 1983). This study will compare the elementary and junior high prevention programs for changes in self-reported behaviors, attitudes, and knowledge related to the use of substances in junior and senior high students in North Dakota between 1990 and 1993. In the past, many prevention programs have met with little success in preventing adolescent substance use because they have focused on increasing knowledge or changing attitudes rather than on changing the behaviors (Tobler, 1986). The attitudes and behaviors of adolescents are difficult to change so prevention programs, especially those for alcohol use, may lead to attitudinal effects which are opposite to those intended by the program.

## **CHAPTER III**

### **METHODOLOGY**

The primary purpose of this study was to compare prevention curricula on their levels of effectiveness in increasing knowledge about substance use and in preventing certain behaviors and attitudes. In addition, the study sought to identify if there had been a change in the behaviors, attitudes, and knowledge related to substance use from 1990 to 1993 in 7th- through 12th-grade students in North Dakota.

To accomplish the purpose for conducting this study, the procedures described in this chapter were implemented. First, there is a description of the study. Second, the development of 1990 and 1993 surveys are reviewed. Third, selection of the sample for the surveys are discussed. Fourth, procedures used in gathering the data and the validity of the students answers are discussed. Finally, the manner in which data were analyzed and presented is reported.

#### **Description of the Study**

This research is cross-sectional and ex post facto in which different groups of students in the 7th through 12th grades are studied simultaneously. Vogt (1993) defines an ex post facto research design as "any nonexperimental research design that takes place after the conditions to be studied have occurred." The

researcher attempts to determine the cause or reason for the existing differences in the behavior or status of groups of individuals (Gay, 1992).

The current study investigates whether there has been a change in the overall behaviors, attitudes, and knowledge relating to substance use of high school students in North Dakota from 1990 to 1993. Items related to these three areas on the questionnaires were included in the data analysis. Questions relating to substance use behaviors, attitudes, and knowledge on 1990 questionnaire were matched to the 1993 questionnaire to allow for comparisons. Secondly, this study investigates the relationship between school-based prevention programs and changes in self-reported behaviors, attitudes, and knowledge related to the use of substances in 7th- through 12th-grade students in North Dakota. Participating schools were required to report the substance prevention curriculum or curricula utilized in their institution to the Department of Public Instruction.

The 1990 and 1993 North Dakota Drug and Alcohol surveys were the research instruments used to measure the dependent variables of behaviors, attitudes, and knowledge level related to specific drug and alcohol usage. The independent variables were the preventive curricula taught in the North Dakota high schools during 1990 to 1993.

#### **Description of the Instrument**

The North Dakota Youth Alcohol and Drug Survey was developed by the North Dakota Department of Human Services and the North Dakota Department of Public Instruction at Bismarck, North Dakota (see Appendix A). The survey

focused on the behaviors, attitudes, and knowledge toward substance use of junior and senior high school students.

Surveys used in the 1990 and 1993 North Dakota Youth Alcohol and Drug Studies were modifications of instruments utilized in 1980, 1982, and 1986 studies. The 1980 study was a derivative of a research project completed during the fall of 1979 in grades 7 through 12 in the Bismarck Public School System.

The 1990 North Dakota Youth Alcohol and Drug Study instrument contained 119 multiple choice questions. Thirty-one questions in the 1990 survey were dropped from the 1993 instrument because of redundancy, and two questions dealing with smokeless tobacco and parental smoking were added to the 1993 instrument. The 1993 survey consisted of 90 multiple choice questions. Though specific questions have been added and removed throughout the years, the content of the questionnaires has remained essentially the same as the 1980 survey. Content areas included demographic characteristics of respondents, attitudinal characteristic of respondents, alcohol and drug use questions, availability and opportunity to obtain drugs, perceived environment related to behavior, consequences of using alcohol, and level of knowledge related to alcohol and drugs.

### **Sample**

In 1990 and 1993, all the schools in North Dakota with students in grades 7 through 12 were invited to participate in the North Dakota Youth Alcohol and Drug Survey by the State Director of Drug-Free Schools in the Department of

Public Instruction. In 1990, there were 278 potential school districts (50,370 students), and 234 indicated a desire to take part in the survey. Answer sheets were returned by 212 school districts (36,693 students, or 72.7%) to the Bureau of Educational Services and Applied Research at the University of North Dakota (Landry, 1990). Of the 251 potential school districts contacted in 1993 (55,836 students), four declined participation in the survey. Of the 247 remaining districts, 199 (30,616 students, or 55%) returned their answer sheets to the Bureau of Educational Services and Applied Research at the University of North Dakota (Landry, 1994).

#### **Data Collection**

The North Dakota Youth Alcohol and Drug Study was based on a statewide sample of 7th- through 12th-grade high school students in the state. Data in 1990 were obtained by administering a 119-item, nine-page questionnaire. The 1993 data were obtained by using a self-administered 90-item, four-page questionnaire. In each study, questionnaires were administered to students during regular school hours. Questionnaires were designed so students could complete them in one class period or less. To ensure anonymity, their names were not entered on the answer sheet, but a school code number was entered to identify each school district (Landry, 1990, 1994).

The truthfulness of self-reported measures on adolescent substance use is a major concern for researchers. First, the information is frequently retrospective making it subject to recall error (Bailey, Flewelling, & Rachal, 1992). Second,



some respondents may not be willing to disclose behaviors that have been socially defined as undesirable or illegal (Campanellia, Dielman, & Shope, 1987). Some researchers have implemented a "bogus pipeline" procedure in an attempt to increase the validity of self-reporting. This technique refers to a methodology in which individuals are informed their self-reports will be verified through a procedure such as a biochemical test, but in actuality no verification takes place (Campanellia et al., 1987). In many studies, adolescents' self-reports of substance use were not significantly affected by utilization of the bogus pipeline procedure (Campanellia et al., 1987; Martin & Newman, 1988; Werch, Gorman, Marty, Forbess, & Brown, 1987).

In this research study it was assumed that respondents answered truthfully. Efforts were made to identify exaggerators or respondents with inconsistent response patterns. Through computer analysis, the responses of students were checked for discrepancies in their answers. For example, if a student filled in the nonuser category for use of alcohol and then later, admitted using alcohol 1-6 times in the past 6 months during the previous year, the answer sheet would be omitted from the sample. In the 1993 survey, 47 response sheets were eliminated for obviously spurious or innocuous answers. Upon completion of the computer analysis of response patterns and omissions, another 483 response sheets were eliminated for illogical or random response patterns (Landry, 1994). Similar procedures were used in 1990, and 1,158 were excluded from the analysis (Landry, 1990).

Both questionnaires in 1990 and 1993 were administered to students during the months of April and May. Individuals from the Department of Public Instruction notified all school districts serving 7th- through 12th-grade high school students of the collection dates. The school districts were encouraged to take part in the study as their individual evaluation process by soliciting their participation as part of the statewide evaluation of the Drug Free Schools Program (Landry, 1990, 1994).

### **Data Analysis**

Dependent variables in this study were attitudes, behaviors, and knowledge related to drug usage. The year of the survey and the prevention curricula were the independent variables. Throughout the data analysis, the SPSS-X software was employed to test for the significant differences between the groups. Due to the large sample size, differences between the two groups were considered significant at the 0.001 probability level. The chi-square test was employed to indicate where significant differences occurred between the 1990 and 1993 junior high school students and the 1990 and 1993 senior high school students regarding the specific variables of the behaviors and attitudes toward substance use. A two-way analysis of variance (ANOVA) statistical procedure was used to assess if there were changes in the knowledge level regarding substance use of students in grades seven through twelve between 1990 and 1993.

The chi-square test was utilized to investigate the association between the behaviors and attitudes of junior high school students and the individual

curriculum of Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing. The same method of analysis was also used to test the relationship between the behaviors and attitudes of senior high school students and the individual curriculum of Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Other Curriculum, Skills for Adolescence, and Skills for Living. To compare each curricula to the knowledge level of the junior and senior high students, the t-test was utilized.

Chi-square test was employed to compare one prevention curriculum to other elementary or junior high curricula in relation to the behaviors and attitudes of junior or senior high students. Through the utilization of t-tests, each curriculum was compared to other elementary or junior high curricula to assess for changes in the knowledge level of junior and senior high school students.

The three research questions as presented in Chapter I are addressed throughout the divisions of Chapter IV. The data collected for the present study and the analysis described previously are presented in Chapter IV.

## **CHAPTER IV**

### **RESULTS**

The present study compared drug and alcohol prevention curricula for the levels of effectiveness in changing certain behaviors, influencing attitudes, and increasing the knowledge of junior and senior high students. When referring to substance use, the prevalence rate is the number of adolescents who admitted they used a substance at least once during the last year where as the incidence rate is the number of first time occurrences of substance use during the past year (Maisto, Galizio, & Connors, 1991). This chapter contains the following sections: a description of the sample; chi-square tests to analyze the behaviors and attitudes of junior and senior high students in relation to the curricula, and each curriculum to the others; two-way analysis of variance (ANOVA) to assess for changes in the knowledge; and t-tests to compare each curriculum to the total knowledge score and the other curricula. Due to the rounding of numbers or missing data, there may be a discrepancy in the totals of the tables throughout Chapter IV.

#### **Description of the Sample**

Original results for each year have been published by the North Dakota Department of Public Instruction. The target population for 1990 was 50,370 in grades 7-12 with 36,693 actually participating as compared to 1993 where the

target population was 55,836 in grades 7-12 with 30,616 actually participating (Landry, 1990, 1994).

Students' demographic information for 1990 and 1993 is presented in Table 1. Grade size in 1990 ranged from 5,365 students in the 12th grade to 7,082 in the 7th grade. In 1993, grade size ranged from 4,025 in the 12th grade to 5,550 in the 7th grade. Male students numbered 18,898 (51.6%) in 1990 and 15,584 (50.9%) in 1993. In comparison, the total number of female respondents was 15,584 (50.9%) in 1990 and 15,032 (49.1%) in 1993. In 1990, the sample consisted of Caucasian (91.6%), Black (0.9%), American Indian (5.4%), Asian (0.7%), Hispanic (0.6%), and other (0.8%). In 1993, the sample include Caucasian (91.3%), Black (1.0%), American Indian (5.2%), Asian (0.8%), Hispanic (0.8%), and other (0.8%).

### **Research Question I**

In this study, the research is presented in two parts for each research question. First, the junior high data on the behaviors, attitudes, and knowledge in relation to curricula are presented. Then the results from the senior high data follow.

Research question one asked: When reviewed cross-sectionally, are there changes in the behaviors, attitudes, and knowledge toward substance use of students in grades 7 through 12 between 1990 and 1993 in North Dakota?

Table 1

Demographic Information on Junior and Senior High School Students for 1990  
and 1993

	1990 Data		1993 Data	
<b>Grade</b>	(N = 36,693)		(N = 30,616)	
7th	7,082	19.3	5,550	18.1
8th	6,571	17.9	5,624	18.4
9th	6,086	6.6	5,407	17.7
10th	5,997	16.3	5,284	17.3
11th	5,592	15.2	4,726	15.4
12th	5,365	14.6	4,025	13.1
<b>Gender</b>	(N = 36,625)		(N = 30,616)	
Male	18,898	51.6	15,584	50.9
Female	17,727	48.4	15,032	49.1
<b>Ethnicity</b>	(N = 36,656)		(N = 30,574)	
Caucasian	33,515	91.6	27,918	91.3
Black	315	0.9	311	1.0
American Indian	1,972	5.4	1,605	5.2
Asian	266	0.7	243	0.8
Hispanic	288	0.6	249	0.8
Other	300	0.8	248	0.8

### Junior High Results

Behaviors analyzed in this study include the frequent use of cigarettes, alcohol, and marijuana; number of times high in past 6 months; problems with others because of substance use; drinking and driving; and peer drinking. To investigate if there are changes in the behaviors of junior and senior high students between 1990 and 1993, chi-square tests were conducted. A summary of these data is presented in Table 2. Respondents were asked to disclose how often they smoked cigarettes. Students who were classified as nonusers rarely smoked cigarettes. Misusers smoked cigarettes sporadically while the abusers used them daily. The percentage of nonusing junior high students increased from 58.6% to 60.3% between 1990 to 1993. However, the category of abusers also increased from 8.2% in 1990 to 9.1% in 1993.

Respondents were asked how often they drank alcohol or used marijuana. The classification of nonusers for alcohol and marijuana included rarely using substances. Misusers were categorized as students who sporadically used substances, and the abusers used substances weekly. There were no significant differences in the frequent use of alcohol or marijuana between 1990 and 1993 for junior high students.

Table 2

Percentage and Chi-square Values for the Substance-Using Behaviors of Junior High Students in 1990 and 1993

	Junior High Students		<i>X, df, P</i>
	1990 (N = 19,665)	1993 (N = 16,560)	
<b>Behaviors Prevalence</b>			
Smoking			
Nonuser	58.6%	32.12%	32.12
Misuser	33.2%	30.6%	df = 2
Abuser	8.2%	9.1%	p < .001
Alcohol			
Nonuser	59.3%	61.2%	12.61
Misuser	29.9%	28.5%	df = 2
Abuser	10.8%	10.3%	p = .002
Marijuana			
Nonuser	93.6%	94.1%	4.35
Misuser	3.9%	3.5%	df = 2
Abuser	2.5%	2.4%	p = .114
<b>Behaviors Incidence</b>			
Alcohol: Times drunk last 6 mos			
0	80.0%	79.7%	67.98
1-6	16.2%	14.8%	df = 2
7+	3.8%	5.5%	p < .001
Marijuana: Times high last 6 mos			
0	95.7%	95.0%	103.46
1-6	3.4%	2.7%	df = 2
7+	1.0%	2.3%	p < .001

(table continues)



	Junior High Students		<i>X</i> , <i>df</i> , <i>P</i>
	1990 ( <i>N</i> = 19,665)	1993 ( <i>N</i> = 16,560)	
<b>Trouble at school</b>			
0 times	94.7%	95.8%	22.78
1 time	2.5%	2.1%	<i>df</i> = 2
2+ times	2.8%	2.2%	<i>p</i> < .001
<b>Difficulty with friends</b>			
0 times	87.7%	90.4%	86.85
1 time	7.0%	4.8%	<i>df</i> = 2
2+ times	5.3%	4.7%	<i>p</i> < .001
<b>Trouble with the police</b>			
0 times	95.3%	96.0%	12.68
1 time	2.4%	2.0%	<i>df</i> = 2
2+ times	2.4%	2.0%	<i>p</i> = .002
<b>Drove a car after drinking</b>			
0 times	91.5%	91.4%	6.34
1 time	3.4%	3.1%	<i>df</i> = 2
2+ times	5.1%	5.6%	<i>p</i> = .042
<b>Rode in a car after the driver had been drinking</b>			
0 times	55.7%	59.1%	44.66
1 time	14.5%	12.8%	<i>df</i> = 2
2+ times	29.8%	28.1%	<i>p</i> < .001
<b>Close friends drink regularly</b>			
None	46.5%	45.0%	9.93
Some	43.3%	44.2%	<i>df</i> = 2
All	10.8%	10.8%	<i>p</i> = .007
<b>Friends have trouble in school</b>			
Never	72.1%	73.3%	12.96
Rarely	18.6%	17.2%	<i>df</i> = 2
Regularly	9.2%	9.5%	<i>p</i> = .002

Respondents were asked to identify the number of times they had been drunk on alcohol or high on marijuana during the past 6 months. The percentage of junior high students who admitted using alcohol 1-6 times during the past 6 months decreased from 16.2% in 1990 to 14.8% in 1993. However, the percentage who abused alcohol 7 or more times increased from 3.8% in 1990 to 5.5% in 1993.

There was a significant difference in the number of times junior high students had been high on marijuana in the last 6 months. The percentage of students who reported they had been high 1-6 times decreased from 3.4% in 1990 to 2.7% in 1993. However, there was an increase in the percentage of junior high students who reported being high at least 7 or more times in the last 6 months from 1.0% in 1990 to 2.3% in 1993.

Respondents were asked to disclose the number of times they had been in trouble with teachers, friends, or police because of their substance use. The percentage of junior high students who reported never having trouble in school because of drinking increased from 94.7% in 1990 to 95.8% in 1993. There was an increase from 87.7% in 1990 to 90.4% in 1993 of junior high students who reported never having problems with their friends because of their drinking. No significant difference was found in the percentage of junior high students who reported trouble with the police because of their drinking between 1990 and 1993.

Respondents were asked the number of times they had driven after drinking or else had ridden in a car after the driver had been drinking. There was no

significant difference found for junior high students who did not drive after drinking more than two drinks in 1990 and 1993. However, significant differences were found in junior high students who rode in cars after the driver had been drinking. The percentage of students who never accepted rides in a car after the driver had been drinking increased from 55.7% in 1990 to 59.1% in 1993.

Respondents were asked to reveal the number of close friends who used substances and if their friends had been in trouble because of their drinking. There were no significant differences in the number of junior high students who had friends that regularly used substances or had trouble in school between 1990 and 1993.

Attitudes analyzed in this study include the main reason junior high students think young people drink, their response to friends when they drink, their thoughts on drinking, and if they had been embarrassed by their behavior when drinking. Table 3 reveals the attitudes of junior high students toward substance use in 1990 and 1993.

Respondents were asked what they thought the main reason was for young people using substances. The category "Personal reasons" included their wanting to have pleasure, feel good, get high for excitement, solve personal problems, to relieve boredom, relax, or to satisfy curiosity. "Peer pressure" was classified as voluntarily taking part in the same activities as their friends. The "other" category was listed for students to choose if their reasons did not fit into the personal or peer categories.

Table 3

Junior High Students' Attitudes Toward Substance Use in 1990 and 1993

	Junior High Students		<i>X, df, P</i>
	1990 (N = 19,419)	1993 (N = 16,446)	
<b>Main reason</b>			
Personal	50.2%	46.9%	40.20
Peer pressure	44.4%	47.6%	df = 2
Other	5.5%	5.5%	p <.001
<b>Responses when friends are drinking</b>			
Avoid them	44.4%	45.0%	23.42
Convince not to drink	27.0%	28.1%	df = 3
Drink but dislike it	4.5%	3.6%	p <.001
Drink and like it	24.1%	23.2%	
<b>Thoughts about drinking</b>			
Illegal	58.1%	59.6%	17.70
Natural to experiment	27.5%	25.6%	df = 2
Unconcerned	14.3%	14.8%	p <.001
<b>Embarrassed by behavior</b>			
0 times	60.8%	63.0%	56.58
1 time	25.9%	26.2%	df = 2
2+ times	13.4%	10.8%	p <.001

The percentage of students who thought that young people drank for personal reasons decreased from 50.2% in 1990 to 46.9% in 1993. There was an increase in the percentage of students who thought young people drink because of peer pressure from 44.4% in 1990 to 47.6% in 1993.

Respondents were asked how they responded to their friends when they were drinking. The first category consists of students attempting to avoid their friends. In the second category, students would try to convince their friends not to drink. The third category is classified as students drinking with their friends but not liking alcohol. The fourth category consists of students who enjoy drinking with their friends and they may even encourage them to drink.

There was a significant difference in how students responded to their friends when they were drinking. The percentage of junior high students who tried to convince their friends not to drink increased from 27.0% in 1990 to 28.1% in 1993. A decrease from 4.5% in 1990 to 3.6% in 1993 was noted in the percentage of students who disliked drinking but still took part in the behavior because they were with peers.

Respondents were asked what their thoughts were on the use of alcohol. Students in the first category believed it was illegal and they rarely used alcohol. Those in the natural category believed it is normal for students of their age to experiment with alcohol. The unconcerned category means students drink and they do not give much thought to the effects of their usage.

There was a slight increase from 58.1% in 1990 to 59.6% in 1993 in the percentage of junior high students who thought that it was illegal to drink so they abstained. A decrease from 27.5% in 1990 to 25.6% was noted in the percentage of junior high students who believed it was natural for young people to experiment with substances.

Respondents were asked if they were ever embarrassed by their behavior when drinking. The percentage of junior high students who reported never having been embarrassed by their behavior because of drinking increased from 60.8% in 1990 to 63.0% in 1993.

A two-way ANOVA was performed to compare the total knowledge score between the junior and senior high students in 1990 and 1993. As shown in Table 6, interaction was included in the model but it was not significant. With an alpha level of .001, the knowledge level of junior high students was not statistically significant when comparing the year,  $F = 4.95$ ,  $p = .026$ . The knowledge level of junior and senior high students was statistically significant,  $F = 4710.65$ ,  $p < .001$ .

### **Senior High Results**

In this section of the study, changes in behaviors and attitudes toward substance use of senior high students are discussed. Behaviors analyzed include the frequent use of cigarettes, alcohol, and marijuana; number of times high in past 6 months; problems with others because of substance use; drinking and driving; and peer drinking. A summary of these data is presented in Table 4.

Respondents were asked how frequently they used cigarettes, alcohol, and marijuana. The percentage of senior high students who do not smoke increased from 39.7% in 1990 to 41.9% in 1993. However, the percentage of senior high students who abuse cigarettes also increased from 17.3% in 1990 to 19.9% in 1993. The percentage of senior high students who are nonusers of alcohol increased from 26.2% in 1990 to 30.8% in 1993. There was a decrease in the

Table 4

Percentage and Chi-square Values for the Substance-Using Behaviors of Senior High Students for 1990 and 1993

	Senior High Students		<i>X</i> , <i>df</i> , <i>P</i>
	1990 (N = 16,885)	1993 (N = 14,025)	
Behaviors Prevalance			
Smoking			
Nonuser	39.7%	41.9%	79.35
Misuser	43.0%	38.3%	df = 2
Abuser	17.3%	19.9%	p < .001
Alcohol			
Nonuser	26.2%	30.8%	107.60
Misuser	38.9%	38.9%	df = 2
Abuser	34.9%	30.3%	p < .002
Marijuana			
Nonuser	87.3%	87.1%	4.15
Misuser	8.5%	8.3%	df = 2
Abuser	4.2%	4.7%	p = .126
Behaviors Incidence			
Alcohol: Times drunk last 6 mos			
0	47.6%	48.7%	117.30
1-6	37.1%	32.1%	df = 2
7+	15.3%	19.1%	p < .001
Marijuana: Times high last 6 mos			
0	90.0%	88.4%	218.81
1-6	7.3%	6.8%	df = 2
7+	1.8%	4.9%	p < .001

(table continues)

	Senior High Students		<i>X</i> , <i>df</i> , <i>P</i>
	1990 (N = 16,885)	1993 (N = 14,025)	
<b>Trouble at school</b>			
0 times	91.9%	93.0%	15.20
1 time	5.0%	4.2%	df = 2
2+ times	3.1%	2.8%	p < .001
<b>Difficulty with friends</b>			
0 times	71.9%	78.5%	176.92
1 time	13.8%	10.4%	df = 2
2+ times	14.3%	11.1%	p < .001
<b>Trouble with the police</b>			
0 times	87.1%	89.0%	26.17
1 time	8.4%	7.1%	df = 2
2+ times	4.5%	3.9%	p < .001
<b>Drove a car after drinking</b>			
0 times	55.5%	60.1%	82.73
1 time	10.3%	9.5%	df = 2
2+ times	34.7%	30.4%	p < .001
<b>Rode in a car after the driver had been drinking</b>			
0 times	28.2%	36.1%	225.37
1 time	14.7%	13.8%	df = 2
2+ times	57.1%	50.1%	p < .001
<b>Close friends drink regularly</b>			
None	11.9%	12.8%	15.20
Some	56.5%	57.5%	df = 2
All	31.6%	29.7%	p < .001
<b>Friends have trouble in school</b>			
Never	50.8%	53.9%	36.01
Rarely	33.4%	30.3%	df = 2
Regularly	15.8%	15.7%	p < .001



percentage of senior high students who abused alcohol from 34.9% in 1990 to 30.3% in 1993. No significance was found for the frequency of marijuana use between 1990 and 1993.

Respondents were asked to identify the number of times they had been drunk on alcohol or high on marijuana during the past 6 months. There was a significant decrease from 37.1% in 1990 to 32.1% in 1993 of senior high students who admitted to using alcohol 1-6 times during the past 6 months. However, the percentage who were drunk at least 7 or more times increased from 15.1% in 1990 to 19.1% in 1993.

There was a slight decrease in the percentage of senior high students who did not use marijuana during the past 6 months. However, the percentage of students who were high on marijuana 7 or more times during the past 6 months increased from 1.8% in 1990 to 4.9% in 1993.

Respondents were asked to disclose the number of times they had been in trouble with teachers, friends, or police because of their substance use. There was an increase in the percentage of senior high students who had never been in trouble at school from 91.9% in 1990 to 93.0% in 1993. The percentage of senior high students who did not have difficulty with their friends because of their drinking increased from 71.9% in 1990 to 78.5% in 1993. There was an increase from 87.1% in 1990 to 89.0% in 1993 for the percentage of senior high students who never had trouble with the police.

Respondents were asked the number of times they had driven after drinking or else rode in a car after the driver had been drinking. The percentage of senior high students who never drove after drinking increased from 55.0% in 1990 to 60.1% in 1993. The percentage of senior high students who never rode in a car after the driver had been drinking increased from 28.2% in 1990 to 36.1% in 1993.

Respondents were asked to reveal the number of close friends who used substances and if their friends had been in trouble at school because of their drinking. The percentage of senior high students who reported none of their friends drank alcohol increased from 11.9% in 1990 to 12.8% in 1993. An increase from 56.5% in 1990 to 57.5% was noted for the percentage of senior high students who have some friends that use alcohol.

Attitudes that were analyzed in this study include the main reason young people drink, their responses when friends drink, their thoughts about drinking, and if they were embarrassed by their behavior when drinking. The data from these results are summarized in Table 5.

Respondents were asked what they thought was the main reason young people used substances. The percentage of senior high students who believed that "personal reasons" was the main reason decreased from 68.5% in 1990 to 65.5% in 1993. However, there was an increase from 27.5% in 1990 to 29.6% in 1993 in the percentage of students who believed peer pressure was the main reason young people used substances.

Table 5

Senior High Students' Attitudes Toward Substance Use in 1990 and 1993

	Senior High Students		<i>X, df, P</i>
	1990 (N = 16,742)	1993 (N = 13,950)	
<b>Main reason</b>			
Personal	68.4%	65.5%	32.50
Peer pressure	27.5%	29.6%	df = 2
Other	4.1%	4.9%	p < .001
<b>Responses when friends are drinking</b>			
Avoid them	17.9%	22.0%	103.42
Convince not to drink	23.0%	23.9%	df = 3
Drink but dislike	4.3%	3.7%	p < .001
Drink and like it	54.6%	50.4%	
<b>Thoughts about drinking</b>			
Illegal	27.2%	30.7%	74.04
Natural to experiment	37.7%	38.4%	df = 2
Unconcerned	35.1%	30.9%	p < .001
<b>Embarrassed by behavior</b>			
0 times	24.9%	30.5%	159.32
1 time	33.7%	34.2%	df = 2
2+ times	41.4%	35.3%	p < .001

Respondents were asked how they responded to their friends when they are drinking. The percentage of senior high students who avoid their friends increased from 17.9% in 1990 to 22.0% in 1993. There was a significant decrease from 54.6% to 50.4% between 1990 and 1993 in the percentage of students who liked to drink with their friends.

Respondents were asked about their thoughts regarding the use of alcohol. The percentage of senior high students who thought it was illegal to use alcohol increased from 27.2% in 1990 to 30.7% in 1993. There was a decrease from 35.1% to 30.9% between 1990 and 1993 in the group of students who were unconcerned about the consequences of their drinking.

Respondents were asked the number of times they were embarrassed by their behavior when drinking. The percentage of students who were never embarrassed by their behavior increased from 24.9% in 1990 to 30.5% in 1993.

The survey included 31 true-false items designed to measure the students' knowledge about substances and their use. The Cronbach Alpha reliability test was conducted on the total knowledge score. The reliability coefficient for the overall scale was 0.82.

A two-way ANOVA was performed to compare the total knowledge score for junior and senior high students in 1990 and 1993. As the data in Table 6 show, interaction was included in the model but it was not significant. With an alpha level of .001, the knowledge level of junior and senior high students was not statically significant when comparing the year 1990 to 1993. However, there was an increase in the knowledge level of junior and senior high students.

### **Summary**

In the present study the behaviors, attitudes, and knowledge level of junior and senior high school students were analyzed for changes toward substance use. The behaviors of junior high students which showed a positive increase between

Table 6

Two-Way Analysis of Variance for Total Knowledge by Year by Grade Level

Variables	N	Means	F	P
Year				
1990	36,198	18.26	4.953	.026
1993	30,538	18.16		
Grade				
Junior High		16.99	4710.646	<.001
Senior High		19.64		
2-way interaction				
Year Grade			.576	.448

1990 and 1993 were: nonusers for smoking, never having trouble in school, not having difficulty with friends, and never accepting a ride after the driver had been drinking. An increase in the negative behaviors of junior high students between 1990 and 1993 included: abuser category for smoking, number of times drunk during the last 6 months, and the number of times high on marijuana during the last 6 months.

The attitudes of junior high students which changed between 1990 and 1993 included an increase in the percentage who believe the main reason young people drink is related to peer pressure. An increased percentage of junior high students tend to either avoid their friends when drinking or try to convince them not to drink. The percentage of junior high students who believe that alcohol is

illegal and were embarrassed by their behavior when drinking increased between 1990 and 1993.

The knowledge level of junior high students was not statistically significant when comparing the year. However, there was an increase in the knowledge level of junior and senior high students.

The behaviors of senior high students which showed a positive increase between 1990 and 1993 were: nonuser categories for smoking and alcohol, not being intoxicated during the last 6 months, never having school trouble, never having difficulty with friends, never having police trouble, never driving after drinking, never riding in a car after the driver was drinking, the number of friends who did not drink, and friends did not have trouble in school. There was a positive decrease in the percentage of senior high students who used alcohol or marijuana 1-6 times during the past 6 months between 1990 and 1993. Behaviors which displayed negative increases between 1990 and 1993 were: the abuser category for smoking and alcohol, 7+ times category for alcohol during the past 6 months, and 7+ times category for marijuana during the last 6 months.

The knowledge level of senior high students did not improve when compared by year. Interaction was included but not significant. There was an increase in the knowledge level when comparing junior and senior high students.

### **Research Question II**

In this section, the data on elementary curricula in relation to behaviors, attitudes, and knowledge of junior high students are presented. Then the results

from junior high prevention curricula are presented for the senior high students. Research question two asked: Did elementary prevention curricula (such as Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing) and junior high prevention curricula (such as Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence) have different levels of effectiveness on behaviors, attitudes, and knowledge of North Dakota junior and senior high school students between 1990 and 1993? Chi-square tests were conducted to investigate if the elementary or junior high prevention curricula have different levels of effectiveness on behaviors and attitudes of junior and senior high students.

### **Junior High Results**

The elementary curricula compared were: Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing. Tables 7 through 12 present only the results of nonuser, zero times, or never categories of behaviors and the attitudes of junior high students as related to each elementary curriculum. (See Tables 25 through 30 in Appendix B for complete results.)

Junior high student respondents of the Discover curriculum showed a significant decrease in nonusing behaviors. There was a decline in the percentage of nonusing junior high students in regard to smoking, drinking, and marijuana usage from 1990 to 1993, while the percentage of adolescents who abused cigarettes, alcohol, and marijuana increased. The percentage of students who

Table 7

Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to Discover Curriculum

	1990 (N = 4,060)	1993 (N = 4,183)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	60.0%	57.5%	48.77	<.001
Alcohol Nonuser	63.9%	59.8%	22.28	<.001
Marijuana Nonuser	94.8%	92.0%	32.56	<.001
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	82.9%	78.8%	63.10	<.001
Marijuana: Times high last 6 months 0 times	96.8%	93.2%	84.22	<.001
Trouble at school 0 times	95.6%	94.8%	5.99	.050
Difficulty with friends 0 times	89.6%	89.9%	10.14	.006
Trouble with the police 0 times	96.5%	95.5%	9.11	.010
Drove a car after drinking 0 times	92.7%	91.3%	5.91	.052
<u>(table continues)</u>				



	1990 (N = 4,060)	1993 (N = 4,183)	Chi-square	P
Rode in a car after the driver had been drinking				
0 times	59.1%	58.9%	10.65	.005
Close friends drink regularly				
None	51.5%	45.1%	40.02	<.001
Friends have trouble in school				
Never	75.1%	72.0%	11.93	.003
Attitudes				
Main reason				
Personal	48.5%	48.7%	.41	.816
Peer pressure	45.1%	45.6%		
Responses when friends are drinking				
Avoid them	47.1%	44.2%	10.11	.018
Drink with and like it	21.1%	23.7%		
Thoughts about drinking				
Illegal	61.8%	58.4%	21.79	<.001
Unconcerned	11.6%	15.0%		
Embarrassed by behavior				
0 times	64.4%	62.8%	4.45	.108

were not drunk on alcohol or high on marijuana during the last 6 months decreased but the category where they had been drunk or high 7+ times increased from 1990 to 1993. The number of close friends who do not drink

decreased for junior high students. However, junior high students who admitted that all their close friends drank increased from 1990 to 1993.

There is a decrease in the percentage of junior high students who believe it is illegal to use alcohol. An increase was noted between 1990 and 1993 in the percentage of adolescents who are unconcerned with the consequences of their drinking.

The data for the respondents of DUSO curriculum are in Table 8. Junior high students who were taught substance prevention from the DUSO curriculum did not show any significant changes in their behaviors and attitudes between 1990 and 1993.

The data for the respondents of Me-Me curriculum are in Table 9. Junior high students who were taught Me-Me curriculum did not have any significant differences noted in their behaviors and attitudes between 1990 and 1993.

The data are summarized for all respondents of the Operation Aware Curriculum in Table 10. Junior high students who were taught Operation Aware curriculum did not show any significant differences in their behaviors and attitudes between 1990 and 1993.

The results of the respondents from the Positive Action curriculum are shown in Table 11. Junior high students who were taught Positive Action Curriculum did not show any significant differences in their behaviors and attitudes between 1990 and 1993.

Table 8

Significant Differences in the Behaviors and Attitudes of Junior High Students In Relation to DUSO Curriculum

	1990 (N = 410)	1993 (N = 474)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	68.3%	66.2%	.77	.680
Alcohol Nonuser	64.4%	61.2%	2.93	.231
Marijuana Nonuser	96.8%	97.0%	.40	.820
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	86.6%	81.6%	9.04	.011
Marijuana: Times high last 6 months 0 times	98.0%	96.8%	1.41	.495
Trouble at school 0 times	96.8%	96.4%	.59	.746
Difficulty with friends 0 times	91.5%	89.0%	1.51	.470
Trouble with the police 0 times	97.8%	97.0%	.50	.777

(table continues)

	1990 (N = 410)	1993 (N = 474)	Chi-square	<i>P</i>
Drove a car after drinking 0 times	92.7%	91.3%	5.91	.052
Rode in a car after the driver had been drinking 0 times	59.1%	58.9%	10.65	.005
Close friends drink regularly None	55.9%	46.5%	9.83	.007
Friends have trouble in school Never	75.1%	72.0%	11.92	.003
Attitudes				
Main reason Personal	45.2%	44.5%	1.14	.566
Peer pressure	48.4%	50.6%		
Responses when friends are drinking Avoid them	49.4%	44.4%	5.89	.117
Drink with and like it	20.2%	23.8%		
Thoughts about drinking Illegal	61.8%	58.4%	21.79	.015
Unconcerned	11.6%	15.0%		
Embarrassed by behavior 0 times	67.3%	64.3%	1.62	.444

Table 9

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Me-Me Curriculum

	1990 (N = 370)	1993 (N = 414)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	64.9%	63.3%	5.94	.051
Alcohol Nonuser	54.3%	58.6%	2.31	.315
Marijuana Nonuser	98.4%	96.1%	5.09	.079
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	78.1%	79.5%	5.14	.077
Marijuana: Times high last 6 months 0 times	99.5%	98.6%	3.60	.165
Trouble at school 0 times	96.5%	95.2%	.88	.643
Difficulty with friends 0 times	87.3%	89.6%	1.16	.560
Trouble with the police 0 times	98.4%	95.9%	4.26	.119

(table continues)

	1990 (N = 370)	1993 (N = 414)	Chi-square	P
Drove a car after drinking 0 times	56.1%	60.8%	6.22	.045
Rode in a car after the driver had been drinking 0 times	47.4%	58.2%	11.10	.004
Close friends drink regularly None	41.4%	38.3%	8.16	.017
Friends have trouble in school Never	77.4%	70.9%	8.32	.016
Attitudes				
Main reason				
Personal	45.8%	46.8%	.96	.619
Peer pressure	46.9%	47.9%		
Responses when friends are drinking				
Avoid them	44.6%	45.3%	.05	.982
Drink with and like it	24.5%	24.8%		
Thoughts about drinking				
Illegal	53.2%	60.0%	6.82	.033
Unconcerned	15.7%	17.2%		
Embarrassed by behavior 0 times	56.1%	60.8%	5.72	.045

Table 10

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Operation Aware

	1990 (N = 790)	1993 (N = 841)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	62.2%	65.0%	9.00	.011
Alcohol Nonuser	62.0%	60.5%	7.25	.027
Marijuana Nonuser	96.8%	96.7%	.56	.757
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	81.4%	80.4%	5.92	.052
Marijuana: Times high last 6 months 0 times	97.7%	97.9%	1.38	.503
Trouble at school 0 times	96.7%	96.8%	.55	.761
Difficulty with friends 0 times	89.7%	90.1%	.14	.933
Trouble with the police 0 times	97.8%	96.9%	1.84	.399

(table continues)

	1990 (N = 790)	1993 (N = 841)	Chi-square	P
Drove a car after drinking 0 times	93.0%	91.0%	.03	.985
Rode in a car after the driver had been drinking 0 times	54.2%	58.3%	3.70	.158
Close friends drink regularly None	48.7%	44.3%	4.92	.086
Friends have trouble in school Never	78.9%	74.1%	8.10	.017
Attitudes				
Main reason Personal	45.3%	46.0%	.09	.956
Peer pressure	49.4%	48.6%		
Responses when friends are drinking Avoid them	46.8%	51.5%	6.32	.097
Drink with and like it	22.3%	22.2%		
Thoughts about drinking Illegal	60.5%	63.5%	2.07	.357
Unconcerned	14.1%	14.0%		
Embarrassed by behavior 0 times	62.4%	62.1%	.03	.985



Table 11

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Positive Action Curriculum

	1990 (N = 673)	1993 (N = 802)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	63.3%	69.2%	8.83	.012
Alcohol Nonuser	63.3%	70.1%	7.89	.019
Marijuana Nonuser	96.4%	96.9%	.29	.867
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	81.1%	85.6%	8.24	.016
Marijuana: Times high last 6 months 0 times	97.9%	97.8%	2.23	.286
Trouble at school 0 times	96.1%	97.3%	2.51	.750
Difficulty with friends 0 times	92.0%	92.9%	.58	.750
Trouble with the police 0 times	96.3%	98.0%	4.29	.117

(table continues)

	1990 (N = 673)	1993 (N = 802)	Chi-square	P
Drove a car after drinking 0 times	64.1%	69.6%	5.45	.066
Rode in a car after the driver had been drinking 0 times	57.4%	63.8%	8.00	.018
Close friends drink regularly None	48.4%	53.2%	9.13	.010
Friends have trouble in school Never	74.9%	78.6%	8.60	.014
	Attitudes			
Main reason				
Personal	45.0%	44.0%	3.54	.171
Peer pressure	49.2%	52.1%		
Responses when friends are drinking				
Avoid them	48.0%	55.4%	14.42	.002
Drink with and like it	24.2%	16.5%		
Thoughts about drinking				
Illegal	61.7%	68.5%	7.50	.024
Unconcerned	13.9%	11.2%		
Embarrassed by behavior 0 times	64.1%	69.6%	5.21	.074

The data for respondents of Skills for Growing are presented in Table 12. There was a significant increase between 1990 and 1993 in the percentage of junior high students who reported never having trouble with their friends or whose friends did not have trouble at school due to their drinking. The percentage of junior high students who were embarrassed by their behaviors when drinking increased between 1990 and 1993.

The knowledge of junior high students was compared to each curricula and the years 1990 and 1993 through the utilization of t-tests. The results are shown in Table 13. The six elementary curricula were nonsignificant at the .001 level.

### **Senior High Results**

In this section of the study, the results of junior high curricula on the behaviors and attitudes of senior high students are presented. The second part of research question two asked: Did the junior high prevention curricula (such as Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescents) have different levels of effectiveness on the behaviors, attitudes, and knowledge of North Dakota senior high students between 1990 and 1993. Tables 14 through 19 present only the results of nonusers, zero times, or never categories of behaviors and the attitudes of senior high students in relation to each curriculum. (See Tables 31 to 36 for complete results.) The junior high curricula compared were: Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence.

Table 12

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Skills for Growing

	1990 (N = 1,537)	1993 (N = 1,585)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	56.9%	59.6%	2.62	.270
Alcohol Nonuser	57.5%	60.7%	6.33	.042
Marijuana Nonuser	95.4%	96.1%	1.13	.562
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	79.5%	80.9%	2.58	.275
Marijuana: Times high last 6 months 0 times	97.2%	97.0%	.22	.898
Trouble at school 0 times	94.5%	94.9%	.71	.701
Difficulty with friends 0 times	87.6%	91.6%	13.50	.001
Trouble with the police 0 times	95.8%	96.8%	1.19	.553

(table continues)

	1990 (N = 1,537)	1993 (N = 1,585)	Chi-square	<i>P</i>
Drove a car after drinking 0 times	91.4%	91.3%	.05	.975
Rode in a car after the driver had been drinking 0 times	53.7%	55.8%	1.30	.523
Close friends drink regularly None	39.9%	42.4%	5.77	.056
Friends have trouble in school Never	66.6%	74.8%	25.52	<.001
Attitudes				
Main reason Personal	51.2%	48.6%	3.27	.196
Peer pressure	44.1%	45.6%		
Responses when friends are drinking Avoid them	42.3%	45.7%	11.90	.008
Drink with and like it	26.8%	23.2%		
Thoughts about drinking Illegal	57.3%	59.9%	8.08	.018
Unconcerned	16.7%	13.1%		
Embarrassed by behavior 0 times	59.1%	64.7%	16.87	<.001

Table 13

The Comparison of Each Elementary Prevention Curriculum to the Knowledge Level of Junior High Students

Curriculum	N	1990 Mean	1993 Mean	S.D.	t-test Value
Discover	4,185	17.11	17.15	5.20	.725
DUSO	470	17.11	16.80	5.04	.384
Me-Me	414	16.13	16.75	5.28	.090
Operation Aware	843	17.48	16.81	5.05	.007
Positive Action	805	17.29	17.32	4.94	.096
Skills for Growing	1,586	17.08	16.86	5.15	.212

The data are summarized for all respondents of Health Curriculum in Table 14. There was a significant decrease between 1990 and 1993 in the percentage of nonusing junior high students who smoked cigarettes or marijuana. A significant decrease was also noted in the percentage of senior high students who were drunk on alcohol or high on marijuana during the past 6 months. However, between 1990 and 1993 there was a significant increase in the percentage of senior high students who abused cigarettes, marijuana, and were either drunk on alcohol or high on marijuana during the past 6 months. The percentage of senior high students who would not accept rides in a vehicle after the driver had been drinking increased between 1990 and 1993.

Table 14

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Health Curriculum

	1990 (N = 2,529)	1993 (N = 2,303)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	41.3%	39.3%	17.74	<.001
Alcohol Nonuser	27.9%	28.4%	.41	.816
Marijuana Nonuser	84.6%	80.9%	14.34	.001
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	50.2%	46.1%	30.77	<.001
Marijuana: Times high last 6 months 0 times	88.2%	82.1%	79.37	<.001
Trouble at school 0 times	92.8%	93.1%	.27	.873
Difficulty with friends 0 times	75.0%	77.8%	8.38	.015
Trouble with the police 0 times	89.7%	89.4%	1.54	.463

(table continues)

	1990 (N = 2,529)	1993 (N = 2,303)	Chi-square	P
Drove a car after drinking 0 times	61.8%	60.8%	.51	.774
Rode in a car after the driver had been drinking 0 times	31.3%	36.5%	14.76	.001
Close friends drink regularly None	13.9%	12.8%	2.48	.289
Friends have trouble in school Never	51.4%	52.3%	.90	.639
Attitudes				
Main reason Personal	71.0%	69.6%	1.16	.559
Peer pressure	25.5%	26.8%		
Response when friends are drinking Avoid them	18.5%	19.6%	2.68	.559
Drink with and like it	54.0%	52.1%		
Thoughts about drinking Illegal	27.1%	28.4%	1.13	.569
Unconcerned	32.9%	32.6%		
Embarrassed by behavior 0 times	26.8%	28.2%	.37	.001



The results from respondents of Here's Looking At You 2000 Curriculum are presented in Table 15. There was a decrease in the percentage of senior high students who had not been high on marijuana during the past 6 months. However, the percentage of senior high students who had been high at least 7 or more times in the last 6 months increased between 1990 and 1993. The percentage of senior high students who did not accept rides after the driver had been drinking or those who had close friends that were never in trouble at school increased between 1990 and 1993.

The data are summarized for all the respondents of Learning to Live Drug Free Curriculum in Table 16. Senior high students who were taught Learning Live Drug Free Curriculum did not display any significant differences in their behaviors and attitudes between 1990 and 1993.

The data for the respondents of Local Curriculum are in Table 17. There was an increase in the percentage of senior high students who did not use cigarettes or alcohol between 1990 and 1993. The percentage of senior high students who were nonusers of marijuana decreased between 1990 and 1993. There was an increase in the percentage of senior high students who abused smoking or had been high on marijuana seven or more times during the last 6 months. An increased percentage of senior high students reported they did not have difficulty with their friends because of drinking, drove a car after drinking, or accepted rides in a car after the driver had been drinking.

Table 15

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Here's Looking at You 2000

	1990 (N = 787)	1993 (N = 1,267)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	41.1%	39.9%	12.76	.002
Alcohol Nonuser	27.5%	29.3%	6.68	.036
Marijuana Nonuser	91.7%	90.7%	.43	.805
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	48.6%	46.3%	2.77	.251
Marijuana: Times high last 6 months 0 times	95.2%	91.6%	14.66	.001
Trouble at school 0 times	92.0%	94.9%	9.26	.010
Difficulty with friends 0 times	72.2%	77.8%	8.35	.015
Trouble with the police 0 times	87.8%	89.7%	3.94	.139

(table continues)

	1990 (N = 787)	1993 (N = 1,267)	Chi-square	P
Drove a car after drinking 0 times	52.2%	59.8%	11.60	.003
Rode in a car after the driver had been drinking 0 times	25.8%	34.5%	17.38	<.001
Close friends drink regularly				
None	9.4%	11.7%	3.03	.220
Friends have trouble in school				
Never	47.4%	57.2%	21.79	<.001
Attitudes				
Main reason				
Personal	66.1%	62.1%	2.80	.246
Peer pressure	29.6%	32.3%		
Responses when friends are drinking				
Avoid them	19.8%	22.4%	2.79	.425
Drink with and like it	54.7%	52.1%		
Thoughts about drinking				
Illegal	28.2%	28.8%	2.30	.317
Unconcerned	36.7%	33.8%		
Embarrassed by behavior 0 times	25.4%	28.9%	3.01	.222

Table 16

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Learning to Live Drug Free

	1990 (N = 614)	1993 (N = 554)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	40.6%	46.0%	11.53	.003
Alcohol Nonuser	24.3%	28.7%	12.79	.002
Marijuana Nonuser	90.5%	94.2%	6.26	.043
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	45.0%	47.8%	3.62	.164
Marijuana: Times high last 6 months 0 times	93.5%	95.1%	9.49	.009
Trouble at school 0 times	93.5%	92.9%	.45	.800
Difficulty with friends 0 times	72.3%	79.3%	7.89	.019
Trouble with the police 0 times	89.4%	89.3%	.11	.945

(table continues)

	1990 (N = 614)	1993 (N = 554)	Chi-square	P
Drove a car after drinking 0 times	50.3%	56.8%	4.81	.090
Rode in a car after the driver had been drinking 0 times	24.1%	28.7%	4.56	.102
Close friends drink regularly None	12.1%	11.0	11.42	.003
Friends have trouble in school Never	54.2%	55.1%	1.60	.448
Attitudes				
Main reason Personal	65.8%	55.1%	.64	.736
Peer pressure	30.1%	32.1%		
Response when friends are drinking Avoid them	17.7%	22.7%	12.72	.005
Drink with and like it	57.1%	51.9%		
Thoughts about drinking Illegal	26.4%	31.8%	9.77	.008
Unconcerned	38.7%	30.1%		
Embarrassed by behavior 0 times	24.6%	29.4%	7.41	.025

Table 17

Significant Differences in the Behaviors and Attitudes of Senior High Students In Relation to Local Curriculum

	1990 (N = 2,865)	1993 (N = 2,870)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	41.6%	42.1%	28.26	<.001
Alcohol Nonuser	25.6%	30.7%	22.14	<.001
Marijuana Nonuser	91.3%	88.8%	12.45	.002
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	48.8%	48.5%	12.10	.002
Marijuana: Times high last 6 months 0 times	93.8%	89.5%	59.99	<.001
Trouble at school 0 times	90.5%	92.2%	5.43	.066
Difficulty with friends 0 times	72.9%	79.1%	30.87	<.001
Trouble with the police 0 times	86.5%	88.2%	4.37	.113

(table continues)

	1990 (N = 2,865)	1993 (N = 2,870)	Chi-square	P
Drove a car after drinking 0 times	51.9%	58.1%	23.58	<.001
Rode in a car after the driver had been drinking 0 times	26.4%	33.3%	36.65	<.001
Close friends drink regularly None	10.3%	11.5%	4.83	.089
Friends have trouble in school Never	48.7%	51.9%	5.94	.051
Attitudes				
Main reason Personal	67.7%	64.6%	7.54	.023
Peer pressure	28.1%	30.2%		
Responses when friends are drinking Avoid them	19.3%	22.7%	11.84	.008
Drink with and like it	54.2%	50.6%		
Thoughts about drinking Illegal	27.5%	31.0%	15.37	<.001
Unconcerned	35.6%	31.0%		
Embarrassed by behavior 0 times	24.1%	30.1%	33.57	<.001

There was an increase in the percentage of senior high students who thought it was illegal to drink. However, a decrease was noted in the percentage of students who were unconcerned about their drinking.

The data are summarized for all respondents of Skills for Adolescents in Table 18. There was a decrease in the percentage of senior high students who had not been high on marijuana during the last 6 months. An increased percentage of senior high students reported they did not have difficulty with their friends because of drinking and they did not accept rides in a car after the driver had been drinking.

The results of Skills for Living respondents are in Table 19. The percentage of senior high students who reported using marijuana 1-6 times decreased between 1990 and 1993. However, the percentage of students who used marijuana at least seven or more times increased between 1990 and 1993. An increased percentage of senior high students reported they did not have difficulty with their friends when drinking and they were not embarrassed by their behavior when drinking alcohol.

In order to investigate if there were a difference in the knowledge of senior high students, t-tests were conducted to compare each curriculum and the years 1990 and 1993 with the total knowledge score. The results are shown in Table 20. Of the six senior high curricula none were found to be significant at the .001 level.



Table 18

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Skills for Adolescence

	1990 (N = 1,740)	1993 (N = 1,628)	Chi-square	P
Behaviors Prevalence				
Smoking Nonuser	39.4%	39.6%	2.94	.230
Alcohol Nonuser	26.9%	27.3%	2.15	.341
Marijuana Nonuser	90.9%	89.9%	3.90	.142
Behaviors Incidence				
Alcohol: Times drunk last 6 months 0 times	48.6%	45.1%	10.67	.005
Marijuana: Times high last 6 months 0 times	93.1%	91.2%	25.21	<.001
Trouble at school 0 times	89.2%	90.75	2.07	.355
Difficulty with friends 0 times	70.8%	77.3%	18.90	<.001
Trouble with the police 0 times	87.0%	87.3%	.43	.808

(table continues)

	1990 (N = 1,740)	1993 (N = 1,628)	Chi-square	<i>P</i>
Drove a car after drinking 0 times	52.4%	56.3%	5.48	.064
Rode in a car after the driver had been drinking 0 times	27.2%	32.8%	13.49	<.001
Close friends drink regularly None	9.8%	10.2%	.30	.861
Friends have trouble in school Never	44.8%	49.8%	8.40	.015
Attitudes				
Main reason				
Personal	68.8%	67.1%	2.16	.340
Peer pressure	27.1%	27.8%		
Responses when friends are drinking				
Avoid them	19.2%	21.2%	2.49	.477
Drink with and like it	54.6%	53.7%		
Thoughts about drinking				
Illegal	27.9%	28.7%	2.49	.288
Unconcerned	35.7%	33.1%		
Embarrassed by behavior 0 times	24.9%	27.7%	4.95	.084

Table 19

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Skills for Living

	1990 (N = 1,222)	1993 (N = 1,628)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking Nonuser	42.1%	40.8%	7.49	.024
Alcohol Nonuser	25.9%	29.1%	3.34	.188
Marijuana Nonuser	90.4%	91.4%	6.37	.041
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months 0 times	46.4%	47.5%	11.50	.003
Marijuana: Times high last 6 months 0 times	92.5%	92.4%	14.19	.001
Trouble at school 0 times	90.3%	92.3%	3.50	.174
Difficulty with friends 0 times	72.2%	78.9%	16.65	<.001
Trouble with the police 0 times	87.1%	88.0%	1.34	.511
<u>(table continues)</u>				

	1990 (N = 1,222)	1993 (N = 1,628)	Chi-square	P
Drove a car after drinking 0 times	54.7%	59.0%	4.54	.103
Rode in a car after the driver had been drinking 0 times	28.7%	34.2%	8.63	.013
Close friends drink regularly None	9.9%	10.7%	1.24	.538
Friends have trouble in school Never	47.5%	48.9%	.459	.795
Attitudes				
Main reason Personal	70.0%	65.0%	7.92	.019
Peer pressure	25.3%	30.5%		
Responses when friends are drinking Avoid them	18.4%	21.7%	4.62	.202
Drink with and like it	54.7%	52.2%		
Thoughts about drinking Illegal	27.4%	29.7%	4.17	.125
Unconcerned	34.9%	31.0%		
Embarrassed by behavior 0 times	23.8%	29.8%	14.11	.001

Table 20

The Comparison of Each Junior High Prevention Curriculum to the Knowledge Level of Senior High Students Junior Curricula

Curriculum	N	1990 Mean	1993 Mean	S.D.	t-test Value
Health Curriculum	2,304	20.21	19.90	4.65	.084
Here's Looking at You	1,268	19.67	19.95	4.27	.147
Learning to Live Drug Free	554	19.96	19.58	5.18	.179
Local Curriculum	2,870	19.16	19.39	4.83	.058
Skills for Adolescence	1,629	19.38	19.63	4.75	.113
Skills for Living	1,163	19.07	19.46	4.84	.040

### Summary

The elementary curricula that were compared for their effectiveness on the behaviors and attitudes of junior high students included Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing. Only the respondents of Discover Curriculum showed significant decreases in the percentage of nonusing junior high students in regards to smoking, alcohol intake, and marijuana usage between 1990 and 1993. There was a decrease in the percentage of junior high students who were not drunk on alcohol or high from smoking marijuana during the last 6 months. A decrease was noted in the percentage of junior high students who had friends that never drank. There is a decrease in the percentage

of junior high students who believe that it is illegal to use alcohol while an increased number do spend time reflecting on the consequences of their drinking.

Only the respondents of Skills for Growing showed an increase in the percentage of junior high students who reported never having trouble with their friends or being embarrassed by their behavior between 1990 and 1993. The percentage of junior high students whose friends were not in trouble at school due to their drinking increased between 1990 to 1993.

The respondents of DUSO, Me-Me, Operation Aware, and Positive Action showed no significant differences in the behaviors and attitudes of junior high students between 1990 and 1993.

The junior high curricula that were compared for their effectiveness on the behaviors and attitudes of senior high students include Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence. Health curriculum respondents reported a decrease in the percentage of senior high students who did not smoke cigarettes between 1990 and 1993. Health Curriculum respondents showed a decrease between 1990 and 1993 in the percentage of nonusers for smoking, marijuana, times they had not been drunk on alcohol during the last 6 months, and times they had not been high on marijuana during the last 6 months.

Here's Looking at You 2000 respondents showed a decrease in the number of times they had not used marijuana during the last 6 months. There was an increase from 1990 to 1993 in the percentage of senior high students who did not

ride in a car when the driver had been drinking or their friends never having trouble in school because of drinking.

Local curriculum respondents showed an increase between 1990 and 1993 in the percentage of students who did not use cigarettes and alcohol, never had difficulty with friends, never rode in a car after the driver had been drinking, thought drinking was illegal, or were never embarrassed by their behavior. A decrease was noted in the percentage of senior high students who never became high from smoking marijuana during the last 6 months.

Skills for Adolescence curriculum showed a significant increase between 1990 and 1993 in the percentage of senior high students who never had difficulty with their friends or rode in a car when the driver had been drinking. A decrease was noted in the number of times senior high students had not been high on marijuana during the last 6 months.

Skills for Living respondents showed a decrease between 1990 and 1993 in the percentage of students who would get high on marijuana 1-6 times during the last 6 months. There was an increase in the percentage of senior high students who reported never having difficulty with their friends or never being embarrassed by their behavior between 1990 and 1993.

### **Research Question III**

In this section, the data on the comparison of one elementary curricula to the others in relation to behaviors, attitudes, and knowledge are presented.

Research question three asked: Did elementary prevention curricula (such as

Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing) and junior high prevention curricula (such as Health Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence) have different levels of effectiveness on behaviors, knowledge, and attitudes of North Dakota junior and senior high school students? Chi-square tests were conducted to compare one elementary curriculum against the others to measure if there were changes in the behaviors and attitudes of junior high students. Comparisons were generated among six different elementary curricula implemented in various schools in North Dakota. Only those curricula where the respondents answered the surveys in both 1990 and 1993 were included in these analyses.

### **Junior High Results**

Examination of the summary data in Table 21 (see Table 37 in Appendix for complete results) reveals the comparison of each elementary curriculum to the behaviors and attitudes of junior high students. A plus (+) indicates that the responses of the junior high students were significantly higher than the mean for that curriculum; a minus (-) indicates the responses were significantly lower than the mean for that particular curriculum; and a zero (0) means there were no differences noted. Elementary curriculum compared were: Discover, DUSO, Me-Me, Operation Aware, Positive Action, and Skills for Growing.



Table 21

Comparison of Elementary Curricula to the Behaviors and Attitudes of Junior High Students in 1993

Number	Dis 4,185	DUSO 418	MeMe 414	OA 841	PA 803	SKG 1,585
<b>Behaviors Prevalence</b>						
Smoking Nonuser	-	0	0	0	+	0
Alcohol Nonuser	-	0	0	0	+	0
Marijuana Nonuser	-	0	0	0	0	0
<b>Behaviors Incidence</b>						
Alcohol: Times drunk last 6 months 0 times	0	-	0	0	+	0
Marijuana: Times high last 6 months 0 times	-	0	0	+	+	+
Trouble at school 0 times	-	0	0	0	0	0
Difficulty with friends 0 times	0	0	0	0	0	0
Trouble with the police 0 times	0	0	0	0	0	0

(table continues)

Number	Dis 4,185	DUSO 418	MeMe 414	OA 841	PA 803	SKG 1,585
Drove a car after drinking 0 times	0	0	0	0	+	0
Rode in a car after the driver had been drinking 0 times	0	0	0	0	+	0
Close friends drink regularly None	0	0	-	0	+	-
Friends have trouble in school Never	0	0	0	0	+	0
Attitudes						
Main reason Personal	0	0	0	0	0	0
Responses when friends are drinking Avoid them	0	0	0	+	+	0
Thoughts about drinking Illegal	0	0	0	0	+	0
Embarrassed by behavior Never	0	0	0	0	+	0

Note. Dis = Discover; OA = Operation Aware; PA = Positive Action;

SKG = Skills for Growing

Junior high respondents who participated in the Positive Action program showed a positive change in 8 of the 12 behaviors and 3 of the 4 attitudes in 1993. Respondents who participated in the Operation Aware program displayed a positive change in two behaviors and one attitude whereas respondents from Skills for Growth showed a positive change in one behavior. Respondents of Discover, DUSO, and Me-Me did not have any positive changes in their behaviors or attitudes.

Respondents who participated in the Discover curriculum were the least effective in changing their behaviors. Junior high students reported a negative change in 5 of the 12 behaviors with no significant changes noted in their attitudes. Respondents of DUSO and Me-Me each displayed one negative change in their behaviors; otherwise no significant changes were noted in their attitudes.

To investigate if there are differences in the knowledge level of junior high students and the curricula, t-tests were utilized. Each elementary curriculum was compared with the total knowledge score of junior high students. The results are summarized in Table 22. Of the six elementary curriculum, Me-Me was found to be significant at the .001 level. Respondents of the Me-Me program have a lower knowledge of substance use.

### **Senior High Results**

In this section, the results from the junior high prevention curricula are presented. The second portion of research question three asked: Did junior high prevention curricula (such as Health Curriculum, Learning to Live Drug Free,

Table 22

Comparison of Elementary Curriculum and the Knowledge Level of Junior High Students in 1993

N	Curriculum Mean	SD	N	Total Mean	SD	t-test Values
4,185	Discover 17.15	5.20	12,209	17.01	4.98	.112
352	DUSO 19.55	4.77	13,609	19.63	4.69	.769
414	Me-Me 16.13	5.28	15,980	17.07	5.03	<.001
843	Operation Aware 16.81	5.06	15,551	17.06	5.04	.171
805	Positive Action 17.32	4.94	15,589	17.03	5.04	.108
1,586	Skills for Growing 16.86	5.16	14,808	17.67	5.03	.120

Here's Looking at You 2000, Local Curriculum, Skills for Adolescence, and Skills for Living) have different levels of effectiveness on behaviors, attitudes, and knowledge of North Dakota senior high students. Chi-square tests were conducted to compare one junior high curriculum against the others to measure if there were changes in the behaviors and attitudes of senior high students. The results of the data are presented in Table 23 (see Appendix Table 38 for the complete results). Junior high prevention curriculum compared were: Health

Table 23

Comparison of Elementary Curricula to the Behaviors and Attitudes of Senior High Students in 1993

Number	HC 4,829	HLY 1,267	LC 2,867	LLDF 554	SKA 1,628	SKL 2,378
Behaviors Prevalence						
Smoking Nonuser	0	0	0	0	0	0
Alcohol Nonuser	0	0	0	0	0	0
Marijuana Nonuser	-	+	0	+	+	+
Behaviors Incidence						
Alcohol: Times drunk last 6 months 0 times	0	0	0	0	0	0
Marijuana: Times high last 6 months 0 times	-	+	0	+	+	+
Trouble at school 0 times	0	0	0	0	-	0
Difficulty with friends 0 times	0	0	0	0	0	0
Trouble with the police 0 times	0	0	0	0	0	0

(table continues)

Number	HC 4,829	HLY 1,267	LC 2,867	LLDF 554	SKA 1,628	SKL 2,378
Drove a car after drinking 0 times	0	0	0	0	0	0
Rode in a car after the driver had been drinking 0 times	0	0	-	-	0	0
Close friends drink regularly None	0	0	0	0	0	0
Friends have trouble in school Never	0	0	0	0	-	-
Attitudes						
Main reason Personal	+	0	0	0	0	0
Response when friends are drinking Avoid them	0	0	0	0	0	0
Thoughts about drinking Illegal	0	0	0	0	0	0
Embarrassed by behavior Never	0	0	0	0	0	0

Note. HC = Health Curriculum; HLY = Here's Looking at You 2000; LC = Local Curriculum; LLDF = Learning to Live Drug Free; SKA = Skills for Adolescence; SKL = Skills for Living

Curriculum, Learning to Live Drug Free, Here's Looking at You 2000, Local Curriculum, Skills for Living, and Skills for Adolescence.

None of the respondents who participated in the junior high prevention curricula displayed major positive or negative changes in behaviors and attitudes. Respondents of Here's Looking at You 2000, Learning to Live Drug Free, Skills for Adolescence, and Skills for Living reported a positive change in two behaviors. Health Curriculum respondents had one behavior and one attitude that were positively changed while no positive changes were noted in the senior high students who participated in Local Curriculum.

Respondents who participated in Health Curriculum and Skills for Adolescence showed a change of two negative behaviors while Local Curriculum, Learning to Live Drug Free, and Skills for Living displayed one negative change. Here's Looking at You 2000 did not display any negative changes on the behaviors of senior high students. Here's Looking at You 2000, Local Curriculum, Learning to Live Drug Free, Skills for Adolescence, and Skills for Living did not show any significant changes in the attitudes of senior high students in 1993.

To investigate if there were any differences in the knowledge level of senior high students and each junior high prevention curriculum, t-tests were utilized. The results are shown in Table 24. Of the six junior high prevention curricula, Health Curriculum was found to be significant at the .001 level.

Table 24

The Comparison of Each Junior High Prevention Curriculum to the Knowledge Level of Senior High Students in 1993

N	Curriculum Mean	SD	N	Total Mean	SD	t-test Values
2,304	Health Curriculum 19.99	4.65	11,657	19.56	4.69	<.001
1,268	Here's Looking at You 2000 19.95	4.27	12,693	19.59	4.73	.010
554	Learning to Live Drug Free 19.58	5.18	13,407	19.63	4.67	.817
2,870	Local Curriculum 19.40	4.83	11,091	19.68	4.65	.003
1,629	Skills for Adolescents 19.63	4.75	12,332	19.62	4.70	.971
1,163	Skills for Living 19.46	4.84	12,798	19.64	4.67	.215

### Summary

The elementary curricula were assessed for differing levels of effectiveness on the behaviors, attitudes, and knowledge level of junior high students in 1993. Positive Action curriculum had the most changes in the behaviors and attitudes of



junior high students, while Skills for Growth was moderately effective in making changes. Respondents of Discover, DUSO, and Me-Me did not have any positive changes in the behaviors and attitudes. In fact, respondents from the Discover curriculum were the least effective in changing their behaviors. The effects of each curriculum and the knowledge level of junior high students were investigated. There was a decrease in the knowledge level of the junior high students who were taught using the Me-Me curriculum.

None of the respondents who participated in the junior high prevention programs displayed any major positive or negative changes in their behaviors. Respondents who participated in Health Curriculum had a significant positive change in the attitude of the main reason adolescents use substances. The other five programs did not show any significant positive or negative changes in the attitudes of their respondents. The knowledge level and each junior high curriculum were investigated for any differences. Of the six junior high curricula, only the respondents of Health Curriculum had a significant positive change in their knowledge level.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This final chapter presents a summary of the present study within the context of previous related research and conclusions drawn from the results. In addition, recommendations to educators, researchers, and communities are provided.

#### Summary

The United States continues to be a substance-using culture. Many individuals use substances such as coffee or tea to wake up in the morning, smoke cigarettes to get through the stressors of the day, and/or consume alcohol to relax in the evening. The use of licit drugs continues to be presented in the media as the remedy for problems such as stress, headaches, depression, or physical illness (Newcomb & Bentler, 1989). Young children continue to be conditioned through television and printed media that for every pain or discomfort there is a chemical cure (Barum & Bashe, 1988). Even though adolescents are exposed to the use of substances by their parents, peers, and the media, our society expects that short-term drug education programs taught in the schools should be effective in preventing substance use.

Drug education has progressed through several evolutionary periods, but it has always had a place in the curriculum (Mathews, 1975). The educational

efforts to prevent substance abuse are mainly public education or school-based programs which have achieved only modest outcomes (Nathan, 1983). Many of the drug education programs emphasize the hazards of substance use. The physiological and psychological dangers, along with the legal and social consequences of substance use, are taught to students. Since many of the national programs have been criticized regarding their approach to drug education, some schools have incorporated drug education into another program such as health education (Berdiansky, 1991).

The first purpose of this study was to assess whether there had been a change in the behaviors, knowledge levels, and attitudes from 1990 to 1993 in 7th-through 12th-grade students in North Dakota. The second purpose was to investigate the relationship between elementary and junior high school-based programs and changes in self-reported behaviors, knowledge, and attitudes related to the use of substances in junior and senior high students in North Dakota between 1990 and 1993. The third purpose was to compare the elementary and junior high prevention programs for changes in self-reported behaviors, knowledge, and attitudes related to the use of substances by junior and senior high students in North Dakota between 1990 and 1993.

In North Dakota, 36,693 students in grades 7 through 12 participated in the 1990 survey and 30,616 students in 1993. Data were gathered from the North Dakota Youth Alcohol and Drug Survey developed by the North Dakota Department of Human Services and the North Dakota Department of Public

Instruction. The 1990 survey consisted of 119 multiple choice questions, and the 1993 survey contained 90 multiple choice items. Only the 12 questions which related to adolescent behaviors were chosen for this study, along with 4 questions regarding their attitudes and 31 true-false items that measured their knowledge level. The dependent variables consisted of the number of times adolescents or their friends had taken part in particular behaviors and what their attitudes were toward substance use. The total knowledge score consisted of the sum of questions relating to use of cigarettes, alcohol, marijuana, smokeless tobacco, and illicit drugs along with the physical and psychological consequences of substance use. The independent variables were the six elementary and six junior high preventive curricula taught in the North Dakota high schools during 1990 and 1993.

### **Limitations**

This is an ex post facto study in which attempts are made to determine the cause, or reason, for existing differences in the behaviors, attitudes, and knowledge of junior and senior high students who have been exposed to the teachings of different prevention curricula. This type of study differs from the experimental study because the independent variable is not manipulated. The groups are also different because they are not randomly selected and one group may have had some experience that the other groups have not had. Caution should be taken when analyzing the results of ex post facto studies because the observed effect may be the result, of other conditions or there may be a third

variable that has caused the identified cause and effect. Sources of weakness in the ex post facto design include lack of randomization, lack of manipulation, and lack of control which characterize the experimental studies (Gay, 1992)

All of the school districts in North Dakota had the opportunity to participate in the 1990 and 1993 North Dakota Drug and Alcohol surveys but the sample consists of the self-selected school districts who chose to take part. There was no randomization utilized when selecting the sample for this study.

There were no control variables used in this study such as separating gender even though the literature shows that males consistently consume more alcohol than females and have an increased number of problems related to drinking (Beck & Summons, 1987; Pope, Smith, Wayne, & Kelleher, 1994). This research study is at the first stage of exploration and it was generalized to determine if there may be a cause-effect relationship established between the prevention curricula and adolescent substance use.

### **Conclusions**

The following conclusions which pertain to substance using behaviors, attitudes, and knowledge level of North Dakota students in relation to the curricula can be drawn. Behaviors which resulted in a positive increase included the nonusers of smoking for junior high students and the nonusers of smoking and alcohol for senior high students. Negative changes in behaviors displayed an increase in the number of times junior and senior high students were drunk or high 7 or more times during the last 6 months. Due to the increases in the

nonuser categories, prevention curricula may be effective in preventing some students from starting to use substances or the adolescents may stop using after a brief period of experimentation. In society, adolescent substance use is viewed as a natural process, and many believe they may be looked at as deviant if they have not tried alcohol, cigarettes, or marijuana by the time they finish high school (Newcomb & Bentler, 1989). Students in the nonusers category may have experimented with substances and then decided they did not want to continue using either cigarettes or alcohol.

Many of the prevention curricula are ineffective in changing the behaviors of students who use substances regularly. The teachings of prevention programs may not change the behaviors or attitudes of these students because they are involved in activities outside of school or immersed in a peer group which promotes substance use.

Alcohol, cigarettes, and marijuana are considered to be the three main drugs of choice for adolescents who use substances. Frequently the dangers of alcohol and marijuana are deemphasized in prevention programs. Instead, educational information focuses on teaching the lethal effects of the hard drugs such as LSD, cocaine, or PCP (Berdinsky, 1991). Since alcohol, cigarettes, and marijuana are the main substances used by students in North Dakota, prevention programs should focus on their short-term and long-term consequences.

Positive Action respondents showed significant positive changes on the behaviors and attitudes of junior high students. The focus of Positive Action

curriculum is on the self-concept of students. In contrast, the respondents of Discover curriculum exhibited negative changes on the behaviors of junior high students and no differences were noted in the attitudes categories. The focus of the Discover curriculum is the belief that drug abuse is a result of unhealthy lifestyles. Differences in the outcomes of these two curricula might be a result of their main focus. Positive Action is presented as a program which will help the students feel good about themselves and students may be more accepting of the material presented, whereas Discover curriculum includes some of the same concepts but is presented as a substance prevention program. Depending on how the material is presented to the students, they may be turned off by the information that is being provided, especially if they have already formed their attitudes towards substance use.

Respondents of junior high curricula showed only moderate changes in the behaviors of senior high students. Local curriculum was ineffective in making any positive changes. Each local curriculum is unique to the school that developed it but the lack of experience in curriculum development or knowledge related to substance has made those curricula ineffective in changing the behaviors or attitudes of senior high students. Schools should incorporate national curricula that has been designed by experts in the drug and alcohol field.

Junior high curricula did not have a major impact on the behaviors, attitudes, and knowledge of senior high students. If the senior high students had not been taught prevention curricula, would there be a change in their behaviors,

attitudes, and knowledge? Without the use of control groups, there was no way to assess for changes in the behaviors, attitudes, and knowledge of students who had not been exposed to prevention curricula.

The differences in the effectiveness of the curricula may be explained by the amount of training the teachers receive regarding implementation of these programs. National and local curricula have various lengths of training for these programs. Some of the sessions are held for one day and do not have follow-up classes. Positive Action curriculum has three independent training workshops plus a publicity workshop outlined in an easy to use kit. This kit can be reused each year to train and motivate faculty, staff, and parents and to keep the community informed of the programs' success. In comparison, Discover has manuals which contain useful strategies that can be used for preparation, actual teaching, and follow-through. Supplementary materials can be purchased if the teachers are unfamiliar with classroom strategies that are considered essential to the teachings of the curricula. Besides, who does the actual training of the teachers? Are these individuals representatives of the program or are they the principals of the school?

Positive Action curriculum includes materials for building a positive learning environment while incorporating cooperative efforts from the students, parents, teachers, support staff, and community. Substance use among adolescents is not an isolated phenomenon so there should be a cooperative effort between the students, families, educators, peers, and communities in prevention programs.



These cooperative efforts can prevent negative consequences such as lower grades, less enjoyment of school, or a negative relationship with teachers (Pendorf, 1992). If adolescent substance use is allowed to turn to abuse, than problem behaviors such as delinquency, precocious sexual behavior, deviant attitudes, or school dropout (Newcomb & Bentler, 1989) may occur which have negative consequences not only for the students but also for their families and the communities.

There is a difference in the length of programs. Positive Action curriculum is taught the entire year and more than one teacher is encouraged to incorporate the self-concept strategies into their lesson plans so these tactics are reinforced throughout the year. In comparison, Discover curriculum is taught in a fifteen week interval. The students are taught the self-esteem strategies and drug information in a short period of time with no reinforcement after completion of the program. The attitudes of individuals develop over time and they are reinforced by the experiences students have with their parents, the media, and peers. Consequently, short-term prevention programs may be unable to effect any change in the attitudes of adolescents toward substance use (Lignell & Davidizar, 1991).

Overall, there was an increase of knowledge between the junior and senior high students which is to be expected because they have been exposed to increased education. However, when these programs were investigated for changes in the knowledge level of junior and senior high students, only the Me-

Me of the elementary curricula and Health curriculum of the junior high curricula showed a significant change. The lack of change in the knowledge level of junior and senior high students may be due to the material being presented at a higher level and the students are not able to grasp the concepts or they do not retain what they have learned in short-term prevention programs.

### **Recommendations**

#### **Recommendations to Educators**

If substance prevention programs are to be effective, they must be presented in such a way that they do not alienate the students. In the past, teaching techniques such as having recovering addicts give testimony about the perils of substance use and using scare tactics did not decrease drug use (Bosworth & Sailes, 1993). Instead through the use of active participation, educators need to teach students the process of how to make rational decisions regarding the choices they will encounter in teen years.

Frequently school-based substance prevention programs have a limited reach to the students who are regularly using substances. This limitation may be due to differences in gender, social class, or the students may be more interested in taking part in activities outside the school. Adolescents who are heavy users of alcohol have increased involvement with going out, dating, attending movies, partying, searching for jobs, and working part-time. These students may be alienated from school and teachers because they do not enjoy school, have lower grades, or have poor relationships with the faculty (Pendorf, 1992). Educators can

reach these students by focusing on the peer culture which may be influencing their use of substances.

It is critical that parents also be educated on the effects of substance use since the attitudes they have toward alcohol or drugs are determinants of their children's substance using behaviors. Educators can provide this information through either handouts that are mailed or seminars for parents and their children. Parents would learn about drugs commonly used by adolescents, health risks, warning signs of drug use, polydrug use, and the difficulties adolescents encounter as they attempt to make the transition from childhood to adulthood.

Educators need to be taught how to implement the different strategies used in prevention curricula because they may not be adequately prepared in teaching these methods. Training for the educators should not be limited to a one day session, but instead should have follow-up sessions which allow them to ask questions or talk to their peers who also teach the same prevention programs.

Adolescents drink for a variety of reasons which may include seeking pleasure, attempting to relax, eluding pain, or to be sociable (Lignell & Davidhizar, 1991). Since adolescents are looking for excitement or fun, maybe prevention programs in the school should coordinate activities that meet the party-like atmosphere. This way students would be encouraged to meet their goals of having fun and excitement while socializing with their peers. These social gatherings would also allow for a relief of stress and may prevent episodes of rebellion as well (Thombs, Beck, Mahoney, Bromley, & Bezon, 1994). Would

adolescents take part in activities at schools that do not allow the consumption of alcohol? Would the students feel inhibited and not be able to have fun because these activities would be monitored by teachers or parents?

### **Recommendations for Public Policy**

Due to the increases and decreases in funding, many prevention curricula have not built in long-term evaluations to monitor the effectiveness of the programs. The Drug-Free Schools and Communities Act of 1986 and the 1989 Amendments Act require states to evaluate their drug education programs; most states have not completed the evaluations (Brandon, 1992; Pellow & Jengeleski, 1991). Federal agencies which administer funding to public schools need to coordinate substance prevention programs and require annual evaluations to monitor if the programs are effective and if federal monies are being spent wisely.

Positive Action showed positive changes in most of the behaviors and attitudes of junior high students who were taught that curriculum. In contrast, there was no outstanding changes noted in the comparison of junior high curricula. Since there were no major changes, does that mean prevention curricula are meeting the goals of the programs? Or does it mean there are other physical, psychological, social, or cultural factors that need to be taken into consideration and that the prevention programs are really not effective in decreasing substance use?

Drug education in the United States has a low status and if policy makers are truly interested in decreasing adolescent substance use, then they should

distribute federal funds to groups who are truly at risk. At the present, these funds are being diluted because of the attempts to educate the whole adolescent population. Instead, the high risk groups should be identified and then a combination of educational programs can be utilized along with mass media campaigns, family, community, and environmental strategies (Lamarine, 1993).

### **Recommendations to Researchers**

A recommendation for further research would be to conduct a longitudinal study which investigates the development of substance using behaviors, attitudes, and knowledge of students as they progress from seventh through twelfth grade.

Many schools use local curriculum which is developed by individuals in that school or district. The merits of such prevention programs need to be studied further. For instance, were these programs developed because the educators wanted to meet the needs of the high risk population in their community or was their choice financially motivated?

There is also a need to explore the kinds of training the educators of substance prevention programs receive and how their training impacts the implementation of the curricula. Some of the commercially available prevention programs are including many more interactive strategies, and these activities may be difficult for educators to implement. Also, how much preparation time are educators given to prepare for the substance prevention courses?

Even if educators are properly trained to teach these programs, do they implement these programs as intended or do they adapt the activities to their

personal teaching styles? Besides, what values and beliefs do the educators who teach these prevention curricula have towards substance use? Educators need to be careful of the behaviors and attitudes they display inside and outside the classroom when teaching prevention curricula. They can not expect the students to adhere to what he/she is teaching if the educator is either getting high or drunk when they are not in the classroom. Further research is needed on how educators implement these curricula in their classrooms.

Many of schools reported using a combination of curricula. Additional research should be completed to investigate if the concepts of the curricula used match or if these curricula were chosen because of financial restraints.

Further research needs to be completed on the length of prevention programs in relation to their effectiveness in making positive changes in the behaviors, attitudes, and knowledge of students. Behaviors and attitudes form at a very young age so programs that are implemented only 3 to 15 weeks during the year may not be effective in making any changes in these areas.

In closing, early maladaptation to school has been an indicator of psychiatric and social dysfunction later in the individual's life. Surveys concerning substance using behaviors, attitudes, and knowledge level of younger elementary children should be conducted and then strategies from prevention curricula should be incorporated into the education of the youth at risk. Substance prevention education of children should not be left solely to the schools. If there is ever going to be a decrease in the substance using behaviors of adolescents and a

change in their attitudes, then there needs to be a cooperative effort between teachers, principals, families, communities, local, state, and federal agencies to prevent the use of substances.

## APPENDICES



APPENDIX A  
NORTH DAKOTA YOUTH ALCOHOL AND DRUG SURVEYS  
1990 & 1993

## North Dakota Youth Alcohol and Drug Survey

Study Conducted By

NORTH DAKOTA DEPARTMENT OF PUBLIC INSTRUCTION

in cooperation with the

DIVISION OF ALCOHOLISM AND DRUG ABUSE  
NORTH DAKOTA DEPARTMENT OF HUMAN SERVICES

Thank you for participating in the North Dakota Youth Alcohol and Drug Survey.

The answers you and other students provide will help us to better understand young people and to design more meaningful educational programs about alcohol and other drugs. Several thousand students across North Dakota are participating in this study.

We will need about 45 minutes or less of your time to answer these questions. DO NOT SIGN YOUR NAME on the questionnaire or on the answer sheet. You need not be concerned that anyone will know how you have answered the questions.

**DIRECTIONS**

- ... This is not a test and you are not timed on any questions. However, you should not skip around but, instead, start with question 1 and go through all of the questionnaire.
- ... You should have a survey booklet and an answer sheet in front of you.
- ... On the answer sheet you will find a section that says "Special Codes." The individual handing out the forms will place your "Special Code" on the blackboard. Please enter the number in the "Special Codes" section.
- ... The questions or statements in this survey are followed by several responses. For each question or statement, you should fill in only one numbered circle beneath the letter on your answer sheet that corresponds to the one answer you think is correct or best reflects your opinion or situation.
- ... Fill in only one circle for each question. Please fill in the circle completely. A pencil should be used rather than an ink pen. Completely erase any answer you wish to change.
- ... When the class has completed the questionnaire, pass all of the questionnaires to the individual who handed out the questionnaires. Then pass in the answer sheets to the same individual who will place all answer sheets in a brown envelope and he/she will seal it. No one at your school will see or read your answers.
- ... You are not required to answer the survey.
- ... We think you will enjoy completing the questionnaire.

The questions in this section ask you to identify yourself—not by name—but by age, grade level, etc.

1. I am . . .
  - (a) Male
  - (b) Female
  
2. I am in the . . .
  - (a) 7th grade
  - (b) 8th grade
  - (c) 9th grade
  - (d) 10th grade
  - (e) 11th grade
  - (f) 12th grade
  
3. I am . . .
  - (a) White
  - (b) Black
  - (c) American Indian
  - (d) Asian
  - (e) Hispanic
  - (f) Other
  
4. My school grades are usually . . .
  - (a) A's
  - (b) A's and B's
  - (c) B's
  - (d) B's and C's
  - (e) C's
  - (f) C's and D's
  - (g) D's and below
  
5. I live . . .
  - (a) On a farm, ranch or in the country
  - (b) In a small town or city
  
6. Each week I usually spend . . .
  - (a) Less than \$5
  - (b) \$5 to \$14
  - (c) \$15 to \$19
  - (d) \$20 to \$39
  - (e) \$40 or more
  
7. I currently live with . . .
  - (a) Both parents
  - (b) Father only
  - (c) Mother only
  - (d) Other

8. I am ...
  - (a) The only child
  - (b) The youngest child
  - (c) A middle child
  - (d) The oldest child
  
9. Religion in my home is ...
  - (a) Very important
  - (b) Pretty important
  - (c) A little important
  - (d) Not important
  
10. I participate in ...
  - (a) All school activities
  - (b) Most school activities
  - (c) Some school activities
  - (d) No school activities
  
11. My parents are ...
  - (a) Very strict
  - (b) Strict
  - (c) Not very strict
  - (d) Not strict at all
  
12. I agree with my parents ...
  - (a) Almost always
  - (b) Usually
  - (c) Sometimes
  - (d) Seldom
  - (e) Never
  
13. How many good friends do you have?
  - (a) None
  - (b) One or two
  - (c) Many
  - (d) Almost everyone in my class or school is a good friend
  
14. On the average over the school year, how many hours per week do you work in a paid job?
  - (a) None
  - (b) 10 or fewer hours
  - (c) 11-20 hours
  - (d) 21-40 hours
  - (e) More than 40 hours

The questions in this section ask about your experience with alcohol (beer, wine and liquor); marijuana (grass, pot, etc.) and other drugs (speed, Angel Dust, LSD, cocaine, crack, steroids, etc., not aspirin or drugs given to you by your doctor).

Remember, your individual answer sheet will NOT be available to ANYONE.

Please answer questions 15-20 according to the following key:

- (a) Never
  - (b) 9 or younger
  - (c) 10 or 11
  - (d) 12 or 13
  - (e) 14 or 15
  - (f) 16 or 17
  - (g) 18 or older
  - (h) I don't remember
15. How old were you when you had your first drink of alcohol, such as wine, beer, liquor (not just a sip or taste)?
  16. How old were you when you tried/smoked marijuana (grass, pot) for the first time?
  17. How old were you when you started using steroids?
  18. How old were you when you tried/used other drugs such as speed, Angel Dust, LSD, cocaine, crack etc., for the first time? (This does not include aspirin or drugs given by a doctor or pharmacist.)
  19. How old were you when you started smoking tobacco cigarettes on a regular basis? (Regular basis means 1/2 pack or more than 1/2 pack per week.)
  20. How old were you when you began to use/chew snuff or chewing tobacco on a regular basis (at least one can or pouch per month)?
  21. How often do you smoke cigarettes?
    - (a) I have never smoked cigarettes
    - (b) Only smoked once or twice, ever
    - (c) Used to smoke, but stopped
    - (d) Smoke less than a pack a day
    - (e) Smoke a pack or more a day
  22. Where do you get cigarettes most often?
    - (a) I do not smoke cigarettes
    - (b) Convenience store
    - (c) Grocery store
    - (d) Vending machine
    - (e) Friends buy them for me
    - (f) Friends give them to me

23. In the past month (30 days) how often did you use/chew snuff or chewing tobacco?
- (a) Never
  - (b) Rarely (5 times or less)
  - (c) Sometimes (6-20 times)
  - (d) Almost every day
  - (e) Every day

Please answer questions 24-27 according to the following key:

- (a) I do not drink alcohol, use marijuana or take drugs
  - (b) Less than once a month
  - (c) Once a month
  - (d) Once a week
  - (e) Several times a week
  - (f) Every day
24. How often do you now drink alcohol (beer, wine, liquor)?
25. How often do you now use/smoke marijuana (grass, pot)?
26. How often do you use steroids?
27. How often do you now take/use other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?

Please answer questions 28-31 according to the following key:

- (a) I do not drink alcohol, use marijuana or take drugs
  - (b) I have not drunk alcohol, used marijuana or taken drugs in the past month
  - (c) I have drunk alcohol, used marijuana or taken drugs in the past month but have not been drunk, "stoned" or "high"
  - (d) Once
  - (e) 2 or 3 times
  - (f) 4 or more times
28. In the past month, how many times have you been drunk, "bombed" or very high on alcohol (beer, wine, liquor)?
29. In the past month, how many times have you been "high" or "stoned" on marijuana (grass, pot)?
30. In the past month, how many times have you used steroids?
31. In the past month, how many times have you been "high" or "stoned" on other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?

Please answer questions 32-35 according to the following key:

- (a) I do not drink alcohol, use marijuana or take drugs
- (b) I have not drunk alcohol, used marijuana or taken drugs in the past six months
- (c) I have drunk alcohol, used marijuana or taken drugs in the past six months but have not been drunk, "stoned" or "high"
- (d) Once or twice
- (e) 3-6 times
- (f) 7-10 times
- (g) 11-15 times
- (h) More than 15 times

- 32. In the past six months, how many times have you been drunk, "bombed" or very high on alcohol (beer, wine, liquor)?
- 33. In the past six months, how many times have you been "high" or "stoned" on marijuana (grass, pot)?
- 34. In the past six months, how many times have you used steroids?
- 35. In the past six months, how many times have you been "high" or "stoned" on other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?

Please answer questions 36-39 according to the following key:

- (a) None
- (b) Only a few
- (c) About half
- (d) Most of them
- (e) All of them

- 36. About how many people in your grade/class drink alcohol (beer, wine, liquor) regularly?
- 37. About how many people in your grade/class use/smoke marijuana (grass, pot) regularly?
- 38. About how many people in your grade/class use steroids?
- 39. About how many people in your grade/class use/take other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.) regularly?
- 40. In your opinion which one of the areas below do you think is the biggest problem in your school?
  - (a) Alcohol use
  - (b) Marijuana use
  - (c) Other drug use (speed, Angel Dust, LSD, cocaine, crack, steroids, etc.).
  - (d) More than one of these are problems
  - (e) None of these are problems
  - (f) I don't know

Please answer questions 41-44 according to the following key:

- (a) I do not drink alcohol, take marijuana, use other drugs
- (b) From my home with my parent's permission
- (c) From my home without my parent's permission
- (d) From a friend who gives it to me
- (e) From a friend or someone else who buys it for me
- (f) I buy it myself from a store (dealer/seller)
- (g) Other

- 41. How do you usually get alcohol (beer, wine, liquor)? (Mark one answer.)
- 42. How do you usually get marijuana (grass, pot)? (Mark one answer.)
- 43. How do you usually get steroids? (Mark one answer.)
- 44. How do you usually get drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)? (Mark one answer.)

Please answer questions 45-48 according to the following key:

- (a) No one
- (b) 1 or 2 persons
- (c) 3 to 5 persons
- (d) 6 or more persons
- (e) I don't know, I have never tried to get alcohol/marijuana/steroids/other drugs

- 45. How many persons do you know who would give or sell you alcohol (beer, wine, liquor)?
- 46. How many persons do you know who would give or sell you marijuana (grass, pot)?
- 47. How many persons do you know who would give or sell you steroids?
- 48. How many persons do you know who would give or sell you other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?

Please answer questions 49-52 according to the following key:

- (a) Always easy
- (b) Usually easy
- (c) Usually hard
- (d) Always hard
- (e) I don't know

- 49. Is alcohol (beer, wine, liquor) easy or hard for you to get?
- 50. Is marijuana (grass, pot) easy or hard for you to get?
- 51. Are steroids easy or hard for you to get?
- 52. Are other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.) easy or hard for you to get?



53. What do you think is the main reason that some young people use alcohol or other drugs? (Fill in only one reason.)
- (a) To get pleasure, feel good, get high (excitement and kicks)
  - (b) To go along with what their friends are doing
  - (c) To help solve personal problems
  - (d) To relieve boredom
  - (e) To relax
  - (f) To satisfy curiosity
  - (g) Other

Please answer questions 54-57 according to the following key:

- (a) I know nothing about alcohol/marijuana/steroids/other drugs
  - (b) I know very little about alcohol/marijuana/steroids/other drugs
  - (c) I know more than many people do about alcohol/marijuana/steroids/other drugs
  - (d) I know a lot about alcohol/marijuana/steroids/other drugs
54. How much do you think you know about alcohol (beer, wine, liquor)?
55. How much do you think you know about marijuana (grass, pot)?
56. How much do you think you know about steroids?
57. How much do you think you know about other drugs (speed, Angel Dust, LSD, cocaine, heroin, crack, etc.)?
58. Which one of these alcoholic beverages do you drink most often? (Mark one answer.)
- (a) I do not drink alcoholic beverages
  - (b) Beer (malt liquor)
  - (c) Wine, wine cooler
  - (d) Liquor (whiskey, vodka, gin, etc.)
  - (e) Whatever I can get
59. How often do you feel unhappy about yourself?
- (a) Frequently
  - (b) Occasionally
  - (c) Hardly ever
  - (d) Never
60. Do you usually turn off to people who give talks on alcoholism or drug abuse?
- (a) Yes
  - (b) No

Please answer questions 61-64 according to the following key:

- (a) I do not drink alcohol/smoke marijuana/use steroids/use drugs
  - (b) Yes
  - (c) No
61. Are you satisfied with the way you drink alcohol (beer, wine, liquor)?

62. Are you satisfied with the way you use/smoke marijuana (grass, pot)?
63. Are you satisfied with the way you use steroids?
64. Are you satisfied with the way you take/use other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?

Please answer questions 65-69 according to the following key:

- (a) None
  - (b) Once
  - (c) 2-3 times
  - (d) 4-5 times
  - (e) 6 or more times
65. During the past year, how many times have you gotten into trouble with your teachers or principal because of your drinking?
  66. During the past year, how many times have you gotten into difficulties of any kind with your friends because of your drinking?
  67. During the past year, how many times have you driven when you've had more than two drinks?
  68. During the past year, how many times have you gotten into trouble with the police because of your drinking?
  69. During the past year, have you ridden in a car where the driver had been drinking?
  70. Have you been embarrassed by your behavior when you were drinking?
    - (a) I do not drink
    - (b) No
    - (c) Very seldom
    - (d) Occasionally
    - (e) It's a problem for me
  71. Do your close friends drink fairly regularly?
    - (a) They do not drink at all
    - (b) Some of them do
    - (c) Most of them do
    - (d) All of them do
  72. Because of drinking, my friends have had trouble in school.
    - (a) Never
    - (b) Rarely
    - (c) Every now and then
    - (d) Quite regularly
    - (e) All too often

73. Whenever your friends are drinking, what is your response?
- (a) I try to avoid them
  - (b) I try to convince them not to drink or to go easy
  - (c) I drink with them but I don't like that
  - (d) I drink with them and enjoy it
  - (e) I drink and encourage them to drink
74. Would you participate in a discussion group about alcohol/drug use?
- (a) No
  - (b) Maybe
  - (c) Probably
  - (d) Definitely "yes"
  - (e) Do not know
75. How often do you go to church?
- (a) Never
  - (b) Once or twice a year
  - (c) Once a month
  - (d) Regularly
76. How do you think your parents (guardians) feel about people your age drinking?
- (a) They object strenuously
  - (b) They're not sure what to think
  - (c) They just shrug their shoulders
  - (d) They don't seem to mind
  - (e) They think it's okay

Please answer questions 77-78 according to the following key:

- (a) No opportunity to observe
  - (b) Does not drink
  - (c) Is a light drinker
  - (d) Drinks regularly but has not had any problems
  - (e) Drinks quite a lot but only occasionally has problems
  - (f) Drinks heavily and it often causes problems for him/her
77. What have you observed regarding your father's drinking?
78. What have you observed regarding your mother's drinking?
79. What do your parents think of your closest friends?
- (a) They don't know my friends
  - (b) They're rather lukewarm
  - (c) They think my friends are okay
  - (d) They really like my friends

80. Which of the following best characterizes your thoughts about drinking?
- (a) I believe it is wrong to drink
  - (b) Drinking is illegal so I tend to avoid doing that
  - (c) It's natural for people my age to experiment with drinking
  - (d) I drink without thinking much about its effects
  - (e) I drink with the others but sometimes I worry about what happens
81. Have you ever thought that you might be drinking too much?
- (a) No, I don't drink
  - (b) No, I drink very little
  - (c) Not really
  - (d) Now and then I wonder about it
  - (e) I really do need to watch it
82. Do you drink less now than you did a year ago?
- (a) I do not drink
  - (b) I drink about the same as a year ago
  - (c) I drink less than a year ago
  - (d) I drink more than a year ago
  - (e) I stopped drinking altogether
83. Are you "friendlier" at a party when you can drink?
- (a) I do not drink
  - (b) It makes no difference to me
  - (c) Sometimes I am
  - (d) Usually I prefer to drink
  - (e) I need a drink to talk with people
84. If you felt a need to talk with someone about a drinking problem, it would most likely be with
- (a) A close friend
  - (b) A brother or sister
  - (c) A parent or guardian
  - (d) A priest or minister
  - (e) A counselor
  - (f) A teacher
85. Which of the following is closest to your career plans after high school?
- (a) I intend to get a job
  - (b) I intend to enter military service
  - (c) I intend to go to vocational school
  - (d) I intend to go to college
  - (e) I'm unsure of what I'll do
86. In your opinion, does your school/community have any effective program about alcohol and drugs?
- (a) I am not sure if there is a program
  - (b) It's not very active
  - (c) It's quite good as far as it goes
  - (d) Yes, it's a strong, useful program

87. In your opinion, is counseling helpful to students who have problems with alcohol or drugs?  
 (a) No  
 (b) Yes  
 (c) Possibly  
 (d) Not sure
88. In your opinion, is counseling helpful to adults who have problems with alcohol or drugs?  
 (a) No  
 (b) Yes  
 (c) Possibly

This section asks some true or false statements about alcohol, marijuana, steroids and other drugs. There is a true or false answer for each question. Mark "A" for True, "B" for False and "C" if you are not sure about the answer.

89. Alcohol is a drug.  
 90. Alcoholism is a disease/illness.  
 91. Hashish is a stronger form of marijuana.  
 92. Alcohol and barbiturates (sleeping pills) have similar effects.  
 93. Marijuana does not affect driving.  
 94. Alcoholics are usually drunk.  
 95. A can of beer is much less intoxicating than an average drink of liquor.  
 96. Alcohol is a depressant drug.  
 97. Men and women react the same to alcohol.  
 98. Alcoholism can be treated successfully.  
 99. Addiction is a physical dependence.  
 100. Alcoholism takes years to develop.  
 101. People cannot become addicted to drugs given by a doctor.  
 102. A pregnant woman is more likely to have a deformed baby if she drinks alcohol.  
 103. Alcohol is the same type of drug as tranquilizers.  
 104. Cocaine is not addicting.  
 105. LSD is a stimulant.  
 106. Coffee, cigarettes and cola contain drugs that are stimulants.  
 107. PCP (Angel Dust) is a tranquilizer.  
 108. People do not become dependent upon marijuana.  
 109. Drinking coffee or exercising helps sober up people who have been drinking.  
 110. Mixing alcohol and other drugs is not harmful.  
 111. Addiction is only a psychological dependency.  
 112. Alcohol is a stimulant.  
 113. Alcohol affects all people the same way.  
 114. Drug dependency is the same as drug addiction.  
 115. "Black Beauties" are "look-alike" drugs.  
 116. Smoking cigarettes can cause serious diseases in people of all ages.  
 117. Using snuff or chewing tobacco may have harmful side effects.  
 118. The disadvantages of steroids outweigh the advantages.  
 119. Using steroids may have harmful side effects.

Thank you for your cooperation!

**NORTH DAKOTA YOUTH ALCOHOL AND DRUG SURVEY**

Study Conducted By

NORTH DAKOTA DEPARTMENT OF PUBLIC INSTRUCTION

Thank you for participating in the North Dakota Youth Alcohol and Drug Survey.

The answers you and other students provide will help us to better understand young people and to design more meaningful educational programs about alcohol and other drugs. Several thousand students across North Dakota are participating in this study.

We will need about 50 minutes or less of your time to answer these questions. DO NOT PUT YOUR NAME on the questionnaire or on the answer sheet. You need not be concerned that anyone will know how you have answered the questions.

**DIRECTIONS**

- This is not a test and you are not timed on any questions. However, you should not skip around but, instead, start with question 1 and go through all of the questionnaire.
- You should have a survey booklet and an answer sheet in front of you.
- On the answer sheet you will find a section that says "Special Codes." The individual handing out the forms will place your "Special Code" on the blackboard. Please enter the number in the "Special Codes" section.
- The questions or statements in this survey are followed by several responses. For each question or statement, you should fill in only one numbered circle beneath the letter on your answer sheet that corresponds to the one answer you think is correct or best reflects your opinion or situation.
- Fill in only one circle for each question. Please fill in the circle completely. A pencil should be used rather than ballpoint pen. Completely erase any answer you wish to change.
- You are not required to answer the survey.
- When the class has completed the questionnaire, pass all of the questionnaires to the individual who handed out the questionnaires. Then pass in the answer sheets to the same individual who will place all answer sheets in a brown envelope and he/she will seal it. No one at your school will see or read your answers.

The questions in this section ask you to identify yourself—not by name—but by age, grade level, etc.

- I am ...
  - Male
  - Female
- I am in the ...
  - 7th grade
  - 8th grade
  - 9th grade
  - 10th grade
  - 11th grade
  - 12th grade
- I am ...
  - White
  - Black
  - American Indian
  - Asian
  - Hispanic
  - Other
- My school grades are usually ...
  - A's
  - A's and B's
  - B's
  - B's and C's
  - C's
  - C's and D's
  - D's and below
- I live ...
  - On a farm, ranch, or in the country
  - In a small town or city (less than 2,500 population)
  - In a medium size city (between 2,501 and 10,000)
  - In a larger city (over 10,000)
- Each week I usually spend ...
  - Less than \$5
  - \$5 to \$14
  - \$15 to \$19
  - \$20 to \$39
  - \$40 or more
- I currently live with ...
  - Both parents
  - Father only
  - Mother only
  - Other
- Of the following school activities (like varsity sports, band, school newspaper, cheerleading, and so forth), I participate in
  - No activities
  - 1 activity
  - 2 activities
  - 3 activities
  - 4 activities
  - 5 activities
  - More than 5 activities

- How old were you when you began to use/chew snuff or chewing tobacco on a regular basis (at least one can or pouch per month)?
  - I have never smoked cigarettes
  - Only smoked once or twice, ever
  - Used to smoke, but stopped
  - Smoke less than a pack a day
  - Smoke a pack or more a day
- How often do you smoke cigarettes?
  - I do not smoke cigarettes
  - Convenience store
  - Grocery store
  - Vending machine
  - Friends buy them for me
  - Friends give them to me
- In the past month (30 days), how often did you smoke cigarettes?
  - Never
  - Rarely (5 times or less)
  - Sometimes (6-20 times)
  - Almost every day
  - Every day
- In the past month (30 days), how often did you use/chew snuff or chewing tobacco?
  - Never
  - Rarely (5 times or less)
  - Sometimes (6-20 times)
  - Almost every day
  - Every day
- Where do you get snuff or chewing tobacco most often?
  - I do not use snuff or chewing tobacco
  - Convenience store
  - Grocery store
  - Friends buy it for me
  - Friends give it to me

9. On the average over the school year, how many hours per week do you work in a paid job?

- None
- 10 or fewer hours
- 11-20 hours
- 21-40 hours
- More than 40 hours

The questions in this section ask about your experience with alcohol (beer, wine, and liquor), marijuana (grass, pot, etc.), and other drugs (speed, Angel Dust, LSD, cocaine, crack, steroids, etc., not aspirin or drugs given to you by your doctor).

Remember, your individual answer sheet will NOT be available to ANYONE.

Please answer questions 10-15 according to the following key:

- Never
- 9 or younger
- 10 or 11
- 12 or 13
- 14 or 15
- 16 or 17
- 18 or older
- I don't remember

10. How old were you when you had your first drink of alcohol, such as wine, beer, liquor (not just a sip or taste)?

11. How old were you when you tried/smoked marijuana (grass, pot) for the first time?

12. How old were you when you started using steroids?

13. How old were you when you tried/used other drugs such as speed, Angel Dust, LSD, cocaine, crack, etc., for the first time? (This does not include aspirin or drugs given by a doctor or pharmacist.)

14. How old were you when you started smoking tobacco cigarettes on a regular basis? (Regular basis means 1/2 pack or more than 1/2 pack per week.)

15. How old were you when you began to use/chew snuff or chewing tobacco on a regular basis (at least one can or pouch per month)?

- I have never smoked cigarettes
- Only smoked once or twice, ever
- Used to smoke, but stopped
- Smoke less than a pack a day
- Smoke a pack or more a day

17. Where do you get cigarettes most often?

- I do not smoke cigarettes
- Convenience store
- Grocery store
- Vending machine
- Friends buy them for me
- Friends give them to me

18. In the past month (30 days), how often did you smoke cigarettes?

- Never
- Rarely (5 times or less)
- Sometimes (6-20 times)
- Almost every day
- Every day

19. In the past month (30 days), how often did you use/chew snuff or chewing tobacco?

- Never
- Rarely (5 times or less)
- Sometimes (6-20 times)
- Almost every day
- Every day

20. Where do you get snuff or chewing tobacco most often?

- I do not use snuff or chewing tobacco
- Convenience store
- Grocery store
- Friends buy it for me
- Friends give it to me

Please answer questions 21-25 according to the following key:

- I do not drink alcohol, use marijuana, or take drugs
- Less than once a month
- Once a month
- Once a week
- Several times a week
- Every day

21. How often do you drink alcohol (beer, wine, liquor)?

22. How often do you use/smoke marijuana (grass, pot)?

23. How often do you use steroids?
24. How often do you take/use other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?
25. How often do you use non-prescription, non-medical inhalants?
- Please answer questions 26-29 according to the following key:
- (a) I do not drink alcohol, use marijuana, or take drugs
  - (b) I have not drunk alcohol, used marijuana, or taken drugs in the past six months
  - (c) I have drunk alcohol, used marijuana, or taken drugs in the past six months but have not been drunk, "stoned," or "high"
  - (d) Once or twice
  - (e) 3-6 times
  - (f) 7-10 times
  - (g) 11-15 times
  - (h) More than 15 times
26. In the past six months, how many times have you been drunk, "bombed," or very high on alcohol (beer, wine, liquor)?
27. In the past six months, how many times have you been "high" or "stoned" on marijuana (grass, pot)?
28. In the past six months, how many times have you used steroids?
29. In the past six months, how many times have you been "high" or "stoned" on other drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)?
- Please answer questions 30-33 according to the following key:
- (a) I do not drink alcohol, take marijuana, use other drugs
  - (b) From my home with my parents' permission
  - (c) From my home without my parents' permission
  - (d) From a friend who gives it to me
  - (e) From a friend or someone else who buys it for me
  - (f) I buy it myself from a store (dealer/seller)
  - (g) Other
30. How do you usually get alcohol (beer, wine, liquor)? (Mark one answer.)
31. How do you usually get marijuana (grass, pot)? (Mark one answer.)
32. How do you usually get steroids? (Mark one answer.)
33. How do you usually get drugs (speed, Angel Dust, LSD, cocaine, crack, etc.)? (Mark one answer.)
34. What do you think is the main reason that some young people use alcohol or other drugs? (Fill in only one reason.)
- (a) To get pleasure, feel good, get high (excitement and kicks)
  - (b) To go along with what their friends are doing
  - (c) To help solve personal problems
  - (d) To relieve boredom
  - (e) To relax
  - (f) To satisfy curiosity
  - (g) Other
35. Which one of these alcoholic beverages do you drink most often? (Mark one answer.)
- (a) I do not drink alcoholic beverages
  - (b) Beer (malt liquor)
  - (c) Wine, wine cooler
  - (d) Liquor (whiskey, vodka, gin, etc.)
  - (e) Whatever I can get
36. How often do you feel unhappy about yourself?
- (a) Frequently
  - (b) Occasionally
  - (c) Hardly ever
  - (d) Never
37. Do you usually turn off to people who give talks on alcoholism or drug abuse?
- (a) Yes
  - (b) No
- Please answer questions 38-42 according to the following key:
- (a) None
  - (b) Once
  - (c) 2-3 times
  - (d) 4-5 times
  - (e) 6 or more times
38. During the past year, how many times have you gotten into trouble with your teachers or principal because of your drinking?
39. During the past year, how many times have you gotten into difficulties of any kind with your friends because of your drinking?
40. During the past year, how many times have you driven when you've had more than two drinks?
41. During the past year, how many times have you gotten into trouble with the police because of your drinking?
42. During the past year, have you ridden in a car where the driver had been drinking?
43. Have you been embarrassed by your behavior when you were drinking?
- (a) I do not drink
  - (b) No
  - (c) Very seldom
  - (d) Occasionally
  - (e) It's a problem for me
44. Do your close friends drink fairly regularly?
- (a) They do not drink at all
  - (b) Some of them do
  - (c) Most of them do
  - (d) All of them do
45. Because of drinking, my friends have had trouble in school.
- (a) Never
  - (b) Rarely
  - (c) Every now and then
  - (d) Quite regularly
  - (e) All too often
46. Whenever your friends are drinking, what is your response?
- (a) I try to avoid them
  - (b) I try to convince them not to drink or to go easy
  - (c) I drink with them but I don't like that
  - (d) I drink with them and enjoy it
  - (e) I drink and encourage them to drink
47. Would you participate in a discussion group about alcohol/drug use?
- (a) No
  - (b) Maybe
  - (c) Probably
  - (d) Definitely "yes"
  - (e) Do not know



48. How do you think your parents (guardians) feel about people your age drinking?
- They object strenuously
  - They're not sure what to think
  - They don't seem to mind
  - They think it's okay

Please answer questions 49-50 according to the following key:

- No opportunity to observe
  - Does not drink
  - Is a light drinker
  - Drinks regularly but has not had any problems
  - Drinks quite a lot but only occasionally has problems
  - Drinks heavily and it often causes problems for him/her
49. What have you observed regarding your father's drinking?
50. What have you observed regarding your mother's drinking?
51. What have you observed regarding your parents' smoking?
- Neither smokes
  - Father smokes
  - Mother smokes
  - Both smoke
52. What do your parents think of your closest friends?
- They don't know my friends
  - They're rather lukewarm
  - They think my friends are okay
  - They really like my friends
53. Which of the following best characterizes your thoughts about drinking?
- I believe it is wrong to drink
  - Drinking is illegal so I tend to avoid doing that
  - It's natural for people my age to experiment with drinking
  - I drink without thinking much about its effects
  - I drink with the others but sometimes I worry about what happens
54. Have you ever thought that you might be drinking too much?
- No, I don't drink
  - No, I drink very little
  - Not really
  - Now and then I wonder about it
  - I really do need to watch it

55. If you felt a need to talk with someone about a drinking problem, it would most likely be with
- A close friend
  - A brother or sister
  - A parent or guardian
  - A priest or minister
  - A counselor
  - A teacher

56. Which of the following is closest to your career plans after high school?
- I intend to get a job
  - I intend to enter military service
  - I intend to go to vocational school
  - I intend to go to college
  - I'm unsure of what I'll do

57. In your opinion, does your school/community have any effective program about alcohol and drugs?
- I am not sure if there is a program
  - It's not very active
  - It's quite good as far as it goes
  - Yes, it's a strong, useful program

58. In your opinion, is counseling helpful to students who have problems with alcohol or drugs?
- No
  - Yes
  - Possibly

59. In your opinion, is counseling helpful to adults who have problems with alcohol or drugs?
- No
  - Yes
  - Possibly

This section asks some true or false statements about alcohol, marijuana, steroids, and other drugs. There is a true or false answer for each question. Mark "A" for True, "B" for False, and "C" if you are not sure about the answer.

60. Alcohol is a drug.
61. Alcoholism is a disease/illness.
62. Marijuana is stronger than it was 20 years ago.
63. Alcohol and barbiturates (sleeping pills) have similar effects.
64. Marijuana does not affect driving.
65. Alcoholics are usually drunk.
66. A can of beer is much less intoxicating than an average drink of liquor.
67. Alcohol is a depressant drug.

68. Men and women react the same to alcohol.
69. Alcoholism can be treated successfully.
70. Addiction is a physical dependence.
71. Alcoholism takes years to develop.
72. People cannot become addicted to drugs given by a doctor.
73. A pregnant woman is more likely to have a deformed baby if she drinks alcohol.
74. Alcohol is the same type of drug as tranquilizers.
75. Cocaine is not addicting.
76. LSD is a stimulant.
77. Coffee, cigarettes, and cola contain drugs that are stimulants.
78. PCP (Angel Dust) is a tranquilizer.
79. People do not become dependent upon marijuana.
80. Drinking coffee or exercising helps sober up people who have been drinking.
81. Mixing alcohol and other drugs is not harmful.
82. Addiction is only a psychological dependency.
83. Alcohol is a stimulant.
84. Alcohol affects all people the same way.
85. Drug dependency is the same as drug addiction.
86. The first time use of an inhalant can cause death.
87. Smoking cigarettes can cause serious diseases in people of all ages.
88. Using snuff or chewing tobacco may have harmful side effects.
89. The disadvantages of steroids outweigh the advantages.
90. Using steroids may have harmful side effects.

Thank you for your cooperation!

**APPENDIX B**

**TABLES 25-38**

Table 25

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Discover Curriculum

	1990 (N = 4,019)	1993 (N = 4,181)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking				
Nonuser	60.0%	57.5%	48.77	<.001
User	32.9%	31.0%		
Abuser	7.1%	11.6%		
Alcohol				
Nonuser	63.9%	59.8%	22.28	<.001
User	27.1%	28.5%		
Abuser	8.9%	11.9%		
Marijuana				
Nonuser	94.8%	92.0%	32.56	<.001
User	3.3%	4.2%		
Abuser	1.9%	3.8%		
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months				
0 times	82.9%	78.8%	63.10	<.001
1-6 times	14.1%	14.5%		
7+ times	2.9%	6.7%		
Marijuana: Times high last 6 months				
0 times	96.8%	93.2%	84.24	<.001
1-6 times	2.5%	3.3%		
7+ times	0.7%	3.5%		

(table continues)

	1990 (N = 4,019)	1993 (N = 4,181)	Chi-square	P
<b>Trouble at school</b>				
0 times	95.6%	94.8%	5.99	.050
1 time	2.3%	2.3%		
2+ times	2.1%	2.9%		
<b>Difficulty with friends</b>				
0 times	89.6%	89.9%	10.14	.006
1 time	6.3%	5.0%		
2+ times	4.1%	5.1%		
<b>Trouble with the police</b>				
0 times	96.5%	95.5%	9.11	.010
1 time	1.9%	1.9%		
2+ times	1.6%	2.6%		
<b>Drove a car after drinking</b>				
0 times	92.7%	91.3%	5.91	.052
1 time	2.7%	3.2%		
2+ times	4.6%	5.5%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	59.1%	58.9%	10.65	.005
1 time	14.9%	12.8%		
2+ times	26.0%	23.8%		
<b>Close friends drink regularly</b>				
None	51.5%	45.1%	40.02	<.001
Some	39.8%	43.3%		
All	8.7%	11.6%		

(table continues)

	1990 (N = 4,019)	1993 (N = 4,181)	Chi-square	<i>P</i>
Friends have trouble in school				
Never	75.1%	72.0%	11.93	.003
Rarely	16.5%	17.8%		
Regularly	8.4%	10.2%		
Attitudes				
Main reason				
Personal	48.5%	48.7%	.41	.816
Peer pressure	45.4%	45.6%		
Other	6.1%	5.7%		
Responses when friends are drinking				
Avoid them	47.1%	44.2%	10.11	.018
Convince not to drink	27.8%	28.4%		
Drink with but dislike	3.9%	3.7%		
Drink with and like it	21.1%	23.7%		
Thoughts about drinking				
Illegal	61.8%	58.4%	21.79	.015
Natural to experiment	26.6%	26.6%		
Unconcerned	11.6%	15.0%		
Embarrassed by behavior				
0 times	64.4%	62.8%	4.45	.108
1 time	24.6%	26.6%		
2+ times	11.1%	10.7%		

Table 26

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to DUSO Curriculum

	1990 (N = 410)	1993 (N = 474)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking				
Nonuser	68.3%	66.2%	.77	.680
Misuser	26.3%	28.9%		
Abuser	5.4%	4.9%		
Alcohol				
Nonuser	64.4%	61.2%	2.93	.231
Misuser	29.5%	29.7%		
Abuser	6.1%	9.1%		
Marijuana				
Nonuser	96.8%	97.0%	.40	.820
Misuser	2.0%	1.5%		
Abuser	1.2%	1.5%		
<b>Behavior Incidence</b>				
Alcohol: Times drunk last 6 months				
0 times	86.6%	81.6%	9.04	.011
1-6 times	11.9%	13.3%		
7+ times	1.5%	5.1%		
Marijuana: Times high last 6 months				
0 times	98.0%	96.8%	1.41	.495
1-6 times	1.5%	2.1%		
7+ times	0.5%	1.1%		

(table continues)

	1990 (N = 410)	1993 (N = 474)	Chi-square	P
<b>Trouble at school</b>				
0 times	96.8%	96.4%	.59	.746
1 time	1.5%	2.1%		
2+ times	1.7%	1.5%		
<b>Difficulty with friends</b>				
0 times	91.5%	89.0%	1.51	.470
1 time	4.1%	5.5%		
2+ times	4.4%	5.5%		
<b>Trouble with the police</b>				
0 times	97.8%	97.0%	.50	.777
1 time	1.0%	1.3%		
2+ times	1.2%	1.7%		
<b>Drove a car after drinking</b>				
0 times	92.7%	91.3%	5.91	.052
1 time	2.7%	3.2%		
2+ times	4.6%	5.5%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	59.1%	58.9%	10.65	.005
1 time	14.9%	12.8%		
2+ times	26.0%	23.8%		
<b>Close friends drink regularly</b>				
None drink	55.9%	46.5%	9.83	.007
Some drink	37.1%	41.9%		
All drink	7.1%			
<b>Friends have trouble in school</b>				
Never	75.1%	72.0%	11.92	.003
Rarely	16.5%	17.8%		
Regularly	8.4%	10.2%		

(table continues)

	1990 (N = 410)	1993 (N = 474)	Chi-square	<i>P</i>
<b>Attitudes</b>				
<b>Main reason</b>				
Personal	45.2%	44.5%	1.14	.566
Peer pressure	48.4%	50.6%		
Other	6.4%	4.9%		
<b>Responses when friends are drinking</b>				
Avoid them	49.4%	44.4%	5.89	.117
Convince not to drink	28.4%	27.6%		
Drink with but dislike	2.0%	4.2%		
Drink with and like it	20.2%	23.8%		
<b>Thoughts about drinking</b>				
Illegal	61.8%	58.4%	21.79	.015
Natural to experiment	26.6%	26.6%		
Unconcerned	11.6%	15.0%		
<b>Embarrassed by behavior</b>				
0 times	67.3%	64.3%	1.62	.444
1 time	25.6%	26.3%		
2+ times	7.1%	9.3%		



Table 27

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Me-Me Curriculum

	1990 (N = 370)	1993 (N = 414)	Chi-square	P
Behaviors Prevalence				
Smoking				
Nonuser	64.9%	63.3%	5.94	.051
Misuser	30.5%	27.8%		
Abuser	4.6%	8.9%		
Alcohol				
Nonuser	54.3%	58.6%	2.31	.315
Misuser	34.9%	29.8%		
Abuser	10.8%	11.6%		
Marijuana				
Nonuser	98.4%	96.1%	5.09	.079
Misuser	1.6%	2.9%		
Abuser	0.0%	1.0%		
Behaviors Incidence				
Alcohol: Times drunk last 6 months				
0 times	78.1%	79.5%	5.14	.077
1-6 times	18.6%	14.5%		
7+ times	3.3%	6.0%		
Marijuana: Times high last 6 months				
0 times	99.5%	98.6%	3.60	.165
1-6 times	0.5%	0.5%		
7+ times	0.0%	1.0%		

(table continues)

	1990 (N = 370)	1993 (N = 414)	Chi-square	P
<b>Trouble at school</b>				
0 times	96.5%	95.2%	.88	.643
1 time	2.7%	3.6%		
2+ times	0.8%	1.2%		
<b>Difficulty with friends</b>				
0 times	87.3%	89.6%	1.16	.560
1 time	6.2%	4.6%		
2+ times	6.5%	5.8%		
<b>Trouble with the police</b>				
0 times	98.4%	95.9%	4.26	.119
1 time	1.1%	2.9%		
2+ times	0.5%	1.2%		
<b>Drove a car after drinking</b>				
0 times	90.5%	89.4%	5.72	.057
1 time	4.6%	2.5%		
2+ times	4.9%	8.2%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	47.4%	58.2%	11.10	.004
1 time	17.5%	11.1%		
2+ times	35.0%	30.7%		
<b>Close friends drink regularly</b>				
None	41.4%	38.3%	8.16	.017
Some drink	49.5%	45.6%		
All drink	9.2%	16.0%		
<b>Friends have trouble in school</b>				
Never	77.4%	70.9%	8.32	.016
Rarely	17.3%	18.2%		
Regularly	5.4%	10.9%		

(table continues)

	1990 (N = 370)	1993 (N = 414)	Chi-square	P
<i>Attitudes</i>				
Main reason				
Personal	45.8%	46.8%	.96	.619
Peer pressure	46.9%	47.9%		
Other	7.3%	5.6%		
Responses when friends are drinking				
Avoid them	44.6%	45.3%	.05	.982
Convince not to drink	25.0%	24.5%		
Drink with but dislike	6.0%	5.4%		
Drink with and like it	24.5%	24.8%		
Thoughts about drinking				
Illegal	53.2%	60.0%	6.82	.033
Natural to experiment	31.1%	22.8%		
Unconcerned	15.7%	17.2%		
Embarrassed by behavior				
0 times	56.1%	60.8%	6.22	.045
1 time	27.5%	28.8%		
2+ times	16.4%	10.4%		

Table 28

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Operation Aware

	1990 (N = 790)	1993 (N = 841)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking				
Nonuser	62.2%	65.0%	9.00	.011
Misuser	31.9%	26.4%		
Abuser	5.8%	8.6%		
Alcohol				
Nonuser	62.0%	60.5%	7.25	.027
Misuser	29.5%	27.0%		
Abuser	8.5%	12.5%		
Marijuana				
Nonuser	96.8%	96.7%	.56	.757
Misuser	2.5%	2.4%		
Abuser	0.6%	1.0%		
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months				
0 times	81.4%	80.4%	5.92	.052
1-6 times	15.5%	14.1%		
7+ times	3.1%	5.5%		
Marijuana: Times high last 6 months				
0 times	97.7%	97.9%	1.38	.503
1-6 times	1.9%	1.4%		
7+ times	0.4%	0.7%		

(table continues)

	1990 (N = 790)	1993 (N = 841)	Chi-square	P
<b>Trouble at school</b>				
0 times	96.7%	96.8%	.55	.761
1 time	2.2%	1.8%		
2+ times	1.1%	1.4%		
<b>Difficulty with friends</b>				
0 times	89.7%	90.1%	.14	.933
1 time	6.0%	6.0%		
2+ times	4.3%	3.9%		
<b>Trouble with the police</b>				
0 times	97.8%	96.9%	1.84	.399
1 time	1.4%	1.7%		
2+ times	0.8%	1.4%		
<b>Drove a car after drinking</b>				
0 times	93.0%	91.0%	3.90	.142
1 time	3.4%	3.4%		
2+ times	3.6%	5.6%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	54.2%	58.3%	3.70	.158
1 time	15.4%	12.6%		
2+ times	30.5%	29.0%		
<b>Close friends drink regularly</b>				
None	48.7%	44.3%	4.92	.086
Some	41.7%	43.2%		
All	9.6%	12.5%		
<b>Friends have trouble in school</b>				
Never	78.9%	74.1%	8.10	.017
Rarely	15.9%	17.5%		
Regularly	5.2%	8.4%		

(table continues)

	1990 (N = 790)	1993 (N = 841)	Chi-square	<i>P</i>
<b>Attitudes</b>				
<b>Main reason</b>				
Personal	45.3%	46.0%	.09	.956
Peer pressure	49.4%	48.6%		
Other	5.3%	5.4%		
<b>Responses when friends are drinking</b>				
Avoid them	46.8%	51.5%	6.32	.097
Convince not to drink	26.8%	21.7%		
Drink with but dislike	4.2%	4.6%		
Drink with and like it	22.3%	22.2%		
<b>Thoughts about drinking</b>				
Illegal	60.5%	63.5%	2.07	.356
Natural to experiment	25.4%	22.5%		
Unconcerned	14.1%	14.0%		
<b>Embarrassed by behavior</b>				
0 times	62.4%	62.1%	.03	.985
1 time	26.1%	26.5%		
2+ times	11.4%	11.4%		

Table 29

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Positive Action Curriculum

	1990 (N = 673)	1993 (N = 802)	Chi-square	P
Behaviors Prevalence				
Smoking				
Nonuser	63.3%	69.2%	8.83	.012
Misuser	31.2%	24.3%		
Abuser	5.5%	6.5%		
Alcohol				
Nonuser	63.3%	70.1%	7.89	.019
Misuser	27.4%	22.1%		
Abuser	9.3%	7.7%		
Marijuana				
Nonuser	96.4%	96.9%	.29	.867
Misuser	2.7%	2.2%		
Abuser	0.9%	0.9%		
Behaviors Incidence				
Alcohol: Times drunk last 6 months				
0 times	81.1%	85.6%	8.24	.016
1-6 times	16.0%	10.9%		
7+ times	2.9%	3.5%		
Marijuana: Times high last 6 months				
0 times	97.9%	97.8%	2.23	.329
1-6 times	1.9%	1.6%		
7+ times	0.1%	0.6%		

(table continues)

	1990 (N = 673)	1993 (N = 802)	Chi-square	<i>P</i>
<b>Trouble at school</b>				
0 times	96.1%	97.3%	2.51	.286
1 time	2.8%	1.6%		
2+ times	1.0%	1.1%		
<b>Difficulty with friends</b>				
0 times	92.0%	92.9%	.58	.750
1 time	5.3%	4.5%		
2+ times	2.7%	2.6%		
<b>Trouble with the police</b>				
0 times	96.3%	98.0%	4.29	.117
1 time	2.4%	1.1%		
2+ times	1.3%	0.9%		
<b>Drove a car after drinking</b>				
0 times	64.1%	69.6%	5.45	.066
1 time	3.0%	2.0%		
2+ times	4.8%	2.8%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	57.4%	63.8%	8.00	.018
1 time	14.4%	14.2%		
2+ times	28.2%	22.0%		
<b>Close friends drink regularly</b>				
None drink	48.4%	53.2%	9.13	.010
Some drink	39.6%	39.2%		
All drink	12.0%	7.6%		
<b>Friends have trouble in school</b>				
Never	74.9%	78.6%	8.60	.014
Rarely	18.1%	12.8%		
Regularly	7.0%	8.6%		

(table continues)



	1990 (N = 673)	1993 (N = 802)	Chi-square	<i>P</i>
<b>Attitudes</b>				
Main reason				
Personal	45.0%	44.0%	3.54	.171
Peer pressure	49.2%	52.1%		
Other	5.8%	3.9%		
Responses when friends are drinking				
Avoid them	48.0%	55.4%	14.42	.002
Convince not to drink	24.5%	24.3%		
Drink with but dislike	3.4%	3.8%		
Drink with and like it	24.2%	16.5%		
Thoughts about drinking				
Illegal	61.7%	68.5%	7.50	.024
Natural to experiment	24.4%	20.3%		
Unconcerned	13.9%	11.2%		
Embarrassed by behavior				
0 times	64.1%	69.6%	5.21	.074
1 time	24.2%	21.1%		
2+ times	11.7%	9.3%		

Table 30

Significant Differences in the Behaviors and Attitudes of Junior High Students In  
Relation to Skills for Growing

	1990 (N = 1,537)	1993 (N = 1,585)	Chi-square	P
Behaviors Prevalence				
Smoking				
Nonuser	56.9%	59.6%	2.62	.270
Misuser	35.9%	33.2%		
Abuser	7.2%	7.3%		
Alcohol				
Nonuser	57.5%	60.7%	6.33	.042
Misuser	30.3%	29.8%		
Abuser	12.2%	9.5%		
Marijuana				
Nonuser	95.4%	96.1%	1.13	.562
Misuser	2.7%	2.5%		
Abuser	1.9%	1.5%		
Behaviors Incidence				
Alcohol: Times drunk last 6 months				
0 times	79.5%	80.9%	2.58	.275
1-6 times	17.0%	15.1%		
7+ times	3.4%	4.0%		
Marijuana: Times high last 6 months				
0 times	97.2%	97.0%	.22	.898
1-6 times	2.0%	2.0%		
7+ times	0.9%	1.0%		

(table continues)

	1990 (N = 1,537)	1993 (N = 1,585)	Chi-square	P
<b>Trouble at school</b>				
0 times	94.5%	94.9%	.71	.701
1 time	2.8%	2.9%		
2+ times	2.7%	2.2%		
<b>Difficulty with friends</b>				
0 times	87.6%	91.6%	13.50	.001
1 time	7.0%	4.7%		
2+ times	5.5%	3.7%		
<b>Trouble with the police</b>				
0 times	95.8%	96.8%	1.19	.553
1 time	2.6%	2.0%		
2+ times	1.6%	1.6%		
<b>Drove a car after drinking</b>				
0 times	91.4%	91.3%	.05	.975
1 time	2.9%	2.8%		
2+ times	5.7%	5.9%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	53.7%	55.8%	1.30	.523
1 time	14.8%	14.0%		
2+ times	31.5%	30.3%		
<b>Close friends drink regularly</b>				
None	39.9%	42.4%	5.77	.056
Some	48.8%	48.7%		
All	11.3%	8.8%		
<b>Friends have trouble in school</b>				
Never	66.6%	74.8%	25.52	<.001
Rarely	22.7%	17.3%		
Regularly	10.7%	7.8%		

(table continues)

	1990 (N = 1,537)	1993 (N = 1,585)	Chi-square	P
<b>Attitudes</b>				
<b>Main reason</b>				
Personal	51.2%	48.6%	3.26	.196
Peer pressure	44.1%	45.6%		
Other	4.7%	5.8%		
<b>Responses when friends are drinking</b>				
Avoid them	42.3%	45.7%	11.90	.008
Convince not to drink	25.8%	27.7%		
Drink with but dislike	5.1%	3.5%		
Drink with and like it	11.9%	23.2%		
<b>Thoughts about drinking</b>				
Illegal	57.3%	59.9%	8.08	.018
Natural to experiment	26.0%	27.1%		
Unconcerned	16.7%	13.1%		
<b>Embarrassed by behavior</b>				
0 times	59.1%	64.7%	16.87	<.001
1 time	27.7%	26.3%		
2+ times	13.2%	9.0%		

Table 31

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Health Curriculum

	1990 (N = 2,529)	1993 (N = 2,303)	Chi-square	P
Behaviors Prevalence				
Smoking				
Nonuser	41.3%	39.3%	17.74	<.001
Misuser	41.8%	39.0%		
Abuser	16.9%	21.7%		
Alcohol				
Nonuser	27.9%	28.4%	.41	.816
Misuser	40.5%	39.6%		
Abuser	31.6%	32.0%		
Marijuana				
Nonuser	84.6%	80.9%	14.34	.001
Misuser	10.3%	11.7%		
Abuser	5.1%	7.3%		
Behaviors Incidence				
Alcohol: Times drunk last 6 months				
0 times	50.2%	46.1%	30.77	<.001
1-6 times	34.8%	32.6%		
7+ times	15.0%	21.3%		
Marijuana: Times high last 6 months				
0 times	88.2%	82.1%	79.37	<.001
1-6 times	9.3%	9.8%		
7+ times	2.5%	8.2%		

(table continues)

	1990 (N = 2,529)	1993 (N = 2,303)	Chi-square	P
Trouble at school				
0 times	92.8%	93.1%	.27	.873
1 time	4.7%	4.4%		
2+ times	2.5%	2.5%		
Difficulty with friends			8.38	.015
0 times	75.0%	77.8%		
1 time	12.9%	10.3%		
2+ times	12.1%	11.9%		
Trouble with the police			1.54	.463
0 times	89.7%	89.4%		
1 time	6.4%	7.1%		
2+ times	4.0%	3.5%		
Drove a car after drinking			.51	.774
0 times	61.8%	60.8%		
1 time	9.5%	9.6%		
2+ times	28.7%	29.6%		
Rode in a car after the driver had been drinking			14.76	.001
0 times	31.3%	36.5%		
1 time	16.3%	15.3%		
2+ times	52.4%	48.2%		
Close friends drink regularly			2.48	.289
None	13.9%	12.8%		
Some	56.4%	55.6%		
All	29.8%	31.6%		
Friends have trouble in school			.90	.639
Never	51.4%	52.3%		
Rarely	32.8%	31.5%		
Regularly	15.8%	16.1%		

(table continues)

	1990 (N = 2,529)	1993 (N = 2,303)	Chi-square	<i>P</i>
<b>Attitudes</b>				
<b>Main reason</b>				
Personal	71.0%	69.6%	1.16	.559
Peer pressure	25.5%	26.8%		
Other	3.5%	3.6%		
<b>Responses when friends are drinking</b>				
Avoid them	18.5%	19.6%	2.68	.443
Convince not to drink	23.9%	25.1%		
Drink with but dislike	3.6%	3.2%		
Drink with and like it	54.0%	52.1%		
<b>Thoughts about drinking</b>				
Illegal	27.1%	28.4%	1.13	.569
Natural to experiment	40.0%	39.0%		
Unconcerned	32.9%	32.6%		
<b>Embarrassed by behavior</b>				
0 times	26.8%	28.2%	2.01	.367
1 time	34.8%	35.1%		
2+ times	38.4%	36.6%		

Table 32

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Here's Looking at You 2000

	1990 (N = 787)	1993 (N = 1,267)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking				
Nonuser	41.1%	39.9%	12.76	.002
Misuser	43.8%	38.8%		
Abuser	15.1%	21.2%		
Alcohol				
Nonuser	27.5%	29.3%	6.68	.036
Misuser	38.2%	41.7%		
Abuser	34.4%	28.9%		
Marijuana				
Nonuser	91.7%	90.9%	.43	.805
Misuser	5.8%	6.3%		
Abuser	2.4%	2.8%		
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months				
0 times	48.6%	46.3%	2.77	.251
1-6 times	35.0%	34.3%		
7+ times	16.4%	19.4%		
Marijuana: Times high last 6 months				
0 times	95.2%	91.6%	14.66	.001
1-6 times	4.0%	5.1%		
7+ times	0.8%	3.2%		

(table continues)



	1990 (N = 787)	1993 (N = 1,267)	Chi-square	P
<b>Trouble at school</b>				
0 times	92.0%	94.9%	9.26	.010
1 time	4.8%	3.6%		
2+ times	3.2%	1.4%		
<b>Difficulty with friends</b>				
0 times	72.2%	77.8%	8.35	.015
1 time	13.5%	10.8%		
2+ times	14.3%	11.3%		
<b>Trouble with the police</b>				
0 times	87.8%	89.7%	3.94	.139
1 time	7.6%	7.4%		
2+ times	4.6%	2.9%		
<b>Drove a car after drinking</b>				
0 times	52.2%	59.8%	11.60	.003
1 time	10.9%	9.8%		
2+ times	36.9%	30.4%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	25.8%	34.5%	17.38	<.001
1 time	14.1%	12.9%		
2+ times	60.2%	52.6%		
<b>Close friends drink regularly</b>				
None	9.4%	11.7%	3.03	.220
Some	58.7%	58.6%		
All	31.8%	29.7%		
<b>Friends have trouble in school</b>				
Never	47.4%	57.2%	21.79	<.001
Rarely	36.1%	27.1%		
Regularly	16.5%	15.7%		

(table continues)

	1990 (N = 787)	1993 (N = 1,267)	Chi-square	P
Attitudes				
Main reason				
Personal	66.1%	62.1%	2.80	.246
Peer pressure	29.6%	32.3%		
Other	4.3%	5.1%		
Response when friends are drinking				
Avoid them	19.8%	22.4%	2.79	.425
Convince not to drink	21.9%	22.6%		
Drink with but dislike	3.6%	2.9%		
Drink with and like it	54.7%	52.1%		
Thoughts about drinking				
Illegal	28.2%	28.8%	2.30	.317
Natural to experiment	34.5%	37.4%		
Unconcerned	36.7%	33.8%		
Embarrassed by behavior				
0 times	25.4%	28.9%	3.01	.222
1 time	34.4%	33.5%		
2+ times	40.2%	37.6%		

Table 33

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Learning to Live Drug Free

	1990 (N = 614)	1993 (N = 554)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking				
Nonuser	40.6%	46.0%	11.53	.003
Misuser	47.2%	37.7%		
Abuser	12.2%	16.2%		
Alcohol				
Nonuser	24.3%	28.7%	12.79	.002
Misuser	36.2%	41.7%		
Abuser	39.6%	29.6%		
Marijuana				
Nonuser	90.5%	94.2%	6.26	.043
Misuser	7.0%	3.8%		
Abuser	2.5%	2.0%		
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months				
0 times	45.0%	47.8%	3.62	.164
1-6 times	38.2%	32.9%		
7+ times	16.8%	19.3%		
Marijuana: Times high last 6 months				
0 times	93.5%	95.1%	9.49	.009
1-6 times	5.8%	2.9%		
7+ times	0.7%	2.0%		

(table continues)

	1990 (N = 614)	1993 (N = 554)	Chi-square	P
<b>Trouble at school</b>				
0 times	93.5%	92.9%	.45	.800
1 time	4.6%	4.5%		
2+ times	2.0%	2.5%		
<b>Difficulty with friends</b>				
0 times	72.3%	79.3%	7.89	.019
1 time	13.7%	10.9%		
2+ times	14.0%	9.8%		
<b>Trouble with the police</b>				
0 times	89.4%	89.3%	.11	.945
1 time	7.8%	7.6%		
2+ times	2.8%	3.1%		
<b>Drove a car after drinking</b>				
0 times	50.3%	56.8%	4.81	.090
1 time	11.4%	10.0%		
2+ times	38.3%	33.2%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	24.1%	28.7%	4.56	.102
1 time	13.6%	15.0%		
2+ times	62.4%	56.3%		
<b>Close friends drink regularly</b>				
None	12.1%	11.0%	11.42	.003
Some	50.7%	60.3%		
All	37.2%	28.7%		
<b>Friends have trouble in school</b>				
Never	54.2%	55.1%	1.60	.448
Rarely	34.5%	31.8%		
Regularly	11.2%	13.2%		

(table continues)

	1990 (N = 614)	1993 (N = 554)	Chi-square	<i>P</i>
<b>Attitudes</b>				
Main reason				
Personal	65.8%	64.3%	.64	.736
Peer pressure	30.1%	32.1%		
Other	4.1%	3.6%		
Responses when friends are drinking				
Avoid them	17.7%	22.7%	12.72	.005
Convince not to drink	18.9%	22.3%		
Drink with but dislike	6.2%	3.1%		
Drink with and like it	12.7%	51.9%		
Thoughts about drinking				
Illegal	26.4%	31.8%	9.77	.008
Natural to experiment	34.9%	38.1%		
Unconcerned	38.7%	30.1%		
Embarrassed by behavior				
0 times	24.6%	29.4%	7.41	.025
1 time	33.2%	35.9%		
2+ times	42.2%	34.7%		

Table 34

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Local Curriculum

	1990 (N = 2,865)	1993 (N = 2,870)	Chi-square	P
Behaviors Prevalence				
Smoking				
Nonuser	41.6%	42.1%	28.26	<.001
Misuser	43.4%	38.1%		
Abuser	15.1%	19.8%		
Alcohol				
Nonuser	25.6%	30.7%	22.14	<.001
Misuser	38.2%	37.7%		
Abuser	36.2%	31.6%		
Marijuana				
Nonuser	91.3%	88.8%	12.45	.002
Misuser	6.0%	7.0%		
Abuser	2.7%	4.2%		
Behaviors Incidence				
Alcohol: Times drunk last 6 months				
0 times	48.8%	48.5%	12.10	.002
1-6 times	36.0%	33.0%		
7+ times	15.2%	18.5%		
Marijuana: Times high last 6 months				
0 times	93.8%	89.5%	59.99	<.001
1-6 times	5.0%	6.0%		
7+ times	1.2%	4.5%		

(table continues)

	1990 (N = 2,865)	1993 (N = 2,870)	Chi-square	P
<b>Trouble at school</b>				
0 times	90.5%	92.2%	5.43	.066
1 time	6.3%	5.1%		
2+ times	3.2%	2.7%		
<b>Difficulty with friends</b>				
0 times	72.9%	79.1%	30.87	<.001
1 time	13.2%	10.2%		
2+ times	14.0%	10.7%		
<b>Trouble with the police</b>				
0 times	86.5%	88.2%	4.37	.113
1 time	9.3%	7.8%		
2+ times	4.2%	4.0%		
<b>Drove a car after drinking</b>				
0 times	51.9%	58.1%	23.58	<.001
1 time	11.6%	9.2%		
2+ times	36.5%	32.7%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	26.4%	33.3%	36.65	<.001
1 time	13.5%	13.7%		
2+ times	60.2%	53.0%		
<b>Close friends drink regularly</b>				
None	10.3%	11.5%	4.83	.089
Some	56.3%	57.5%		
All	33.4%	31.0%		
<b>Friends have trouble in school</b>				
Never	48.7%	51.9%	5.94	.051
Rarely	34.5%	32.6%		
Regularly	16.7%	15.4%		

(table continues)

	1990 (N = 2,865)	1993 (N = 2,870)	Chi-square	P
<b>Attitudes</b>				
<b>Main reason</b>				
Personal	67.7%	64.6%	7.54	.023
Peer pressure	28.1%	30.2%		
Other	4.2%	5.3%		
<b>Responses when friends are drinking</b>				
Avoid them	19.3%	22.7%	11.84	.008
Convince not to drink	21.8%	22.2%		
Drink with but dislike	4.6%	4.5%		
Drink with and like it	54.2%	50.6%		
<b>Thoughts about drinking</b>				
Illegal	27.5%	31.0%	15.37	<.001
Natural to experiment	37.0%	38.0%		
Unconcerned	35.6%	31.0%		
<b>Embarrassed by behavior</b>				
0 times	24.1%	30.1%	33.57	<.001
1 time	34.6%	34.9%		
2+ times	41.3%	35.0%		



Table 35

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Skills for Adolescence

	1990 (N = 1,740)	1993 (N = 1,628)	Chi-square	P
<b>Behaviors Prevalence</b>				
Smoking				
Nonuser	39.4%	39.6%	2.94	.230
Misuser	43.9%	41.7%		
Abuser	16.7%	18.7%		
Alcohol				
Nonuser	26.9%	27.3%	2.15	.341
Misuser	38.0%	39.9%		
Abuser	35.1%	32.7%		
Marijuana				
Nonuser	90.9%	89.9%	3.90	.142
Misuser	6.3%	6.1%		
Abuser	2.8%	4.1%		
<b>Behaviors Incidence</b>				
Alcohol: Times drunk last 6 months				
0 times	48.6%	45.1%	10.67	.005
1-6 times	35.8%	34.9%		
7+ times	15.6%	20.0%		
Marijuana: Times high last 6 months				
0 times	93.1%	91.2%	25.21	<.001
1-6 times	5.6%	4.7%		
7+ times	1.3%	4.1%		

(table continues)

	1990 (N = 1,740)	1993 (N = 1,628)	Chi-square	P
<b>Trouble at school</b>				
0 times	89.2%	90.7%	2.07	.355
1 time	7.5%	6.3%		
2+ times	3.3%	3.0%		
<b>Difficulty with friends</b>				
0 times	70.8%	77.3%	18.90	<.001
1 time	14.0%	11.0%		
2+ times	15.2%	11.7%		
<b>Trouble with the police</b>				
0 times	87.0%	87.3%	.43	.808
1 time	8.7%	8.8%		
2+ times	4.3%	3.9%		
<b>Drove a car after drinking</b>				
0 times	52.4%	56.3%	5.48	.064
1 time	11.0%	9.5%		
2+ times	36.6%	34.2%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	27.2%	32.8%	13.49	<.001
1 time	13.9%	14.1%		
2+ times	58.8%	53.2%		
<b>Close friends drink regularly</b>				
None	9.8%	10.2%	.30	.861
Some	59.0%	59.3%		
All	31.2%	30.5%		
<b>Friends have trouble in school</b>				
Never	44.8%	49.8%	8.40	.015
Rarely	36.9%	33.5%		
Regularly	18.4%	16.7%		

(table continues)

	1990 (N = 1,740)	1993 (N = 1,628)	Chi-square	P
Attitudes				
<b>Main reason</b>				
Personal	68.8%	67.1%	2.16	.340
Peer pressure	27.1%	27.8%		
Other	4.1%	5.0%		
<b>Responses when friends are drinking</b>				
Avoid them	19.2%	21.2%	2.49	.477
Convince not to drink	22.2%	21.6%		
Drink with but dislike	4.0%	3.5%		
Drink with and like it	54.6%	53.7%		
<b>Thoughts about drinking</b>				
Illegal	27.9%	28.7%	2.49	.288
Natural to experiment	36.5%	38.2%		
Unconcerned	35.7%	33.1%		
<b>Embarrassed by behavior</b>				
0 times	24.9%	27.7%	4.95	.084
1 time	34.7%	35.2%		
2+ times	40.3%	37.0%		

Table 36

Significant Differences in the Behaviors and Attitudes of Senior High Students In  
Relation to Skills for Living

	1990 (N = 1,222)	1993 (N = 1,628)	Chi-square	P
<b>Behaviors Prevalence</b>				
<b>Smoking</b>				
Nonuser	42.1%	40.8%	7.49	.024
Misuser	41.7%	38.7%		
Abuser	16.2%	20.5%		
<b>Alcohol</b>				
Nonuser	25.9%	29.1%	3.34	.188
Misuser	39.2%	38.0%		
Abuser	34.9%	32.8%		
<b>Marijuana</b>				
Nonuser	90.4%	91.4%	6.37	.041
Misuser	7.4%	5.4%		
Abuser	2.1%	3.2%		
<b>Behaviors Incidence</b>				
<b>Alcohol: Times drunk last 6 months</b>				
0 times	46.4%	47.5%	11.50	.003
1-6 times	39.5%	34.0%		
7+ times	14.1%	18.5%		
<b>Marijuana: Times high last 6 months</b>				
0 times	92.5%	92.4%	14.19	.001
1-6 times	6.3%	4.4%		
7+ times	1.2%	3.2%		

(table continues)

	1990 (N = 1,222)	1993 (N = 1,628)	Chi-square	P
<b>Trouble at school</b>				
0 times	90.3%	92.3%	3.50	.174
1 time	6.6%	5.4%		
2+ times	3.2%	2.2%		
<b>Difficulty with friends</b>				
0 times	72.2%	78.9%	16.65	<.001
1 time	12.5%	10.8%		
2+ times	15.2%	10.2%		
<b>Trouble with the police</b>				
0 times	87.1%	88.0%	1.34	.511
1 time	9.8%	8.5%		
2+ times	3.1%	3.5%		
<b>Drove a car after drinking</b>				
0 times	54.7%	59.0%	4.54	.103
1 time	10.5%	9.6%		
2+ times	34.8%	31.4%		
<b>Rode in a car after the driver had been drinking</b>				
0 times	28.7%	34.2%	8.63	.013
1 time	13.7%	13.0%		
2+ times	57.7%	52.8%		
<b>Close friends drink regularly</b>				
None	9.9%	10.7%	1.24	.538
Some	57.0%	58.3%		
All	33.1%	31.0%		
<b>Friends have trouble in school</b>				
Never	47.5%	48.9%	.459	.795
Rarely	35.6%	34.6%		
Regularly	16.9%	16.5%		

(table continues)

	1990 (N = 1,222)	1993 (N = 1,628)	Chi-square	<i>P</i>
Attitudes				
Main reason				
Personal	70.0%	65.0%	7.92	.019
Peer pressure	25.3%	30.5%		
Other	4.7%	4.5%		
Responses when friends are drinking				
Avoid them	18.4%	21.7%	4.62	.202
Convince not to drink	23.2%	21.9%		
Drink with but dislike	3.8%	4.2%		
Drink with and like it	54.7%	52.2%		
Thoughts about drinking				
Illegal	27.4%	29.7%	4.17	.125
Natural to experiment	37.4%	39.2%		
Unconcerned	34.9%	31.0%		
Embarrassed by behavior				
0 times	23.8%	29.8%	14.11	.001
1 time	36.0%	36.1%		
2+ times	40.2%	34.0%		

Table 37

Comparison of Elementary Curricula Relating to Behaviors and Attitudes of Junior High Students

Number	Dis 4,185	DUSO 1,585	Me-Me 418	OA 414	PA 841	SKG 803	Total
<b>Behaviors Prevalence</b>							
Smoking Nonuser	57.4%- <.001	63.9% .034	63.3% .414	65.0% .013	69.2%+ <.001	59.6% .007	60.3
Alcohol Nonuser	59.8%- .001	59.1% .575	58.6% .474	60.5% .082	70.1%+ <.001	60.7% .353	61.2%
Marijuana Nonuser	92.5%- <.001	96.6% .076	96.1% .125	96.7% .003	96.9% .002	96.1% .002	94.1%
<b>Behaviors Incidence</b>							
Alcohol: Times drunk last 6 months 0 times	78.8%- .001.	81.1% .762	70.5% .882	80.4% .841	85.6%+ <.001	80.9% .020	79.1%
Marijuana: Times high last 6 months 0 times	93.2%- <.001	96.4% .318	98.6% .004	97.9%+ .001	97.8%+ .001	97.0%+ <.001	95.1%
Trouble at school 0 times	94.8%- <.001	96.4% .769	95.2% .029	96.8% .268	97.3% .076	94.9% .036	95.8%
Difficulty with friends 0 times	89.9% .381	88.2% .289	89.6% .563	90.1% .160	92.9% .014	91.6% .113	90.5%
Trouble with the police 0 times	95.5% .006	96.7% .761	95.9% .178	96.9% .404	98.0% .014	96.3% .542	96.1%

(table continues)

Number	Dis 4,185	DUSO 1,585	Me-Me 418	OA 414	PA 841	SKG 803	Total
Drove a car after drinking 0 times	91.3% .741	90.5% .085	89.4% .055	91.0% .832	95.2%+ <.001	91.3% .019	91.4%
Rode in a car after the driver had been drinking 0 times	58.9% .985	53.8% .085	58.2% .382	58.3% .845	63.8% <.001	55.8% .019	59.0%
Close friends drink regularly None	45.1% .091	44.6% .341	38.3%- .001	44.3% .263	53.2%+ <.001	42.4%- <.001	45.0%
Friends have trouble in school Never	72.0% 0.78	75.5% .100	70.9% .177	74.1% .554	78.6%+ .001	74.8% .056	73.3%
Attitudes							
Main reason Personal	48.7% .008	45.9% .822	46.5% .985	46.0% .850	44.0% .012	48.6% .198	46.9%
Responses when friends are drinking Avoid them	44.2% .630	43.1% .599	45.3% .122	51.5% <.001	55.4%+ <.001	45.7% .924	45.0%
Thoughts about drinking Illegal	58.4% .152	56.6% .287	60.0% .224	63.5% .052	68.5%+ <.001	59.9% .085	59.6%
Embarrassed by behavior Never	62.8% .743	60.8% .501	60.8% .501	62.1% .790	69.6%+ <.001	64.7% .043	63.0%

Note. Dis = Discover; OA = Operation Aware; PA = Positive Action;

SKG = Skills for Growing



Table 38

Comparison of Junior High Curricula Relating to Behaviors and Attitudes of Senior High Students

Number	HC 4,829	HLY 1,267	LC 2,867	LLDF 554	SKA 1,628	SKL 2,378	Total
<b>Behaviors Prevalence</b>							
Smoking Nonuser	39.3% .008	39.9% .248	42.1% .961	46.0% .047	39.6% .010	40.8% .700	41.9%
Alcohol Nonuser	28.4% .016	29.3% .095	30.7% .200	28.7% .350	27.3% .003	29.1% .125	28.3%
Marijuana Nonuser	80.9%- <.001	90.0%+ <.001	88.8% .008	94.2%+ <.001	89.9%+ .001	91.4%+ <.001	87.1%
<b>Behaviors Incidence</b>							
Alcohol: Times drunk last 6 months 0 times	46.1% .004	46.3% .142	48.5% .435	47.8% .906	45.1% .006	47.5% .342	48.7%
Marijuana: Times high last 6 months 0 times	82.1%- <.001	91.6%+ .001	89.5% .092	95.1%+ <.001	91.2%+ .001	92.4%+ <.001	88.4%
Trouble at school 0 times	93.1% .711	94.9% .005	92.2% .030	92.9% .894	90.7% <.001	92.5% .057	93.1%
Difficulty with friends 0 times	77.8% .383	77.8% .856	79.1% .583	79.3% .597	77.3% .530	78.9% .580	78.4%
Trouble with the police 0 times	89.4% .691	89.7% .199	88.2% .230	89.3% .600	87.3% .023	88.0% .149	89.0%

(table continues)

Number	HC 4,829	HLY 1,267	LC 2,867	LLDF 554	SKA 1,628	SKL 2,378	Total
Drove a car after drinking 0 times	60.8% .621	59.8% .919	58.1% .015	56.8% .264	56.3% .002	59.0% .742	60.1%
Rode in a car after the driver had been drinking 0 times	36.5% .042	34.5% .162	33.3% <.001	28.7% .001	32.8% .009	34.2% .149	36.1%
Close friends drink regularly None	12.8% .078	11.7% .486	11.5% .043	11.0% .314	10.2% .005	10.7% .075	12.7%
Friends have trouble in school Never	52.3% .238	57.2% .023	51.9% .010	55.1% .238	49.8% .001	48.9% .001	54.0%
Attitudes							
Main reason Personal	69.6% + <.001	62.6% .068	64.6% .335	64.3% .208	67.1% .228	65.0% .702	65.5%
Response when friends are drinking Avoid them	19.6% .008	22.4% .279	22.7% .006	22.7% .685	21.2% .033	21.7% .263	22.0%
Thoughts about drinking Illegal	28.4% .022	28.8% .059	31.0% .849	31.8% .851	28.7% .070	29.7% .734	30.7%
Embarrassed by behavior Never	28.2% .042	28.9% .181	30.1% .717	29.4% .696	27.7% .042	29.8% .368	30.4%

Note. Dis = Discover; OA = Operation Aware; PA = Positive Action;

SKG = Skills for Growing

**APPENDIX C**  
**PERMISSION LETTER**

UNIVERSITY OF  NORTH DAKOTA

February 6, 1995  
7511 South University Drive  
Fargo, North Dakota 58104

BUREAU OF EDUCATIONAL SERVICES  
AND APPLIED RESEARCH  
P O BOX 7189  
GRAND FORKS, NORTH DAKOTA 58202-7189  
(701) 777-4421

Dr. David L. Lee  
Director of Guidance, Counseling,  
& Testing  
600 East Boulevard Avenue  
Bismark, North Dakota 58505-0440

Dear Dr. Lee:

I am a doctoral student in the Center for Teaching and Learning at the University of North Dakota with Dr. Landry as my committee chairperson. For my dissertation, I am studying if there has been a change in the behaviors, knowledge levels, and attitudes from 1990 to 1993 in seventh through twelfth grade high school students in North Dakota. Also, I will investigate whether there is a relationship between school-based prevention programs and self-reported behaviors, knowledge, and attitudes related to the use of chemical substances in seventh through twelfth grade high school students.

I am requesting permission to use the North Dakota High School Drug and Alcohol data for the years 1990 and 1993. If permission is granted, please sign the space provided at the bottom of the letter and return a copy to me.

Also, I am requesting information regarding the drug and alcohol preventive curricula taught in North Dakota high schools. First, is there a breakdown of which curriculum is taught in each high school. Second, do you have any information on the development of each curriculum used in the high schools. Any information you could provide would be greatly appreciated.

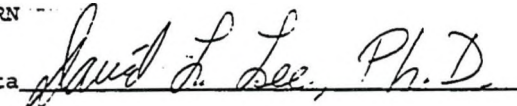
Upon completion of my dissertation in the summer of 1995, I will send you a copy of the final report. If you have any questions please contact me at my home, 701-237-3843 or per cellular phone, 701-238-8484. Thank you in advance for your prompt consideration to my request.

Sincerely,



Loretta Jean Heuer, MS, RN

Permission for use of data





BUREAU OF EDUCATIONAL SERVICES AND APPLIED RESEARCH

FEB - 9 1995

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