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**Undergraduate independent college students' use of and opinions
about tobacco, alcohol, and other drugs**

Wagner, Miriam Ledbetter, Ed.D.

The University of North Carolina at Greensboro, 1989

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UNDERGRADUATE INDEPENDENT COLLEGE STUDENTS' USE OF
AND OPINIONS ABOUT TOBACCO, ALCOHOL,
AND OTHER DRUGS

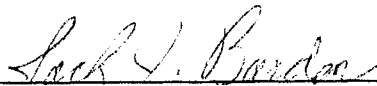
by

Miriam Ledbetter Wagner

A Dissertation Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Greensboro
1989

Approved by



Dissertation Advisor

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

Dissertation Adviser

Jack L. Bardon

Committee Members

W. L. ...

Robert ...

Richard M. Jeger

October 5, 1959
Date of Acceptance by Committee

October 5, 1959
Date of Final Oral Examination

WAGNER, MIRIAM LEDBETTER, Ed.D. Undergraduate Independent College Students' Use of and Opinions About Tobacco, Alcohol, and Other Drugs. (1989)
Directed by Dr. Jack I. Bardon. 303 pp.

The purpose of this research was to assess students' use of and opinions about alcohol, nonsmoking tobacco, smoking tobacco, crack, other forms of cocaine, over-the-counter drugs with high alcohol content, prescription drugs used for nonmedical purposes, stimulants, sedatives, marijuana, hallucinogens, uppers, downers, opiates, and designer drugs in an effort to determine the extent of use of these substances in seven independent institutions of postsecondary education. The study also evaluated students' opinions about their campus substance abuse policies.

One thousand six hundred eighty-eight independent college students from every state who attended seven institutions in one southeastern state, 1088 females and 600 males comprised the survey sample. Results from the survey indicated that a significantly higher percentage of males, students who did not regularly meet with a religious group, freshman students, and students with low grade point averages used drugs (except for smoking tobacco and wine products) during the 30 days prior to the administration of the survey ($p < .05$). A significantly higher percentage of females consumed wine products ($p < .05$). Recent use of marijuana was 13% higher than the national prevalence rate reported for college students by Johnston, O'Malley, & Bachman (1988).

Half the drug-experienced respondents reported a desire to stop using drugs, and 34% reported a desire to reduce their drug use. Nearly a third (31.7%) of all participating respondents reported that drug use is accepted on their campus. Two-thirds of the subjects endorsed making drug education available on their campus, 41.8% would attend a college-sponsored drug program, and 41.4% would attend a student-sponsored drug program.

Implications of these findings and suggestions for future research are presented.

ACKNOWLEDGEMENTS

The researcher would like to express her heart-felt appreciation to Dr. Jack I. Bardon for his guidance, dedication, and encouragement during the course of completing this dissertation. Special recognition is extended to Dr. Richard M. Jaeger for his assistance in acquiring a grant to complete the present study, as well as for the ardor for research he inspired in the author. A special thank you is extended to Dr. P. Scott Lawrence and Dr. Nicholas M. Vacc for their many suggestions and assistance as members of the author's dissertation committee.

It is with pleasure and appreciation that the author acknowledges the contributions of the drug task force coordinators from each of the seven participating institutions, as well as the contributions of the drug prevention coordinator for the MIRM consortium.

Most importantly, the author wishes to express her sincere love and appreciation to her husband, David and her sons David, IV and Craig. Their support and patience helped culminate this study.

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CHAPTER I
- INTRODUCTION

Since the 1960s, drug use in America has reached epidemic proportions. Recent data suggest an alarming trend toward increasing drug use in college-age young adults. According to the 1988 Statistical Abstract of the United States (1987), 12,247,000 students were enrolled in 2-year and 4-year colleges and universities in 1985, the latest year for which statistics are available. A national survey by Johnston, O'Malley, and Buchman (1986) indicated that approximately 45% of this population had used some illicit drug within twelve months prior to the survey. Twenty-six percent of those surveyed admitted to illicit drug use within a month of the study.

Many school systems are introducing drug prevention programs into the curriculum of elementary and middle schools in an effort to more rapidly curtail drug problems. However, because the popularity of various drugs change and because new variations of old drugs are constantly being introduced, students may be enrolled in college at the time some drugs achieve popularity. Consequently, prevention and intervention programs are needed for older students, such as college students (Johnston et al. 1987).

The college years, those constituting young adulthood (late teens to mid twenties), tend to be the period of greatest use of abusive substances (Johnston et al. 1987). The drug use trends set by college students may have severe ramifications for the students' future as well as their childrens' future. The latter point is well supported in the literature. Parental use of drugs and parental attitudes about drugs are directly associated with drug use among their adolescent children (Kandel, 1982).

In the past, colleges and universities have not adequately addressed the needs of substance abusers. Disciplinary actions and dismissals have most frequently been the "solutions" to drug problems. However, increased awareness of the severity of drug problems and their implications for college enrollment, coupled with governmental pressure, has resulted in an increase in more effective support programs.

Over the past decade there has been renewed interest in substance abuse among American youth and young adults. Earlier etiological and intervention research studies have focused on broad populations in an effort to find some universal generalizations that would be applicable for all substance abusers. Recently, however, research is concentrating more on assessing specific subpopulations and developing interventions appropriate for each. Battjes

and Jones (1985) noted that

since drug abuse is a diverse phenomenon, with individuals using drugs in different ways for a variety of reasons, no single prevention approach will be effective with all groups. To achieve appropriate programming, prevention programs will need to target specific populations and gain an understanding of the meaning of drug use and the dynamics involved in changing drug use behaviors in each target population (p. 273).

These same sentiments have been expressed by Cavendish, (1987) and Toohey, Dezelsky, & Baffi (1982) in their advocacy of individual policies that are appropriate for the societies and institutions they are meant to serve.

Given that the late teens to mid twenties (the prime age of college students) is the period of greatest use of abusive substances (Johnston et al. 1986) and given that college students tend to use certain substances in greater quantities than their noncollege peers (Johnston et al. 1987), perhaps colleges and universities have a social obligation to curb certain heretofore fostered traditions, such as the "beer blast". Johnston and O'Malley (1985) suggest that colleges and universities are in the unique position of already having their students institutionalized, thereby making them very accessible to planned intervention.

Generally, college students have not been included in national household surveys of drug use because of their campus living environment (Johnston, O'Malley, Bachman,

1986). Since 1980, however, over 100 independent studies on substance use and abuse among college students have been published. The majority of these studies combined surveys of both public and independent colleges and universities, with small representations from each institution. Most of these studies did not separate the data compiled on students who attended independent colleges from data compiled on students who attended public colleges. Social environmental differences between students who attend independent colleges and those who attend public colleges may suggest different substance use and abuse problems. Data from these mixed studies may have general global implications but may be of little use in addressing the needs of individual college campuses, both independent and public.

Background and Purpose of the Study

A consortium of six colleges and one university in the southeastern region of the United States received a federal grant to establish a comprehensive drug program on each of their campuses. At the request of the seven institutions, they will not be identified. Therefore, the fictitious acronym of "MIRM" will be used to signify the consortium composed of six colleges and one university.

The MIRM colleges recognized the need for drug prevention programs on their campuses, and they have

worked together with limited resources and with varying degrees of success. Although each of the institutions has some facsimile of a drug program on campus, most are not adequately staffed, and in most situations the staff is not adequately trained to work with substance abuse problems. More important, these schools developed programs based on assumptive rather than empirical data. (D. S. Anderson, personal communication, November 17, 1988). This study provides data which can be used to evaluate and implement substance abuse programs on the MIRM campuses.

The purpose of this study is to assess students' use of and opinions about alcohol, nonsmoking tobacco, smoking tobacco, cocaine, crack, over-the-counter drugs, prescription drugs used for nonmedical purposes, stimulants, sedatives, marijuana, hallucinogens, uppers, downers, opiates, and designer drugs, in an effort to determine the extent of use of these substances in independent institutions of postsecondary education. This study also provides a profile of students who are likely to use campus substance abuse programs, based on survey responses. Lastly, the study provides an evaluation of students' opinions about substance use policies, using students from seven independent institutions of higher education.

Need for the Study

As indicated earlier, in a recent study of substance abuse among college students Johnston et al. (1987) reported that 45% of students attending 2-year or 4-year institutions had used some illicit substance during the twelve months preceeding the survey. Drug usage in institutions of higher education increases the costs of health insurance, increases attrition, results in academic failure and vandalism on campus and is a source of liability for the schools (Tractenburg, 1988; Wurtzel, 1988; Burse, 1988).

Descriptive data on drug-related problems were compiled for each of the MIRM institutions by using administrative records of reported cases of drug use. According to these reports, a change in the state legal drinking age has resulted in "underground" drinking, but has not significantly decreased the number of students who drink nor the quantity consumed. One campus estimated that 80% of students seeking counseling on campus had drug-related problems. Still another campus has data which revealed that 100% of the vandalism problems were committed by individuals under the influence of alcohol and/or some other substance. Stephen Tractenberg (1988), president of George Washington University, suggested that most vandalism on college and university campuses is committed while students are under the influence of some

substance. These same sentiments have been expressed by other college and university presidents participating in the National Forum on Substance Abuse Issues in Higher Education. Therefore, in addition to the drug-related personal problems students may experience, college campuses are permeated with fiscal and scholarly concerns related to students' use of abusive substances.

Significance of Study

The significance of this study is three-fold. First is an accurate assessment of drug use among independent college students is needed. Independent institutions of higher education need to know whether their policies should or should not be based on the assumption that independent college students and independent college students possess the same drug problems. At present, most information combines public and independent schools. Should a distinctive pattern of drug problems and reactions occur at independent colleges and universities different intervention strategies might be appropriate.

Second, this study involves the use of a drug survey instrument developed for use with college students and pilot tested on independent-campus students. Therefore, if the instrument proves to be valid, independent postsecondary institutions will have a readily available instrument with which to assess their campus drug

problems. In addition, the methodology used in collecting and analyzing the data could be replicated by other postsecondary institutions.

Finally, the results of this study might be useful in helping evaluators develop more proficient assessment measures as well as providing some background information that might be useful in measuring progress in the drug programs on the campuses included in the study and others like them.

Research Questions

In order to ascertain the extent of substance abuse among students attending institutions in the MIRM consortium, as well as to evaluate the attitudes and opinions of these students about the use of drugs, the following research questions were formulated:

1. What drugs are currently being used by MIRM students?
2. Where do MIRM students use drugs?
3. With whom do MIRM students use drugs?
4. What rationale do MIRM students give for using drugs?
5. What are common characteristics shared by MIRM students who use drugs on MIRM campuses?
6. At what times do MIRM students use drugs?
7. What quantity of drugs do MIRM students consume?
8. What consequences have MIRM students experienced as a result of their drug use?

9. What is the history of drug use among MIRM students?
10. What attitudes and beliefs do MIRM students hold regarding drug use?
11. How do MIRM students feel about the accuracy of the answers they provided on the survey questionnaire?
12. Is there a difference, by institution, in illicit drug use among students?

Definition of Terms

The following terms have been operationally defined in an effort to provide consistency in the interpretation of results.

Substance Abuse

Substance abuse is defined according to diagnostic criteria from the DSM-III-R: "Continued use of substance despite knowledge of having persistent or recurrent social, occupational, psychological, or physical problems that is caused or exacerbated by use of the psychoactive substance'" and/or "recurrent use in situations in which use is physically hazardous....(p. 109)

Designer Drugs

Designer drugs are defined according to Smith and Seymour (1985) as synthetic drugs that are manufactured to provide the effects of natural drugs.

Organization of the Study

The next three chapters will describe the details of the study. Chapter 2 will discuss relevant literature as it relates to the study of college students' use of abusive substances, including social, psychological, environmental, and developmental variables. Chapter 2 also will review the literature confirming the validity of self-report methods similar to the instrument used in this survey.

Chapter 3 will include the research questions developed to guide the completion of this study, discussion of the methodology used in the collection of the data, a description of the procedures, and a description of the survey population. A copy of the questionnaire will be included in the Appendices. Finally, a description of the statistical analyses used in interpreting the data and procedures for editing the answer sheets will conclude the chapter.

Chapter 4 will consist solely of the results of the survey. Chapter 5 will summarize the research findings, discuss the conclusions derived from the results, and will present recommendations for future studies.

CHAPTER II
LITERATURE REVIEW

This chapter will include a review of the relevant literature pertaining to the use of tobacco, alcohol, and other drugs among students enrolled in postsecondary institutions of education.

Many of the drug problems among college students are simply reflections of the drug problems of society. Generally, college students' prevalence of illegal drug use closely approximates that of their peers of the same age who do not attend college (Johnston et al., 1987). Results from this Michigan study on college students' use of illicit drugs suggest that there is no significant difference in annual use of any illicit drug, in use of unlawful drugs other than marijuana or stimulants between college students and their same age noncollege peers (Johnston et al., 1987).

From 1980 to 1984, college students' use of illegal drugs decreased on a continuous basis, dropping from 56% to 45%. Since 1984, there has been no significant change in college students' use of illicit drugs (Johnston, et al., 1987). Little change has occurred in the use of marijuana on a monthly basis, although there was a significant change in collegiates' daily use of marijuana,

decreasing from 7.2% in 1980 to 2.1% in 1986. Again these changes seem to parallel changes in use by high school graduates of the same age. College students have only slightly lower annual prevalence rates for stimulants, 10.3% compared to 13% for their noncollege peers; LSD, 3.9% compared to 4.9% for their noncollege peers; barbiturates, 2.1% compared to 2.9% for their noncollege peers; tranquilizers, 4.4% compared to 5.1% for their noncollege peers; and heroin, 0.1% compared to 0.2% among their noncollege peers.

These similarities are not true for comparisons in cigarette smoking and alcohol consumption. College students prevalence of daily smoking is 13% compared to 30% for noncollege students of the same age. Smoking half-a-pack of cigarettes a day is reported to be at a rate of 8.3% for college students verses 24.2% for their noncollege peers (Johnston, et al., 1987).

The next section of chapter 2 will focus on correlates of substance use. The following section of the chapter will focus on drugs commonly used by collegiates, followed by a review of the literature on the social and psychological milieu of college life. The final section will review research findings on the appropriateness of using self-reporting when assessing use of abusive substances.

Correlates of Substance Use

Several variables have been associated with initial use of abusive substances during adolescence. These include permissive parents, poor family relations, parents who use and abuse substances, and feelings of alienation from other adolescents (Baumrind & Moselle, 1985). Other variables such as age of initial drug use also have been positively correlated with drug abuse. The younger the age of initial use, the more likely the individual is to abuse substances later in life. While antisocial behavior at an early age has been associated with drug use (Robins, 1978; Johnston, O'Malley & Evelard 1978) more older adolescents use abusive substances than engage in antisocial behavior (Weschler & Thum, 1973). Therefore, antisocial behavior will not be measured in depth in this study.

Socioeconomic status, race, and family structure are variables frequently correlated with substance abuse by the lay population. Gersick, Grady, Sexton and Lyons (1981) and Kandel (1982) suggest that these conclusions are not justified by data. To the contrary, these authors suggest that socioeconomic status, race, and family structure are generally inconclusive and sometimes even contradictory. More supportive data have been found for the effects of school, peers (Cafferata, Lach, & Reifer, 1980; Esmay Wertheimer & Wertheimer, 1979;

McDermott & Marty, 1986), gender (Nicoli, 1985; Barnes & Welte, 1983; Engs & Hanson, 1983; Johnston et al., 1987; Wright, 1983), age (Johnston, et al., 1987; Newcomb & Bentler, 1986) and parental influence (Nicoli, 1985; Forslund & Gustafson, 1970).

Spivack (1983) reported that poor performance in the latter grades of grammar school is indicative of use of abusive substances. In addition, as students progressed through high school, an even clearer positive correlation was reported between students' use of abusive substances and poor attitudes about school.

Perhaps the single variable most highly correlated with use of abusive substances stems from adolescents' relationships with their peers (Kaplan, Martin, & Robbins 1982; Kandel, 1982; Winfree, Theis & Griffiths, 1981; and Elliott, Huizinger, & Ageton 1982). Students who associate with drug users are more likely to use drugs than their counterparts who do not associate with drug users. The same is true for adolescents whose parents use abusive substances. They too are more likely to engage in the use of abusive substances than their peers. Along with peer and parental influence, religiosity and acceptance of social norms are predictive of substance use. Adolescents who reject social norms and adolescents who have low religious beliefs are more likely to become substance abusers (Hawkins, Lisner, & Catalano, 1985).

Use of abusive substances among young adults (ranging in age from 19-24 years and generally characterized as post-high school) differs from substance abuse among early adolescents. O'Malley, Bachman, and Johnston (1984), in their analysis of marijuana use from 1976 to 1982 found that marijuana use increased after high school but then later decreased due to historic changes in the use of the drug use (period trends). They also found no effects due to age or group. Cocaine usage, however, showed a period effect and an age effect up to age 21, suggesting that more individuals use cocaine after completion of high-school, during the period described as the college years.

Alcohol

The single most abused substance among college students is alcohol (Johnston, O'Malley, & Bachman, 1986; Johnston et al., 1987; Engs & Hanson, 1985; Fillmore, 1975; Hamilton, 1985). For many students use of alcohol is a statement of independence, and many have little concern for the prolonged effects of alcohol (Lavin, 1980). Johnston et al. (1987), in a national study of drug use among high school students and young adults, reported that the annual prevalence of alcohol use among college students in 1986 was 91.5%. This figure represents a 5% increase in use of alcohol by collegiates over their noncollege peers. The prevalence of alcohol use in the

thirty days prior to the survey was 79.7 percent. Of greater concern is the difference in heavy drinking (consumption of five or more drinks consecutively during the preceding two weeks). Forty-five percent of surveyed college students reported heavy drinking during the two weeks prior to the survey compared to 38% of their noncollege peers.

Engs and Hanson (1988) reported that a change in the legal drinking age has not significantly curtailed collegiate drinking. While overall drinking among college students remains stable, albeit excessively high, the "proportion of undergraduate students (81 percent) who drink is higher than the proportion of students of legal age (73 percent)" (p. 2) who drink.

Reports from the 1986 Monitoring the Future Survey (Johnston, et al, 1987) indicated that 92% of college students consumed alcohol during the year immediately preceding the survey compared to 87% of their noncollege peers. In addition, 45% of college students were identified as heavy drinkers (consuming five or more drinks in a row during the two weeks preceding the survey) compared to 38% of their noncollege peers of the same age. These and similar data have led some researchers to conclude that alcohol consumption increases during college, perhaps as a function of changes in lifestyle (Cormier, Prefontaine, MacDonald, & Stuart, 1980; Brown, 1985).

Explanations for the discrepancy in consumption of alcoholic beverages between college students and their noncollege peers frequently focus on the stress of college and the perceived acceptance of drinking by college personnel (Lavin, 1980; Berkowitz & Perkins, 1986; Anderson and Gadaletto, 1984). In a 1982 survey of college students use of alcohol, Anderson and Gadaletto (1984) reported that 74% of surveyed schools allowed beer to be consumed at campus functions and 64% allowed "hard liquor" to be consumed at campus functions.

One principal and very influential advocate of alcohol use has been the media. Atkins, Nevendorf, and McDermott (1983) reported a positive correlation between the amount of alcohol consumed and the amount of exposure to alcohol ads. Yet, 74% of the 330 colleges from all fifty states and the District of Columbia represented in the Anderson & Gadaletto (1984) study permitted facilities whose primary business was the selling of alcohol to advertise in student newspapers. The media's portrayal of attractive, upper middle class, intelligent individuals enjoying alcoholic beverages is very enticing, particularly to students who aspire to become or remain a member of the upper socioeconomic class (Breed & Defoe, 1979; Katzper, Ryback, and Hertzman, 1978; Lowery, 1980; and McEwen & Hanneman, 1974).

Alcohol has significantly added to the problems colleges and their students must address. Colleges and universities are liable for students' behavior associated with school-required internships and practicums. Colleges and universities also are liable for problems which occur as a result of failure on the part of the institution to enforce drug policies and for allowing excessive drinking on campus (Tractenburg, 1988; Wurtzel, 1988; Burse, 1988). Beyond liability to the institution, alcohol use has been associated with damage to campus property, violent behavior and physical injuries. Anderson and Gadaletto (1984) observed a significant increase in damages associated with alcohol use from 1979 to 1982. Alcohol use among collegiates has resulted in greater attrition on college campuses as a result of missed classes, failing grades, and lowered grade point averages (Walfish, Wentz, Benzing, Brennan, & Champ, 1981; Hamilton, 1985). Other complications experienced as a result of students' excessive drinking include legal problems, driving while intoxicated, and censure from family and friends (Jessor & Jessor, 1975). In a needs assessment of alcohol abuse on a college campus, Walfish, et al (1981) reported that 65% of their college sample experienced difficulty remembering, 49% experienced nausea, 16% missed class, 15% reported to class after drinking, 67% had driven after several drinks, 42% had driven knowing they had consumed too much alcohol,

and 36% had engaged in some activity while under the influence of alcohol which they regretted.

Colleges and universities face expensive ramifications from students' use of alcohol. In order to curtail the use of alcohol among collegiates, colleges and universities must develop substance abuse programs that address the specific needs of their students. Familiarity with common correlates of alcohol abuse and self-reported reasons for alcohol use will provide some bases from which to assess individual populations and on which to develop alcohol prevention, alcohol education programs, and alternative activities.

Brown (1985) reported that the best predictor of college drinking patterns was the "effect" students expected from their use of alcohol. The best predictor for nonproblem drinkers was an increase in sociability and an increase in physical pleasure, while the best predictor for problem drinkers was expected reduction in anxiety and tension. Other strong predictors of alcohol use include ethnicity, gender, socioeconomic status, and religiosity (Brown, 1985).

Engs and Hanson (1985) reported that heavy drinkers were most likely to be male, white, first year students, individuals with low grade-point-averages, and individuals for whom religion was not important. Similar findings were reported by Blane & Hewitt (1977). Barnes and Welte

(1983) reported similar results related to gender and ethnicity, but also found that students who were married, students who lived with their parents while attending college, and students who were employed 35 hours or more per week consumed significantly less alcohol than students living on campus, unmarried students, and students working fewer than 35 hours per week. Bolton-Brownlee (1987) and Nicoli (1985), reported personality and environmental influences as additional correlates of problem drinking, unlike the literature on early adolescent drinking which reported a strong correlation between parental drinking patterns and their high school adolescents drinking patterns (Forslund & Gustafson, 1970; Cahalin, Cisin, & Crossley, 1969; Fisher, MacKinnon, Anglin, & Thompson 1987; Nicoli, 1985). Barnes and Welte (1983) did not find parental drinking problems to statistically discriminate drinkers from abstainers among college students.

Specific gender differences in heavy alcohol use were reported by Wright, 1983; Barnes & Welte, 1983; Johnston et al., 1987; Engs & Hanson, 1985. Johnston et al. (1987) in their annual report of substance use among college students indicated that 6.4% of college males used alcohol daily compared to 3.1% of females, and 58% of males consumed "five or more drinks in a row" during the two weeks prior to the survey compared to 34% of females. Engs and Hanson (1983) reported that males consumed more beer

and were heavier overall liquor drinkers than females, but females consumed more wine than males.

A diversity of side effects result from the use of alcohol. Some are less severe than others. The more benign side effects include nausea, vomiting, hangover, trouble remembering, and irritability. The more severe consequences include delirium, delirium tremens, liver disease, coma, and death.

In summary, despite its potential for physical and psychological consequences, alcohol continues to be the single most prevalent drug used by college students (Johnston et al., 1987). Consumption of alcohol among college students remains alarming high, with approximately 91.5% of collegiates acknowledging the use of some form of alcohol. Reported gender differences in alcohol consumption suggest that male collegiates consume alcohol in greater quantity and more frequently than female collegiate. In addition to alcohol use alone, 21% of college students report the use of alcohol in combination with some other drug (Seay & Beck, 1984). Many colleges and universities are increasing their efforts to curtail alcohol use on their campuses in response to social expectations and federal standards for receiving financial aid (Anderson, 1988).

Marijuana

Marijuana is the most common preparation of the *Cannabis sativa* plant available in the United States (Nicoli, 1983). Hashish, a resin of the *Cannabis* plant is more potent than marijuana. However, assessments of its use are most often obtained with the term "marijuana." Therefore reports of marijuana use in this review also will include use of hashish, unless otherwise noted.

College students' annual prevalence of marijuana use waxed and waned from 1984 to 1986 with statistically insignificant increases and decreases (40.7% in 1984; 41.7% in 1985; and 40.9% in 1986) (Johnston et al, 1987). From 1976 to 1986, marijuana was the second most widely used drug among young adults 3-4 years beyond high school (Johnston et al., 1987).

In a longitudinal study of marijuana use from early adolescence to young adulthood, Newcomb and Bentler (1986) reported that cannabis use increased from 24% during young adolescence (ages 13-16) to 49% during late adolescence (ages 17-20). This difference was significant at the $p < .001$ level.

Literature on the adverse effects of marijuana suggests that "marijuana intoxication" negatively affects short-term memory, time perception, and learning (Nicoli, 1983). The cancer producing agents in marijuana are reported to be 70% more concentrated than those found in

cigarettes (Novotny, Lee, & Bartle, 1976). Even in moderate to moderately heavy doses, marijuana impairs motor skills and judgment (Nicoli, 1983), impairs birth weight of unborn children, and alters sperm count in males (Hingman, Aplert, Day, Dooling, Kayne, Morelock, Oppenheiver, & Zuckerman, 1982).

Although changes in "typical" roles for females may have contributed to narrowed differences between male and female drug users, sex differences continue clearly to distinguish marijuana users. Johnston et al (1987) reported that male college students have a annual prevalence of marijuana use of 45% compared to a 38% annual prevalence among female college students. This difference is partially attributed to an "experimental" personality that has been associated with female marijuana users and has been cited as a possible explanation for the tendency of female marijuana users also to use other illicit drugs (Traub, 1983; Hochman and Brill, 1973).

Nicoli (1985) identified several variables that are strong predictors of marijuana use among both male and female college students. Parental use of alcohol, depression, and lack of perceived closeness to parents were among the strongest predictors of marijuana use. However, 88% of female students attribute their initial use of marijuana to the influence of their peers. When asked what would be most influential in cessation of

marijuana use, students reported loss of employment or job security to be the most deterring factor (Traub, 1983).

Cocaine

Erythroxyton coca grows plentifully in the hills of South America, but cocaine, the alkaloid extracted from its leaves, is also abundant in the United States. The prevalence of cocaine has not eluded collegiate populations. A national survey of young adults reported cocaine use among college students increased at a rate in excess of college students' use of marijuana during the ten years from 1972 to 1982 (Nicoli, 1984). Johnston et al. (1987) reported an annual prevalence of cocaine use among collegiates of 17.1%, with an additional annual prevalence of "crack" cocaine of 1.3%. The lower rate of the latter drug may be due to its recent (1980s) introduction into the drug market.

Cocaine, whose street names include "lady," "snow," "the rich man's drug," "she," "Bernice," "gold dust," and "Dana Blanca" (Nicoli, 1984) is a legal anesthetic that can have serious side effects when used for nontherapeutic purposes or abused for therapeutic purposes (Siegel, 1984; Washton & Tatarsky, 1984; Chitwood, 1985). In a national survey of cocaine users aged 22- to 59-years-old who telephoned the 800-COCAINE hotline, Gold, Washton, and Dackis (1985) reported that 82% of the interviewed

respondents experienced problems with sleep, 76% experienced chronic fatigue, 60% experienced severe headaches, 58% experienced nose bleeds, 83% expressed feelings of depression, 83% reported anxiety, 82% reported increased irritability, 66% reported apathetic attitudes, 65% reported paranoia, 65% expressed difficulty concentrating in association with cocaine use, 57% reported problems with memory, and 53% reported sexual disinterest. Chitwood (1985) reported the following side effects from low use of cocaine (less than 1 gram on any given occasion, primarily nasally ingested no more than once a week). Sixty-seven percent of "low users" experienced drying of the mouth, 60% experienced sweating, 64% experienced irregular heart beats, 22% experienced visual distortions, 47% reported that they had a repeated urge to grind their teeth, and 31% reported changes in their breathing patterns.

O'Malley, Johnston, and Bachman (1985) suggested that cocaine use increases after high school in a linear pattern through age 21. Further, while the probability of initiating use of most other illicit substances tends to decline after age 18, the risk of first time use of cocaine continues through age 24 (Kandel, Murphy, & Karus, 1985). This suggests that cocaine use may not begin for many students until they reach college age.

Although drugs have permeated all socioeconomic levels of society, cocaine continues to be associated with "privileged" society. Even among this group (average income in excess of \$83,000) use sometimes has to be curtailed because of the expense associated with the cost of the drug (Gold et al., 1985). Cocaine has a relatively short "high" of 1 to 2 hours (O'Malley, Johnston, & Bachman, 1985), requiring more frequent use to maintain the desired effect. Due to the expensive price of cocaine, coupled with the need to repeat the drug relatively frequently, it would seem that the more affluent college students would be more financially capable of handling the cost of cocaine.

Cocaine is available in several different forms. The powdered form of cocaine, which is inhaled through the nostrils, may be laced with dry milk, talcum powder, sugar, procaine amphetamines (Nicoli, 1984; Rivers, 1987), and/or quinine (Rivers, 1987). Consequently, large quantities may be required to obtain the desired effect. Freebase cocaine is "the cocaine alkaloid... It volatilizes at a low temperature and the user inhales the vapor" (Gold et al., 1985, p. 197). "Crack" is a very potent form of cocaine that has been cooked, allowed to harden, and then broken into pellets frequently called "rocks." This form of cocaine, which is smoked, is less expensive because it requires less cocaine to achieve a

"high," but it is highly addictive.

Cocaine is sometimes mixed with heroin and injected intravenously. This process is referred to as "speedballing" and significantly increases the possibility of cocaine overdose in users (Gold et al., 1985). Cocaine is sold in every state in the United States.

While cocaine may not be readily available to some college students, substances which produce similar effects to cocaine, such as Peruvian, Flake, Snocaine, and Hard Rock Crystal, are advertised in magazines and can be purchased in drug paraphernalia shops (Gold et al., 1985). Gold et al. (1985) reported that these substances circumvent the law by attaching warnings on the labels which indicated that they are "not for drug use".

A review of the literature suggests that cocaine use has not been proven to cause the use of other illicit substances, nor does experimental use of cocaine (nonpatterned use with a total lifetime use of less than 1 gram) result in later use (O'Malley et al., 1985). However the literature does suggest that cocaine users tend to use other substances (O'Malley, et al., 1985; Kandel et al., 1985; Chitwood, 1985). Consequently, cocaine use may result from risk-taking behavior or failure to receive desired "highs" from other substances.

Cocaine users have been described as differing from noncocaine users in several ways. Individuals who use

cocaine beyond the stage of experimentation were described by Kandel et al. (1985) as "[displaying] the most deviant lifestyles of all young adults..." (p. 106). More specifically, cocaine use tends to be influenced by students' living arrangements and marital status (O'Malley et al., 1985; Kandel, et al., 1985). Married young adults or young adults living at home are less likely to use cocaine than their nonmarried peers residing outside of their parents' home.

Psychotherapeutic Drugs

Psychotherapeutics, unlike many substances abused by college students, are prescribed by physicians for medical purposes (Nicoli, 1985). Nicoli (1985) suggested that student users of psychoactive drugs differ in personality, values, lifestyles, and relations with their parents from their nonuser peers. Many of these differences parallel characteristics of alcohol users. Specifically, students who use psychotherapeutic drugs for nonmedical purposes generally are less conforming than their nonuser counterparts. Users are also reported to be less involved with religion, 21% compared to 45% of nonusers (Nicoli, 1985).

If campus efforts to curtail the initial use of abusive substances during the college years are to be successful, information that predicts which students are

most likely to use specific drugs is essential. One of the most common predictors of nontherapeutic use of psychotherapeutic drugs is depression, a frequent complaint among college students (Nicoli, 1985). Other predictors include lack of perceived closeness to parents, lack of parental religious convictions, parental attitude about students' use of psychotherapeutic drugs (condoning or failing to reprehend use), and parental use of psychotherapeutic drugs for nonmedical purposes (Nicoli, 1985).

Sedatives and Tranquilizers

Sedatives and tranquilizers are two more classes of psychotherapeutics frequently used by college students for nonmedical purposes. Barbiturates, commonly referred to as "yellow jackets", "red birds," "downers," "red devils," and "blue heavens," along with methaqualone (quaaludes), are the most popular sedatives among collegiates (Nicoli, 1984). Johnston et al., (1987) reported an annual prevalence of 2.4% for barbiturates and 1.3% for methaqualones in 1986.

Barbiturates, sometimes used by college students to improve sleep, are reported by Nicoli (1984) to be effective for no more than a week. After this period rapid eye movement (REM) sleep becomes very concentrated as a rebounding effect of loss of REM sleep during the

period of consumption (Nicoli, 1984).

Barbiturates are reported to produce effects similar to those reported for alcohol use, including withdrawal symptoms. Nicoli (1985) reported that barbiturate intoxication is sometimes mistaken for alcohol intoxication. However, when levels of intoxication seem excessively greater than that reported by blood alcohol levels, barbiturate intoxication should be considered a possible alternative diagnosis (Nicoli, 1985). Like alcohol, small quantities of barbiturates may aid in stress reduction while large quantities may result in mood swings, irritability, coma and even death. Barbiturates are frequently used in suicidal overdoses (Nicoli, 1985).

Methaqualones (quaaludes), frequently referred to as "downers," are reported to be effective in decreasing the effects of cocaine (Nicoli, 1984). Annual prevalence of methaqualone use among college students has decreased from 7.2% in 1980 to 1.2% in 1986 (Johnston et al. 1987). This is an impressive trend that continues in spite of methaqualones aphrodisiacal effects. Although collegiates' use of methaqualones has decreased substantially over the past seven years, a survey of college students use of abusive substances would be incomplete without information on the use of these substances.

Nontherapeutic use of tranquilizers among college students waxed and waned during the seven years prior to the Monitoring the Future survey. For the six years spanning 1980 to 1985 collegiates' use of tranquilizers decreased steadily from 6.9% to 3.5%. However, annual prevalence of nonmedically supervised use of tranquilizers increased to 4.4% in 1986 (Johnston et al., 1987). The major tranquilizer used by college students is diazepam (Valium). Valium is not considered to be physically addictive nor is it considered fatal when used alone, even in large doses (Nicoli, 1984). The greatest danger to collegiate valium users, other than psychological addiction, emanates from its combination with alcohol, in which case it can be fatal (Nicoli, 1984; Rivers, 1987).

Stimulants

Perhaps the most commonly used stimulants are amphetamines. In the ten year span from 1972 to 1982, nontherapeutic use of amphetamines increased from 6% to 18% among college students (Nicoli, 1985). Use of stimulants in general among college students was reported at an annual rate of 22.2% in 1981. Use decreased from 21.1% in 1982 to 10.3% in 1986 (Johnston, et al., 1987). Although nontherapeutic use of stimulants has decreased in recent years, the possible side effects resulting from misuse of "uppers," "bennies," "dexies," and "pep pills,"

as they have been coined by users, are too severe to warrant complacency.

Amphetamine use is greater among females than among males. (Nicoli, 1985). To a large degree, this difference has been attributed to females' obsession with thinness and subsequently to their use of diet pills. "Amphetamines produce a sense of exhilaration, a surge of energy, hyperactivity, a state of extended wakefulness, and a loss of appetite" (Nicoli, 1985, p. 41). Possible side effects from amphetamine use include withdrawal, fatigue, insomnia, depression, apathy, and, in severe, cases amphetamine psychoses resulting in violent behavior and hallucinations. College students reported disturbances in speech, teeth grinding, frequent face touching, and feelings of being watched as side effects after the use of amphetamines (Nicoli, 1985).

Although amphetamines are reported to have greater use among female students, male athletics may use amphetamines to increase their performance and endurance. Although amphetamines do not change the hormones of athletes, as has been reported from the use of steroids, amphetamines do prevent the athlete from tiring, at least until use is discontinued.

In a longitudinal study of drug use from early adolescence (ages 13-16) to early adulthood (ages 21-24), Newcomb and Bentler (1986) reported a significant increase

in students' use of hypnotics and stimulants from 11% in early adolescence to 30% in late adolescence. A similar significant increase from 30% to 38% was reported for late adolescence (ages 17-20) to young adulthood (ages 21-24).

Designer Drugs

As concern for drug abuse grew in the continental United States, penalties for dealing drugs became tougher in response to the outcry denouncing existing laws as too lenient toward drug suppliers. Dealers were not to be dissuaded by such measures, and therefore developed means of circumventing the law by chemically manufacturing drugs with similar but more potent effects than their illegal counterparts. Because these substances do not have the same molecular structure as their illegal counterparts, prosecution is avoided under the Controlled Substance Act (Smith & Seymour, 1985).

Three types of designer drugs dominated the drug market in 1986... synthetic forms of phencyclidine (PCP), meperidine, and fentanyl (Beck & Morgan, 1986). Although PCP analogues have been traced back as far as the late 70s, there is a paucity of literature on these synthetic substances. PCP analogues have most often been found in samples of PCP. Consequently, researchers question whether these substances were intended to be engineered or were simply the result of poor "synthesis" (Beck & Morgan, 1986).

In the early 1980s another designer drug, methylphenylpropionxypiperidine (MPPP) was introduced on the street drug market (Beck & Morgan, 1986). MPPP is an analogue of the commonly prescribed pain medication Demerol. One of the more serious side effects of meperdine analogues results from the contaminate, methylphenyltetrahydropyridine, which has resulted in irreversible Parkinson's disease (Beck & Morgan, 1986).

Fentanyl, another synthetic drug, is perhaps the most widely used of the designer drugs. Shaefer (1985) and Ruppert (1985) reported that approximately 20,000 addicts in California were regular users of one or more of the fentanyl analogues at the time of their studies. Since then, the use of fentanyl has spread to other areas (Ruppert, 1985) perhaps partially as a result of use by college students.

Fentanyl is reported to have effects similar to those produced by the use of heroin or morphine, while considered to be thousands of times more potent (Beck & Morgan, 1986). "China White" is a fentanyl analogue that has decreased in availability since it became an illegal substance (Beck & Morgan, 1986). However, the removal of one fentanyl analogue simply results in the advent of another, partially because they are less expensive, more potent, and, at least for a while, more legal than heroin.

Tobacco Products

Unlike most other drugs, the trend of tobacco use is decreasing among young adults, more rapidly among males than among females (Page & Gold, 1983). Generally, college students smoke less frequently than their noncollege peers. Johnston et al. (1987) reported an annual prevalence of daily smoking of 13% for college students compared to 30% among their noncollege peers. Similar differences are reported for smoking half-a-pack of cigarettes a day. Collegiates reported a half-a-pack rate of 8.3% compared to 24.2% for young adults of the same age not enrolled in college.

Unlike their similar aged peers not enrolled in college, college students show a distinct sex difference in smoking rates. College females smoke more than college males (Johnston et al., 1987; Wechsler & Gottlieb, 1979; Roberts, 1980; Page & Gold, 1983; Glover, Edmundson, Alston, Holbert, Schroeder, 1987). College females reported a half-a-pack daily smoking rate of 10% while college males reported a half-a-pack daily smoking rate of 7%. Similar differences were reported for daily smoking prevalence rates and for monthly prevalence smoking rates, 10% for males versus 15% for females and 20% for males and 24% for females, respectively (Johnston et al., 1987).

Page and Gold (1983) suggested that perhaps the gender differences reported in prevalence of cigarette smoking is

associated with gender differences in beliefs and attitudes about cigarette smoking. In a survey of college students beliefs' about cigarette smoking, they 1983) reported that females were significantly more likely to believe that cigarettes "leave a bad odor on clothing," that cigarettes "increase dependency on cigarettes," and that cigarette smoking "result in keeping weight down" (p. 535). Although females are aware of the adverse social, economic, and physical side effects of cigarettes, the strong emphasis females place on thinness may further perpetuate the use of cigarettes among this population. However, compliance motivation reports indicate that females are significantly more willing to comply with their mothers' wishes as they relate to smoking, with the wishes of "other people important to them" and with the wishes of doctors than were male college students, thereby providing potential catalysts for change (Page & Gold, 1983, p. 534).

The health hazards associated with cigarette smoking are numerous. Cigarette smoking has been correlated with a higher probability of carcinoma of the oral cavities, carcinoma of the upper and lower airway, atherosclerosis, Buerger's Disease, and coronary artery disease secondary to atherosclerosis (personal communication with David Wagner, III, MD, November 12, 1988)

While the use of smoking tobacco has decreased during recent years, the use of smokeless tobacco has increased (Scaffidi, 1986). Use of smokeless tobacco is most prevalent among males, specifically white males. A racial analysis of college students use of smokeless tobacco indicated that 29.3% of white males had tried dipping tobacco and 36.8% of white males had tried chewing tobacco. Five percent of black males had tried dipping and 28.2% had tried chewing tobacco (Glover et al., 1987). Glover et al. (1987) reported the annual prevalence smokeless tobacco rate to be 9% for the entire population of college students at a southeastern university and 19% among males at the same university. A national survey of college students reported 22% of college males and 2% of college females used smokeless tobacco.

While breathing problems, arithemia, and various forms of carcinoma resulted in decreased use of cigarettes, recent literature on the use of smokeless tobacco products among collegiates report that less than 33% of college students could identify health hazards associated with the use of smokeless tobacco. Further, most perceived smokeless tobacco to be less hazardous and less of a "social evil" than smoking tobacco (McDermott & Marty, 1986). The false perception that smokeless tobacco is a safe alternative to smoking tobacco (Scaffidi, 1986) has been advertised directly in commercials and indirectly in

sports events such as baseball. Health problems associated with the use of smokeless tobacco contradict the perceptions. Physical effects from use of smokeless tobacco include degrading of mouth bone and tissue, loss of teeth (Christian, Armstrong, & McDaniel, 1979), carcinoma in the mouth (Schottenfield, 1981; McDermott & Marty, 1986), gingival problems associated with inflammation and recession (Christian, et al., 1979; Greer & Poulson, 1983), and increased tooth problems (Greer & Poulson, 1983; Christian et al., 1979).

Over-the-Counter Drugs

Illicit drugs are included among the more than 300,000 over-the-counter (OTC) products (Hecht and Gilbertson, 1979) and thereby are a readily available and generally inexpensive source of drugs for students. Medical costs, suspicion of health care providers, and increased insurance rates have resulted in many individuals treating themselves in an effort to curtail health care costs (Vener & Krupka, 1986). Esmay and Weitheimer, 1979 reported that approximately 60 to 75% of health problems are self-treated. Even when self-treating, most individuals do not seek the free advise of pharmacists within drug stores (Cafferata, Lach, & Reifler, 1980). Thirty-nine percent of students included in a survey of college students' use of OTC products reported that friends' opinions are

most important in their decision to use a particular product; 30.5% reported that seeing or hearing about the product through the media is important; and 34.8% reported that seeing the product displayed on the counter of the store is important in their decision to use a product (Cafferata, et al., 1980).

Reports from the Cafferata et al. (1980) survey also suggested that students are more likely to mistreat some illnesses than correctly treat them with approved products. Treatments for insomnia with approved products was reported at a rate of less than 1%, treatment for nervous tension with approved products was reported at a rate of 10%, and treatment of cold sores with an approved product was reported at a rate of 40.2%. Each of these disorders has potential for becoming a chronic problem.

Many over-the-counter products can cause serious health problems when used inappropriately. Vener and Krupka (1986) reported stomach bleedings resulting from the use of aspirin, hypertensive crises resulting from the use of diet pills, anxiety resulting from caffeine, ulcers resulting from excess use of antacids, and serious side effects from mixing drugs. Many of these problems result from inappropriate use of drug products. Much of students' information on how OTC products should be used is acquired from witnessing their parents use similar products (Shands, Goff, & Goff (1983)).

In a survey of college students enrolled in communication classes, Shands, Goff, and Goff (1983) reported that 18% of college students borrowed prescription medicine, 60% thought taking OTC drugs for eight days was appropriate behavior when labels cautioned against "prolonged use," and 31% thought it was appropriate to take these drugs for periods from nine to 15 or more days. Additional problems with interpreting instructions were evident when students matched trouble with prostrate glands to difficulty having a bowel movement. Twenty-two percent of college students could not match the term "antihypertensives" to the definition "medicines for high blood pressure (Shands, Goff, & Goff, 1983).

A frequently used OTC products among young women is diet pills. Krupka and Vener (1983) reported that 30.1 % of college female participating in their survey had used nineteen different OTC diet products during the year preceding their survey.

Diet pills are not intrinsically dangerous when used in accordance with manufacturers' instructions. However, one of the major appetite suppressants in many diet pills is phenylpropanolamine hydrochloride (PPA). PPA is potentially deadly when used in combination with other products containing this substance (Krupka & Vener, 1983; Vener & Krupka, 1986). In a study of college students use

of OTC products, Krupka and Vener (1983) reported that 30.1% of young adult college females had used products containing PPA during the year immediately preceding the survey and 25% of these women had experienced some side effects resulting from their use of the product.

Advertisements for OTC stimulants and diuretics have focused on women's magazines. Vener and Krupka (1986) reported that 79% of women's magazines contained at least one advertisement for an OTC substance. Many of these ads proclaim miraculous effects for users. As the Federal Drug Administration continues to remove drugs from prescription lists and replace them as OTC substances the potential for abuse increases. Failure to read instructions included in OTC products along with misinterpretation of those instructions have resulted in students using drugs longer, in greater quantities, and in combinations with other drugs (Shands, Goff, & Goff, 1983).

Heroin and Other Opiates

Heroin use continues to remain low among young adults. The annual prevalence among college students has remained at 0.1% to 0.2% from 1981 to 1986 (Johnston et al., 1987). However, a survey of college students' use of abusive substances would not be complete without an assessment of this substance.

Diacetylmorphine (heroin) is frequently referred to as "horse," "H," and "junk." Heroin is injected intravenously and is sometimes mixed with cocaine and injected for a more potent effect. Other opiates include codeine, Dolophine, Darvon, Demerol, Tawin, and Preludin (MacGregor & Keith, 1989). Because all opiates other than heroin are grouped together in most national surveys, it is difficult to determine the extent of use of these substances among college students. Johnston et al. (1987) reported an annual prevalence of "other opiates" among college students to be at a rate of 4.0% in 1986, a significant increase from 2.4% in 1985.

The opiates are generally consumed for their ability to produce a "high" or to reduce dysphoria from a psychoactive disorder (O'Brien, Ehrman, & Ternes, 1986). Later illness is associated with withdrawal (O'Brien et al., 1986).

Phencyclidine Hydrochloride (PCP)

The use of PCP increased among college students in the late 1970s. Originally, PCP was intended as an anesthetic but was withdrawn from the market because of reported side effects of delirium, hallucinations, and convulsion (Nicoli, 1984). It has since been approved for use in veterinary medicine.

PCP, commonly referred to as "angel dust", "crystal", (Nicoli, 1984; Rivers, 1987), "cyclones," "elephant tranquilizer," "horse tranquilizer," "killer weed," "super weed," "rocket fuel," "surfer," "scuffle" (Nicoli, 1984), "HOG", "KJ", and "mist" (Rivers, 1987) has resulted in death among its users as a result of distortions and delusions about themselves and the world (Nicoli, 1984). Because PCP can easily be produced with easily acquired chemicals, PCP is readily available to college students (Nicoli, 1984).

Mushrooms

There is a paucity of research available on psychedelic mushrooms (Thompson, Anglin, Emboden, & Fisher, 1985). What is known is that mushrooms are easily grown in the United States. According to a study sponsored by the National Institute on Drug Abuse and conducted on college students enrolled in three California universities in 1983, 14.8% of college students use psychedelic mushrooms (Thompson et al., 1985). More males use mushrooms than females. Mushroom are the most frequently used hallucinogens but very few negative side effects have been associated with their use (Thompson et al., 1985).

Public vs Independent Institutions

Heretofore, a majority of the research studies conducted on collegiates' use of drugs has failed to

differentiate between public and independent postsecondary institutions of education. Consequently, it is unknown whether there is a significant difference in drug usage among the two populations.

Independent colleges and universities outnumber public postsecondary institutions by 1,808 to 1,493 in the United States (United States Department of Education, 1988).

Although independent postsecondary institutions encompass the majority of colleges and universities in the United States, they do not enroll the greater number of students. Enrollment in independent postsecondary institutions of education continues to lag behind enrollment in public institutions; nevertheless, 23% of all college students attend independent schools. During 1981, enrollment in independent schools increased by 16% compared to 24% in public postsecondary institutions (Millett, 1981; Kerr & Gade, 1981).

Kerr and Gade (1981) noted that independent colleges differ in one important respect from public colleges. According to these authors, independent colleges as a whole typically recruit full-time "traditional" college students. Therefore it can be deduced that independent college undergraduate students are most likely to range from 17 to 22 years of age.

Another distinction between public and independent postsecondary institutions relates to funding sources.

Tuition and fees at private institutions must generate approximately half of the revenues required for educational and general functioning purposes (Kerr & Gade, 1981). An additional 15% of funds are acquired from private gifts, with another 10% coming from endowments which lose revenues as a result of inflation (Kerr & Gade, 1981). The federal government provides aid to both public and independent institutions at the rate of about 16% of required revenues. Approximately 40 state governments help offset public and independent college and university expenses by providing funding based on the number of full time enrolled students attending each institution. Independent institutions receive about 2% of their revenues from state government (Kerr & Gade, 1981). Therefore, lack of sufficient state and federal funds compels independent institutions to cater to an elite clientele.

Public postsecondary institutions are governed by the state. Their missions, policies, and programs are all determined by the state. Unlike public institutions of postsecondary education, independent colleges and universities are developed as a result of individuals sharing a common interest in establishing a school. The missions, types of programs offered, and to some degree, the extent of their dependence on state funding are all determined by the institutions and their chosen board of

governors (Millett, 1981; Smith, personal communication, November, 1988). Self control affords these institutions the option of restricting courses, social organizations, and campus entertainment. These restrictions may afford a more sheltered environment, which may, in turn, influence the use of drugs. Conversely, such restraints may simply result in more concealed use of drugs. Students who choose to attend independent colleges and universities generally agree with the missions and thus are willing to subscribe to the added expenses required to attend nonpublic institutions.

Regardless of the reasons students select independent colleges, the social and environmental differences between many public and independent colleges warrant separate assessments of the two types of institutions. The idea of assessing specific subpopulations and developing interventions appropriate for each population has gained renewed acceptance among substance abuse researchers (Battjes & Jones, 1985; Cavendish, 1987; Tooney et al., 1982).

Since 1980, over 100 published studies on substance use and abuse among college students have been conducted. The majority of these studies have combined surveys of both public and independent colleges and universities with small representations from each institution. Most of these studies do not separate the data compiled on

students who attend independent colleges from data compiled on students who attend public colleges.

A review of the relevant literature revealed a paucity of research on substance abuse assessment in independent postsecondary educational institutions. Few colleges and universities, whether public or independent, have invested the time and effort required to assess their individual substance abuse problems. Institutions that have implemented drug prevention, education, and intervention programs have done so based on national surveys of public and independent institutions. Most of these surveys do not identify the percentages of either type of institution in their descriptions of the surveyed population. Further examination of the literature suggests that environment, parental use of substances, and peer use of substances are important correlates of students' use of abusive substances. Independent postsecondary education institutions generally do not serve the same clientele as do public postsecondary institutions. Independent institutions are able to specify their missions and to attract students who agree with those missions and can simultaneously afford the added expense of an independent college or university. Unlike public institutions, most independent colleges and universities have religious affiliations and many are single-sex institutions. Because of the frequently-reported correlation of religious

affiliation with abstinence from drug use, it is hypothesized that the percentage of independent college students who report use of illicit drugs is significantly different from the percentage of college students in general who report use of illicit drugs.

Although the legal age for drinking has increased from age 18 to age 21, the annual prevalence of alcohol among collegiates has remained at approximately 92%, significantly unchanged from 1980 to 1987 (Johnston et al, 1987; Engs & Hanson, 1988). Further, a more recent national survey of colleges and universities (Engs & Hanson, 1988) suggests that "the proportion of undergraduate students (81 percent) who drink is higher than the proportion of students of legal age (73 percent) [who drink]" (p. 2). At least one study has been conducted in which alcohol use among students who attend independent colleges and universities was compared to alcohol use among students who attend public colleges and universities. Results from that study suggest that students who attend independent colleges use alcohol more frequently than their peers who attend public colleges and universities (R. C. Engs, personal communication, September 21, 1988).

The Campus Milieu

Although most patterns of drug use are developed prior to enrolling in college, almost 50% of collegiates increase

their use of substances after entering college (Anderson, 1988). "Because many students see the college years as a time of experimentation and independence-seeking, many colleges are often seen as 'havens' for the abuse of drugs and alcohol" (Anderson, 1988 p. 2).

Drug use among collegiates has been attributed in part to a lack of guidance associated with living on campus. In a survey of college students attending both public and independent colleges, Boyer (1987) reported that most college living is supervised by another college student who generally does not report drug use except in crisis situations. Consequently, the 80% of independent college freshman who live on campus (Boyer, 1987) are introduced to an environment in which one might easily perceive an acceptance of substance use.

Students interviewed about their preference for on-campus living indicated that convenience and social interactions strongly influenced their decision to live on campus (Boyer, 1987). It is the quality of these social interactions that led Austin (1985) to report that campus-housed students are more likely to use drugs than off-campus housed students.

The opportunities for engaging in unbridled behavior are exacerbated when students have a great deal of free time (Boyer, 1987). According to a survey of independent and public college students conducted by Boyer (1987), 42%

of full-time undergraduate students attending independent colleges were employed 10 hours or less a week. Twenty-five percent of public college students were employed 10 or fewer hours per week. Only 14% of full time students attending independent colleges were employed 21-35 hours a week. Twenty-three percent of full time public college students were employed 21-35 hours during the average week.

A part of the freedom afforded college students is the ability to choose the kinds of activities they wish to engage in outside of the classroom. Boyer (1987) and Astin (1985) suggest that the problems associated with campus living do not result from this freedom of choice but from a lack of appropriate activities from which to choose. For example, although fraternity and sorority houses only accommodate approximately 3% of campus populations, students cite fraternity and sorority parties as the source of much of campus social life and as a means of upsurping the minimum age drinking laws (Boyer, 1987). Fraternity and sorority parties have repeatedly been linked with drug use behavior (Kodman, 1984; Saltz & Elandt, 1986; Boyer, 1987). Participation in these parties is a primary means of meeting other students and a means of acceptance (Boyer, 1987). Consequently, it is no surprise that the overwhelming explanation for use of alcohol in college is sociability (Anderson, 1988; Carmody, 1986; Lundberg, 1985).

Summary

Based on this review of the literature, 45% of students enrolled in 2-year or 4-year colleges and universities used some illicit substance during the previous year (Johnston et al., 1987). While alcohol continues to be the substance of choice among collegiates, cocaine, marijuana, psychotherapeutic drugs, stimulants, designer drugs, tobacco products, over-the-counter drugs, phencyclidine hydrochloride, and mushrooms are also used in varying degrees by college students.

Although the literature reviewed in this chapter attests to continued research about college and university students, several deficiencies remain in the literature. First, there is a paucity of literature on substance use among students attending independent colleges and universities. Previous research conducted on both independent and public colleges, often failed to report separate data for the two types of schools. Consequently, independent colleges and universities may be using results that are not descriptive of their populations in developing and implementing substance abuse programs.

Recent changes in federal funding require colleges and universities to establish campus substance abuse programs as a prerequisite for receiving some forms of financial aid (Anderson, 1988). If these programs are to be effective for independent colleges and universities,

appropriate assessment of substance use on individual campuses is a necessity.

CHAPTER III

METHODOLOGY

This chapter consists of three major sections describing methods which were used to conduct a survey of independent college students at six colleges and one university. The seven institutions have been termed the MIRM consortium. The chapter begins with a description of the colleges and university participating in the survey, followed by an overview of the research questions which formed the basis for development of the survey questionnaire. A complete list of the survey questions is included in Appendix A. The second section of the chapter reports procedures used in developing the questionnaire and conducting a pilot study, followed by a description of procedures used in collecting data for the main study. The last section of the chapter examines limitations of the study.

Participating Colleges and University

Data for this survey were collected from six independent colleges and one university located in the southeastern United States. Two of the colleges included in the survey enroll female students exclusively, and the remaining four are co-ed institutions. Enrollment ranges

from 549 to 3470 undergraduate students, with a median enrollment of 1150 undergraduates. Total tuition and fees for campus living for these schools range from approximately \$6,000 per year to approximately \$12,600 per year, with a median fee of \$8,310. Although each school requires minimum SAT scores of 500 for admission, three schools have an average SAT score of 1000 or better. All schools participating in the survey are liberal arts institutions affiliated with religious establishments, and one is a historically black institution. Two of the seven schools have graduate programs available on their campuses. (Lehman & Suber, 1989).

Research Questions

The following research questions formed the basis for the survey instrument and each will be addressed through one or more analyses of data.

1. What drugs are currently being used by MIRM students?
2. Where do MIRM students use drugs?
3. With whom do MIRM students use drugs?
4. What rationale do MIRM students give for using drugs?
5. What are common characteristics shared by students who use drugs?
6. At what times do MIRM students use drugs?
7. What quantity of drugs do MIRM students consume?

8. What consequences have MIRM students experienced as a result of their drug use?
9. What is the history of drug use among MIRM students?
10. What attitudes and beliefs do MIRM students hold regarding drug use?
11. How do MIRM students feel about the accuracy of the answers they provided on the survey questionnaire?
12. Is there a difference, by institution, in illicit drug use among students?

Questionnaire

Self Report

Of primary concern when addressing the issue of self-reporting is an understanding of the quality of measurement of the survey questionnaire. These concerns generally focus on the validity and reliability of the instrument. The reliability of the survey instrument for this particular survey cannot be assessed because data were collected during a single administration and no redundant questions were employed. To some degree, the validity of the survey questionnaire can be inferred as a result of several processes.

Two of the major concerns related to the validity of self-reported data are concealment and underreporting. Using information compiled by Harrell (1985), which suggests that mode of question wording, researcher

expectations and anonymity, respondents' ability to answer or recall information, and respondent's willingness to report information are most influential in self-reports, Nurco (1985) suggested six strategies for improving self-reported data when assessing substance use.

1. Assuring confidentiality of information
2. Establishing rapport
 - a. Selecting empathetic and skillful interviewers
 - b. Enlisting respondent support by presenting general objectives of the study, e.g., appeal to altruism
3. Checking records and informing subject of intent, which should be beneficial not only as a concurrent check but may actually improve accuracy of self-report
4. Urine monitoring and informing subject of this intent, which should be beneficial not only as a concurrent check but may actually improve accuracy of self-report
5. Concentrating on recent events
6. Making questions less specific (p. 8).

Five of the above strategies were incorporated in the survey design. Urine monitoring was not attempted because of its impracticality.

Harrell (1985) suggested that research questionnaires on substance abuse be pretested to determine potential bias resulting from the manner in which questions are asked. Consequently, the initial survey questionnaire was pretested prior to the pilot study being conducted.

Graduate students serving as research assistants were instructed to read a prepared statement which described

the purpose of the survey and how results would be used, assured participants of the confidentiality of their responses, and solicited their voluntary participation in the survey. This procedure is discussed in greater detail in the section describing the data collection process.

To reduce potential bias resulting from lack of recall, the survey items focused on recent use of substances except when inquiring whether or not a substance had ever been used.

Although Edwards (1957) reported that individuals are more likely to report information that is not negatively stigmatized by society, Amsel, Mandell and Matthias et al. (1976) and Cisin and Parry (1980) found that drug addicts were willing to provide accurate information on their consumption of drugs. Cisin and Parry (1980) reported that these findings are also true for nonclinic personnel except in the reporting of heroin use.

Instrument

A review of the relevant literature on substance use among college students suggests that a variety of drugs are used in varying degrees by collegiates. Further, Boyer (1987) reported that college students perceive the use of drugs as accepted behavior on college campuses. Consequently, a survey questionnaire was designed to elicit information on students' use of drugs, tobacco and

alcohol as well as to reflect their opinions about the use of these substances. In addition, the questionnaire survey sought information on students' views on campus administrative policies concerning substance use.

The original survey instrument was developed by the MIRM consortium and a survey methodology class under the instruction of Dr. Richard M. Jaeger. Many of the questions were extracted from existing substance abuse survey instruments and modified to more accurately assess college students' use of drugs. The researcher added questions on the use of designer drugs and religion prior to conducting the pilot study.

These questionnaire items were field-tested with a sample of 30 college students who were representative of the population for whom the instrument was constructed. Approximately 350 students participated in a pilot study using a revised version of the questionnaire.

The final draft of the instrument was reviewed by the researcher as well as several local drug experts and one national expert and, as a result, the researcher made several changes. Responses for Question 7 on living arrangements was changed from "on campus" and "off campus" to "alone off campus", "with parents", "dormitory", "with roommates", and "other". Question 25, which assesses if beer was consumed within the last 30 days, was added to the questionnaire. One of the original responses for

Question 35, which inquires the people with whom students drink, was deleted and the remaining responses were clarified. Responses for Questions 38 through 50, which inquire about reasons students drink, were changed from "yes" and "no" to categorical responses ranging from "never" to "very often (4 or more times a week)". Responses for Questions 53 through 63, which addressed situations students may have experienced while under the influence of alcohol, were changed from "yes" and "no" to categorical responses ranging from "never" to "yes, 4 or more times". Questions 87, 92, and 108 were added to separate the use of "crack" from other forms of cocaine. The screening question for Items 107 through 113 was changed from "Did you use any of the following drugs before you came to college?" to "When did you first use the following drugs?". The responses for Questions 107 through 117 were changed from "yes" and "no" to "I have never used (name of substance)," "elementary school," "junior high school," "senior high," and "college." Responses for Questions 118 through 143 were changed from "yes" and "no" to categorical responses ranging from "never" to "very often (4 or more times a week)." The researcher added Question 197 (If you answered "no" to Question 196, please explain why you feel your answers do not reflect your feelings and behaviors in the blank space below.) to increase the reliability of the questionnaire.

A complete copy of the questionnaire is included in Appendix B.

Item Formats and Questionnaire Content

Students were asked to provide responses to items that incorporated three response formats: exhaustive variables, dichotomous variables, and Likert-style scales.

Questionnaire items alternately made use of positive and negatively-worded stems to reduce the likelihood of students' acquiring a response set.

The first twelve questions on the questionnaire sought demographic information. Questions 12 through 20 asked respondents for information about their use of tobacco. Questions 21 through 78 inquired about students' use of alcoholic beverages and the effects they experienced as a result of consumption of these products. Questions 79 through 84 sought students' opinions about alcohol use.

The next section of the questionnaire, encompassing Questions 85 through 132, sought information about students' use of marijuana, cocaine, hallucinogens, uppers, downers, inhalants, opiates, designer drugs, prescription drugs, and over-the-counter substances. The succeeding questions, 133 through 157, inquired about students' personal experiences associated with use of the aforementioned substances. Information about the circumstances under which students used drugs was sought

in Questions 158 through 164.

The next section of the questionnaire, Questions 165 through 171, asked students to agree or disagree with a series of statements that they might consider sufficient reasons not to use drugs. Students' opinions about campus drug policies, campus drug programs, and campus drug problems were assessed by Questions 172 through 188. The last section of the questionnaire sought information on the likelihood that students would participate in programs on drug abuse if sponsored by different agencies. Additional questions in this section asked about students' grade point averages and the accuracy of their answers to questions on the questionnaire.

Pilot Study

The purpose of the pilot study was to test the readability of the survey questionnaire, to obtain students' suggestions regarding additions, deletions, or modifications of survey questions, to determine which of three sampling processes provided the best participation by students, and to evaluate the adequacy of proctors' instructions and data coding plans.

Sampling

Each of the seven participating institutions was asked to choose either a sampling frame of all undergraduate students including continuing education students or a

sampling frame of only undergraduate day students. Three of the seven schools chose to survey undergraduate day students and continuing education students. The remaining four institutions chose to survey undergraduate day students. Students participating in the pilot study were randomly selected from a roster provided by the registrar's office on each campus. Seven hundred fifty-seven students from the seven MIRM campuses, proportionally stratified by year-in-school classification, were selected to participate in the pilot study.

Pilot Data-Collection Procedures

A letter describing the purpose of the study and the students' role in the survey was distributed to the presidents, drug abuse coordinators, and deans on each of the campuses. A copy of the letter is included in Appendix C.

An estimate of the required pilot study sample size was calculated for the population of each campus to ensure that errors in estimating population proportions did not exceed .10 with 95% confidence (Jaeger, 1984). The required sample sizes for the survey were increased by 20% to increase precision of estimation and to reduce error due to non-response.

One of three data-collection procedures was selected by each institution: an assembly, sampling intact classes, or

a mail survey. Students selected for participation in an assembly or a mail survey received personally addressed and individually hand-signed letters requesting them to participate in the study. A copy of each letter is included in Appendix D. Assembly and mail survey data-collection procedures resulted in an unacceptably low response rate of 5%. Neither procedure was judged to be feasible for collecting data in the main study.

Sampling respondents within classes required collecting all data at a single hour on a given day (e.g. Wednesday at 11:00 a.m.) to reduce the possibility of bias resulting from dissemination of information among students and repetition of data from the same student. Classes were selected for participation in the pilot study by using stratified random sampling with proportional allocation across strata defined by class levels (i.e., 100-, 200-, 300-, & 400- level classes). Faculty whose classes were selected to participate in the pilot study were sent a letter from their Vice Chancellor for Academic Affairs or their school President explaining the purpose of the survey and requesting permission to have the survey conducted during class time. Faculty were further instructed that it would be necessary for them to be absent from the classroom once the proctor had been introduced. Proctors for the survey were trained graduate students from a local university not included in the study

or drug coordinators from schools other than the one being surveyed.

If faculty agreed to relinquish class time, students were read a statement explaining the survey process and its purpose, assuring confidentiality, and requesting their participation. In addition, the survey proctors requested that students complete a brief critique of the survey instrument. A copy of the critique is included in Appendix E and a copy of the proctors' instructions are included in Appendix F.

The completed survey questionnaires were placed in envelopes, sealed by the students completing the survey questionnaire, and returned to the proctors.

Analyses of Pilot Data

Editing. Except for the final survey item, students coded all responses on an optically scannable answer sheet. The last item asked students, "Do you feel confident that the answers you have given accurately reflect your feelings and behaviors?" If students indicated that their responses were not accurate or did not reflect their true behaviors, they were asked to provide additional information on the back of the survey instrument booklet. Since this question is directly associated with the validity of the instrument, careful consideration was given to students' explanations

before deciding how to treat their survey responses (e.g. discard the answer sheet). Therefore, all answer sheets and survey booklets were edited before they were separated.

Answer sheets were carefully checked for stray marks, multiple responses to single questions, and omission of responses. If no response was given for a particular question, efforts were made to determine if the response could be ascertained through an association with a response to some other question. If no association could be made, the students' response to the question was omitted from the survey. If an excess number of responses (3 or more) were omitted, except where not applicable due to skipping instructions, the answer sheet was not included in the data analyses.

Data Analyses. The completed answer sheets were scanned by an optical scanner and the data were transferred to a data file on the University of North Carolina at Greensboro's VAX computer system. The SAS statistical package was used to analyze the data. Descriptive statistics, including frequency distributions and population percentage distributions, were calculated for each response variable on the questionnaire.

Chi-square analyses were conducted to examine the statistical significance of association between selected

variables and institutions, as well as to examine the significance of association between substance use and students' gender, classification, region of origin, etc. These analyses were used to develop a preliminary profile of drug users on each of the seven campuses. Five response sheets were manually checked to verify the accuracy of the optical scanning procedure.

Results of the pilot study are reported in Appendix G.

Main Study

The procedures and results of the pilot study were reviewed and resulted in further development of the survey instrument and procedures, as noted below. The following sections describe the procedures used in completing the main stage of data collection.

Target Population and Operational Population

Initially, the MIRM consortium sought to generalize the results of the survey to all students attending the six independent colleges and the university participating in the study. However, an operational sample which omitted graduate students and continuing education students was selected from the population of students at each participating institution. Generalization beyond populations of daytime undergraduate students was thus precluded.

The sampling frame for six of the seven schools consisted of all undergraduate classes meeting at a given time on a given day (e.g., Monday at 11:00 am). Each institution selected the day of the week that offered the greatest representation of its students. The hour selected for completion of the survey was assumed to be representative of classes meeting on any given day, at any given hour during the day.

The sampling frame for the seventh school consisted of all undergraduate students attending a mandatory assembly. Both procedure imply an operational population of daytime undergraduate students-- the population thought most likely to make use of campus drug programs. Results derived from this sample might not be generalizable to students attending most of their classes in the late evening or at night.

Sampling Procedures

Required Sample Sizes. A required sample size (using simple random sampling) was calculated for the population of each campus, to ensure that errors in estimating population percentages did not exceed plus or minus five percent with 95% confidence. These required sample sizes were increased by 20% to increase percision of estimation and to reduce random estimation error attributable to non-response. The required sample sizes were 430, 412, 379,

373, 316, 303, and 272 for the seven institutions, after the 20% inflation.

Confidence Intervals. Table 1 reports 95% confidence intervals on selected population proportions, given observed sample proportions of current use of alcohol, current use of beer, current use of marijuana, willingness to participate in a college-sponsored drug program, and willingness to participate in a student sponsored drug program.

Table 1

Value of 95% Confidence Intervals on Selected Population Proportions Given Observed Sample Proportions

Survey Item	Sample Proportion that Responded "Yes"	Lower and Upper Limits
Currently Consume Alcohol	.799	.76 to .83
Currently Consume Beer	.855	.83 to .87
Currently Consume Marijuana	.347	.33 to .39
Participate in College-Sponsored Drug Program	.418	.38 to .44
Participate in Student-Sponsored Drug Program	.414	.38 to .44

In every case, the width of the 95% confidence interval is less than 0.10, indicating that desired estimation precision has been obtained.

Sampling and Administration Processes. Six of the seven participating institutions opted to collect data from intact classes. The seventh institution regularly scheduled a mandatory assembly of all undergraduate day students and elected to conduct the survey at one such assembly.

Upon receipt of course lists from each of the remaining six institutions, the sampling frame of courses was stratified by course level to permit proportional representation of all classifications of students. A letter describing the purpose of the study and the students' role in the survey was distributed to the President, drug abuse task force coordinator, and dean on each of the campuses. A copy of the letter is included in Appendix C. Each campus coordinator distributed the letters with the President's or Dean's signature to faculty whose classes were randomly selected to participate in the study. Faculty who chose not to allow their classes to participate in the survey were replaced by faculty teaching the same level class, on the same day, at the same time, and in the same subject area, whenever possible. For each of the six institutions, the frequency

and percentage of classes selected in the original sample of participants that completed the survey are reported in Table 2. This table also shows the frequency and percentage of replacement classes sampled. For the seventh institution, 100% of the students attending the mandatory assembly participated in the survey.

Table 2

Institutional Participation Rate as a Function of Original Classroom Sample

Institution	Classes Sampled n	Classes Included from the Original Sample		Replacements Sampled	
		n	%	n	%
A	13	11	85	2	15
B	12	11	92	1	8
C	12	11	92	1	8
D	9	9	100	0	0
E	14	11	79	3	21
F	16	16	100	0	0

A survey instrument, a computer scannable answer sheet, and a #2 pencil were included in a resealable envelope that was distributed to each student participating

in the survey. Proctors were hired to administer the survey to students. Faculty were asked to be absent from the room during the time the survey was administered, due to the sensitive nature of the questions included on the survey questionnaire. Each proctor read an introduction to the students in her/his group, which assured the anonymity of their responses, explained the purpose of the survey, explained how the results would be used, and explained where the data would be analyzed. Students were also told that their participation in the survey was voluntary and that their sealed completed packets would be taken directly to a facility off their campus for evaluation of the survey results. Additional instructions were read and written on the chalkboard for survey Items 34 through 37 and 158 through 164, which did not include a response for students who might have consumed alcoholic beverages or used drugs only once, and therefore would not have a usage pattern. This issue did not arise during the pilot study and therefore could not be addressed prior to printing the survey instrument. Consequently, proctors instructed students to write "never" on their answer sheet if they could not find an appropriate response on their answer sheet for these items. A copy of instructions used by proctors is included in Appendix F.

Data Editing

The same editing procedures were used in the main study as used in the pilot study, with two additions. First, answer sheets for students who penciled in "never" to Questions 34 through 37 and 158 through 164 were cleaned of any responses for these questions so that their answer sheets could be read by the optical scanner. Subsequently, these "no responses" were reported as "never" responses in the data analysis. Less than one percent of all answer sheets were discarded as a result of omitted responses.

Data Analysis

Data resulting from the survey were analyzed using the following procedures. Observed proportions were tabulated for Questionnaire Items 1 through 195 to estimate the percentage of the population possessing a particular characteristic (e.g., the percentage of students who use cocaine). Analysis of data from Questionnaire Item 196, which reports how MIRM students felt about the accuracy of the answers they submitted on the survey questionnaire, involved a slightly different procedure. Population proportions were estimated first using all data sheets, and were computed again using only the answer sheets of students who indicated that their responses were accurate. Chi-square analyses were completed for alcohol use,

marijuana use, use of beer, use of wine/wine coolers, and use of cocaine, to determine whether the differences between institutions' scores were statistically significant. Log-linear analyses were conducted to examine relationships between use of specific drugs, demographic variables, and propensity to utilize school-sponsored drug programs or student-sponsored drug programs. Population proportions were estimated for each school. Analyses were conducted to check the representativeness of the sample of respondents and to determine the precision of the computed estimates.

Limitations of the Study

Although concerted efforts were made to conduct a survey that would produce valid and reliable results for the seven institutions examined, the results of this survey might not generalize beyond these seven institutions.

The limitations of this study are twofold. Foremost in importance is the use of self-report measures for collecting data. Although the survey questionnaire was developed in accordance with the specifications of campus substance abuse coordinators, it relies on the self-report of students to obtain information. The literature suggests that self-reporting of tobacco, marijuana, cocaine, and heroin use is likely to result in

underrepresentation of actual use (Adams, 1985). However, precautions can be taken to improve underreporting (Nurco, 1985; Harrell, 1985; Smart & Jarvis, 1981; O'Malley, Bachman, & Johnston, 1983). One such precaution involved the use of self-administered questionnaires. Krohn, Waldo and Chiricos (1975) and Hochstim (1987) found a higher degree of self-reported use of substances when students were administered questionnaires than when students were involved in face-to-face interviews.

As suggested by Nurco (1985), (1) students were assured that their responses would be confidential; (2) every effort was made to acquire skillful proctors by recruiting graduate-level students and by explaining the survey process; and (3) students were informed about the intended use of the data. Harrell (1985) recommended that general questions be asked to ease recall. This procedure was used when students were asked whether they had ever used a substance.

Gfroerer (1985) noted that the greater the degree of privacy, the more accurate will be self-reports. For this reason, instructors were asked to leave the room during the time the survey questionnaire was administered. This procedure might have been undermined somewhat when several instructors returned to class prematurely.

Although several precautions were taken to decrease underreporting of substance use, prudence should be used

when interpreting survey results.

Classes were selected to participate in this study on the basis of practicality as well as adherence to probability sampling procedures. For this reason, samples might not represent the populations of undergraduates at the participating institutions. Because classes had to meet on a predetermined day at a predetermined hour in order to obtain required sample sizes without duplication for six of the schools, the sampling procedure was not completely random.

CHAPTER IV
RESULTS OF THE STUDY

The results of the study are reported in ten major sections. The chapter begins with a demographic description of the population of students who participated in the study. These data will serve as a reference point for later analyses. Following this section is a presentation of the findings as they relate to the respective research questions. No individual institutional analyses will be reported in an effort to ensure that the identities of the participating schools remain anonymous. Note that several of the research questions have been combined to enhance the interpretation and understanding of the results. The research questions as they are examined in this chapter are as follows: (1) What drugs are used by MIRM students and in what quantity? (2) What are common characteristics shared by MIRM students who use drugs? (3) What is the history of drug use among MIRM students? (4) Under what circumstances do MIRM students use drugs (with whom, where, and at what times)? (5) What consequences have MIRM students experienced as a result of their drug use? (6) What attitudes and beliefs do MIRM students hold regarding drug use? (7) What common characteristics are shared by MIRM

students who would attend a college-sponsored drug program? (8) What common characteristics are shared by MIRM students who would attend a student-sponsored drug program? (9) How do MIRM students feel about the accuracy of the responses they provided on the survey? (10) Is there a difference, by institution, in illicit drug use among students.

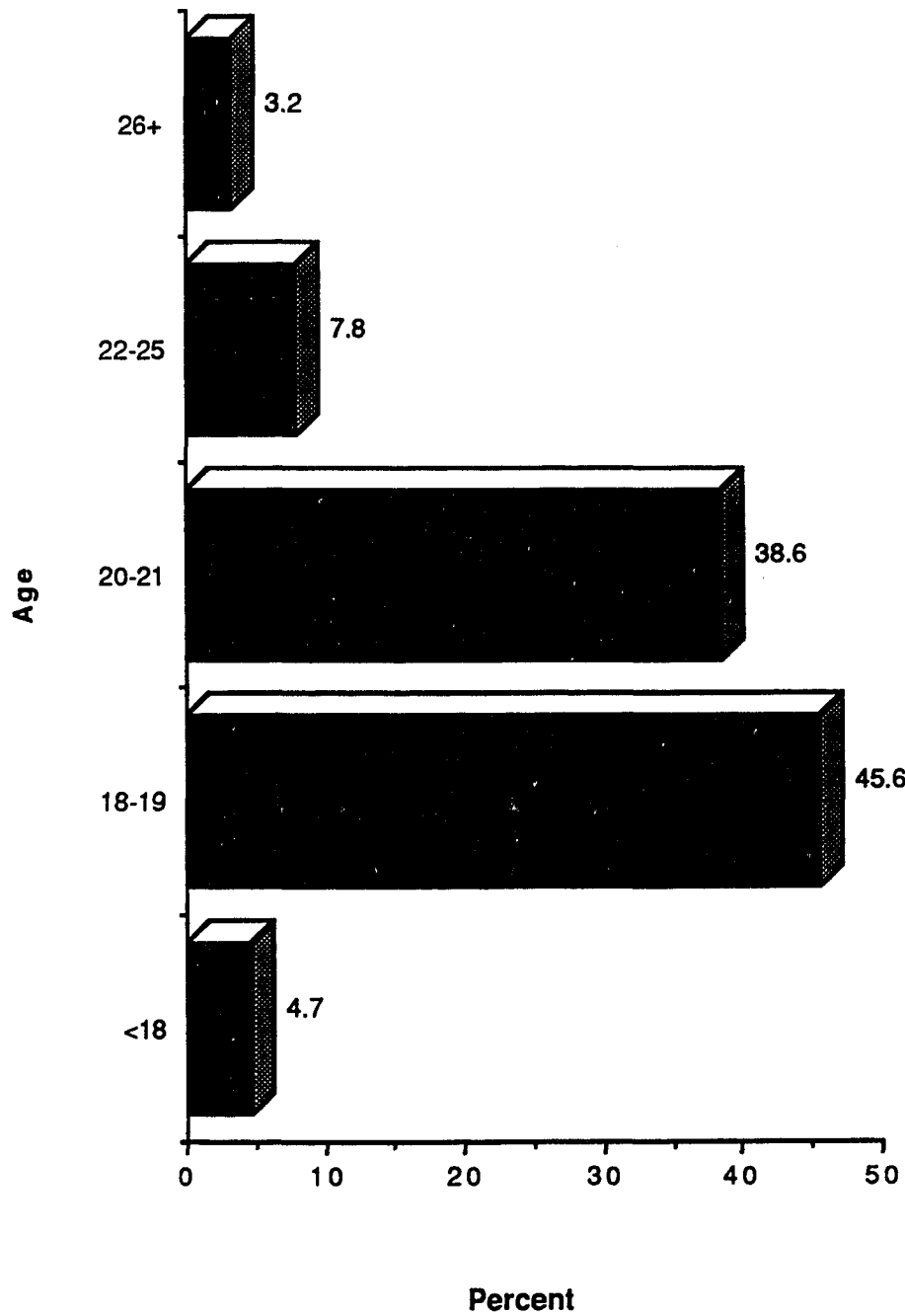
Statistics produced by this survey for students enrolled in MIRM institutions are compared with national rates of use for college students, reported by the National Institute on Drug Abuse (1988), when appropriate data are available.

Demographic Information

The information provided in this section is intended to describe characteristics of the respondents to this survey that might influence their use of, and attitudes toward, alcohol, tobacco, and other drugs. Only with knowledge of the composition of their student populations, can information on the central focus of this survey be interpreted for the MIRM institutions.

The sample was comprised of 1688 students. The distribution shown in Figure 1, indicates that over 88.9% of the survey participants were between 18 and 21 years of age, and at least half (50.3%) are below the legal drinking age of 21. Of the responding sample, 26.5% were

Figure 1. Distribution of ages of all respondents.



freshmen, 26.1% were sophomores, 24.2% were juniors, 22.2% were seniors, and 1.1% of were some other classification (see Figure 2). Collectively, the MIRM institutions enroll far more female students than male students. The distribution shown in Figure 3, indicating that almost two-thirds of the survey respondents (64.4%) were women, reflects the almost-all-female populations of two MIRM colleges in addition to the majority female enrollments of the other MIRM institutions. As shown in Figure 4, 86% of the respondents to this survey classified themselves as "white (non-Hispanic)." Another 11.4% classified themselves as "black" and very few students claimed membership in any other racial or ethnic group. Of the sample, 95.5% were single, 3.4% were married, 0.6% were separated, 0.4% were divorced, and 0.1% were widowed.

More than two-thirds (68.8%) of responding students live on their campuses in dormitories (see Figure 5). Of the third who live off campus, most live either with roommates (14.2%) or with their parents (8.5%). Among MIRM institutions, only one is an historically black college, with an enrollment that is almost exclusively black. The other MIRM institutions enroll relatively few black students (4% to 10%). None of the institutions enroll many American Indian, Asian, Pacific Islander, or Hispanic students.

Figure 2. Distribution of classifications of all respondents.

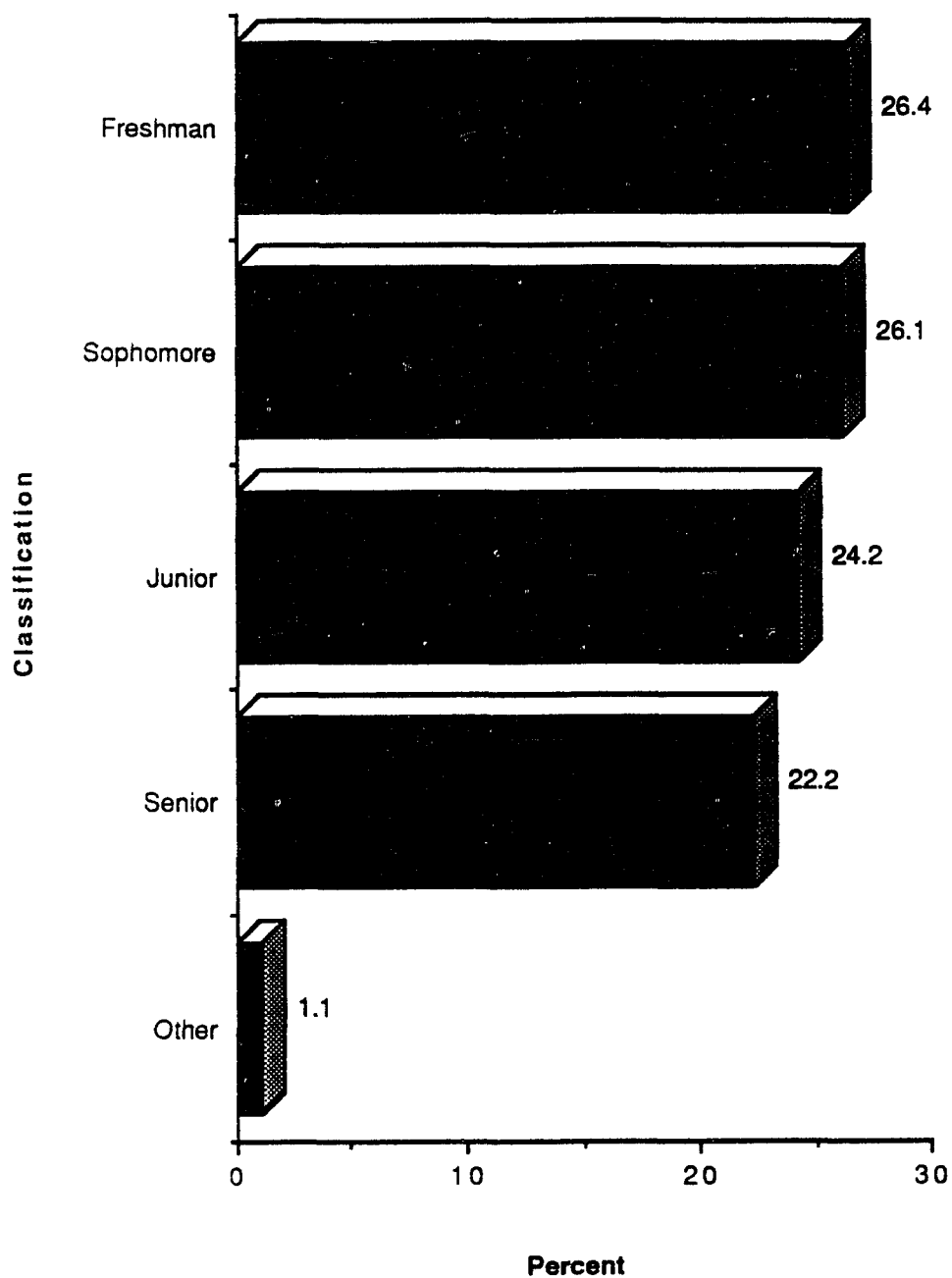


Figure 3. Gender distribution: all respondents.

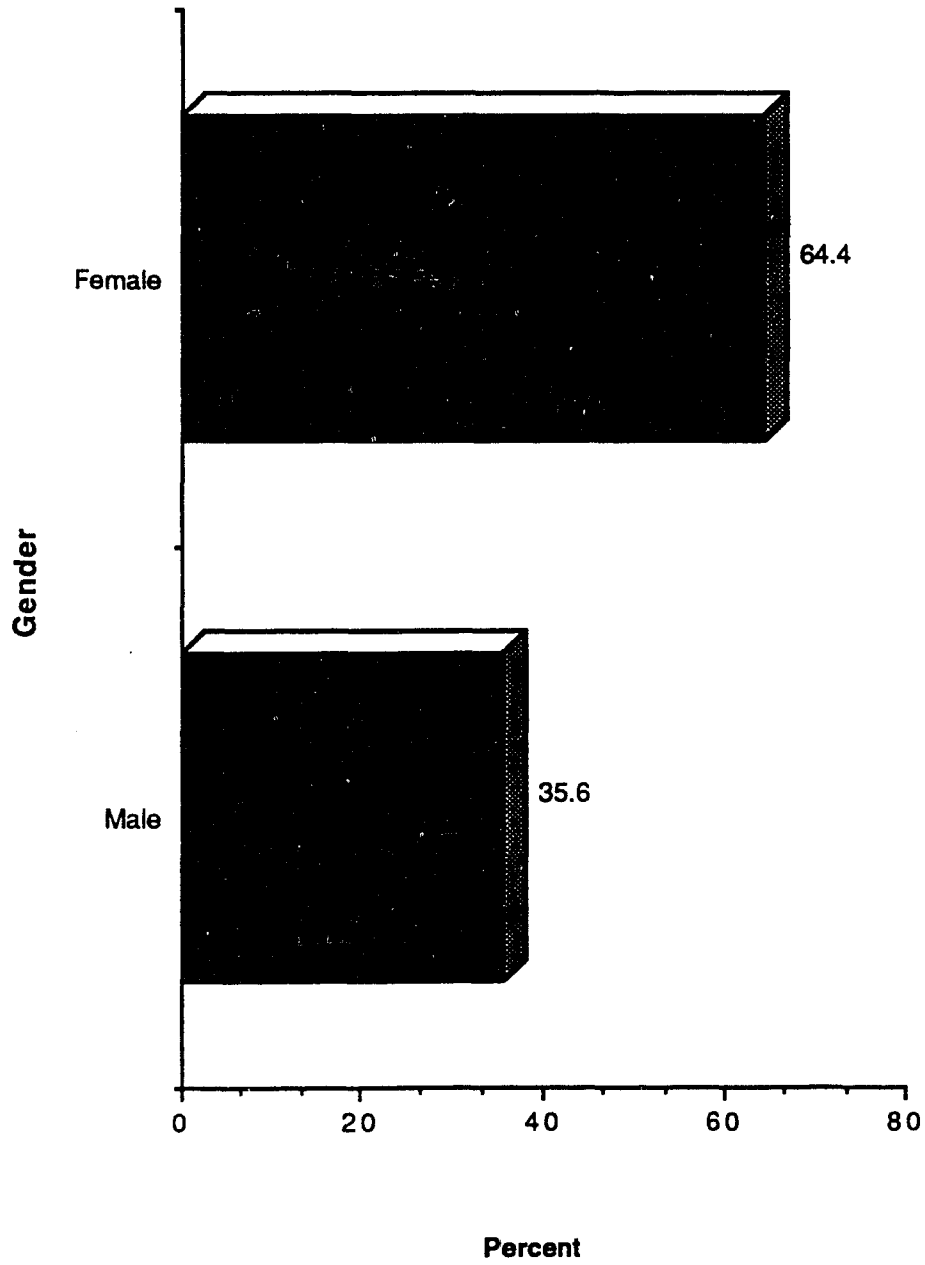


Figure 4. Distribution of race/ethnicity: all respondents.

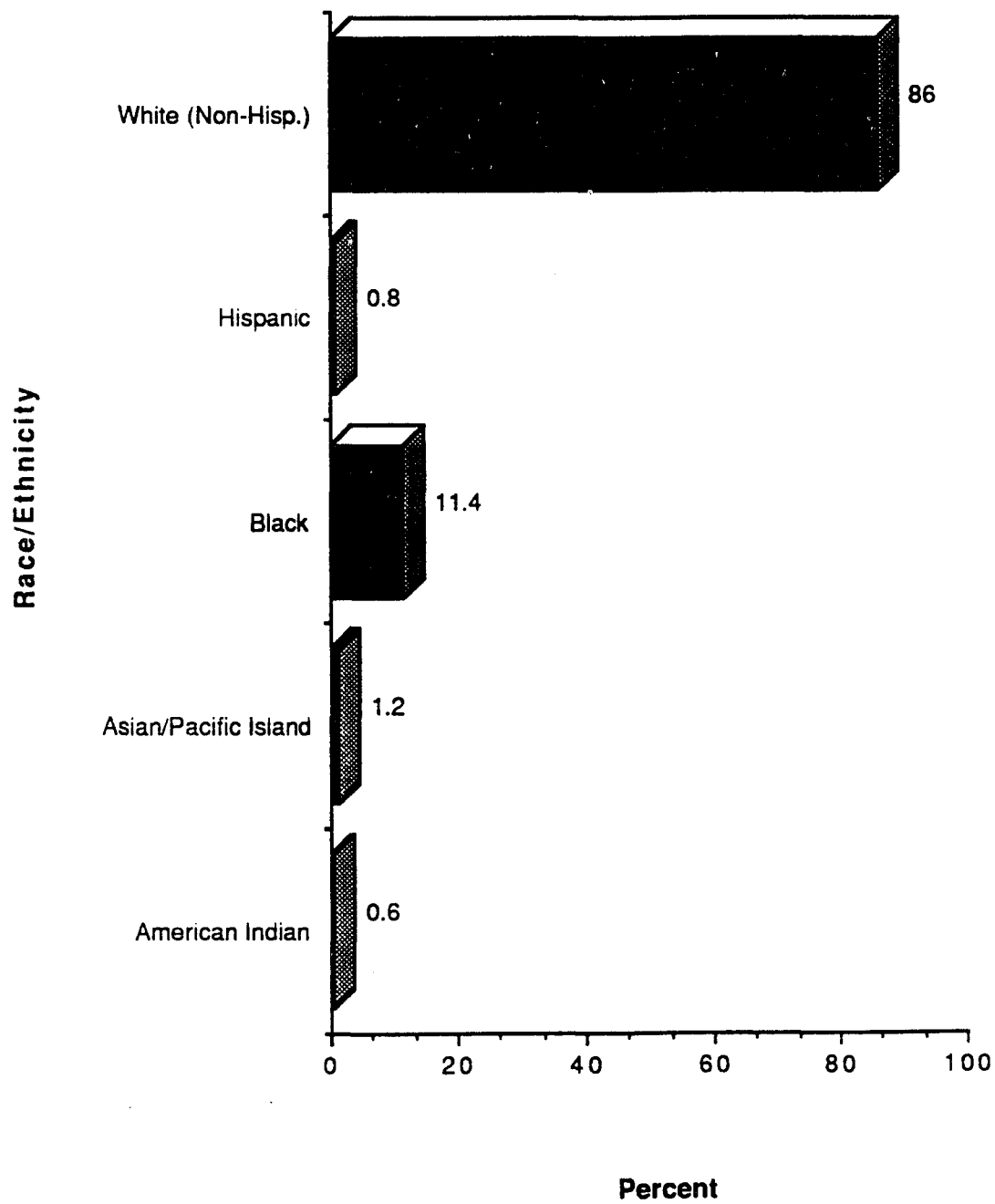
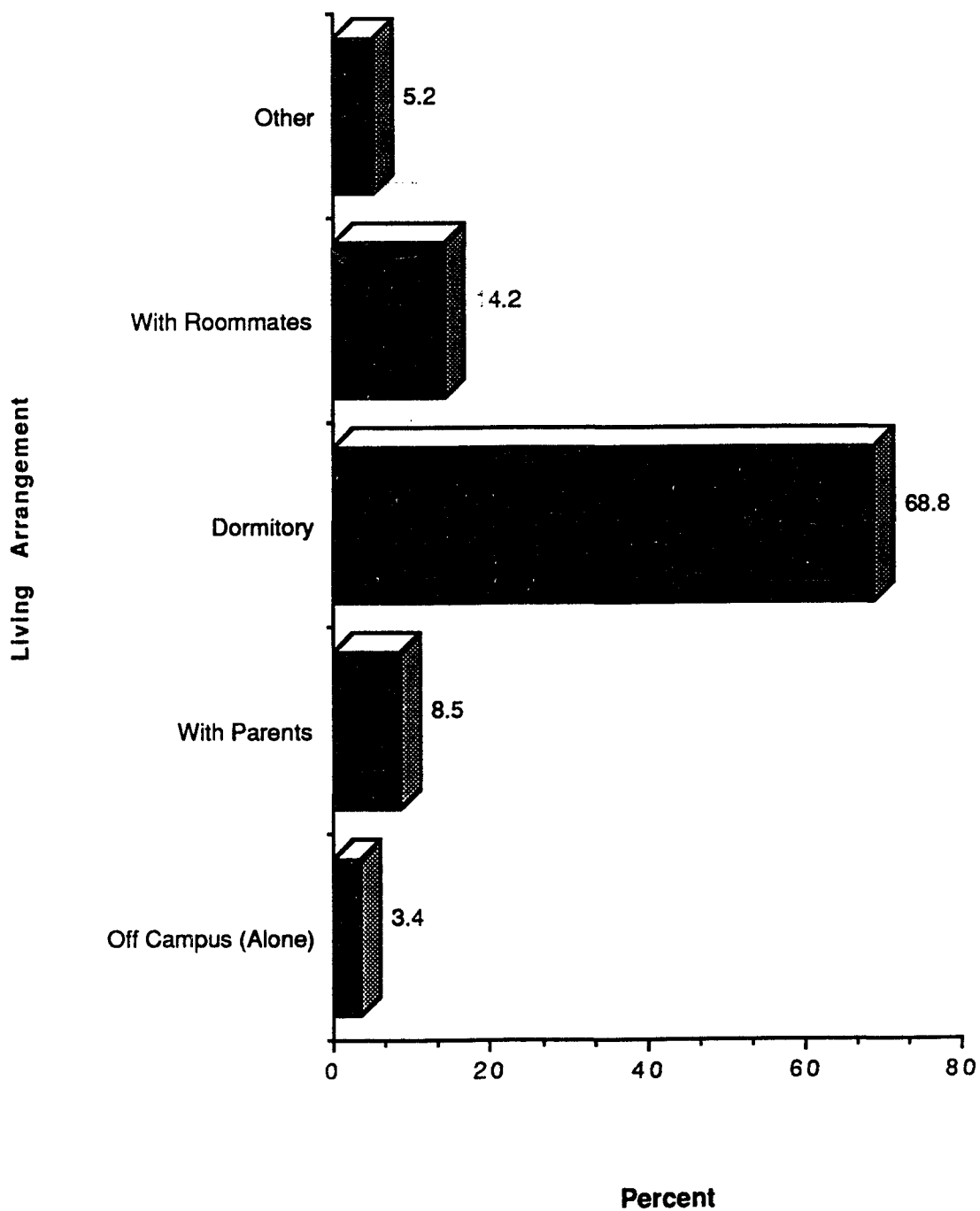


Figure 5. Distribution of living arrangements of all respondents.



As shown in Figure 6, 58.2% of the survey respondents reported that they were unemployed (apart from being students), and of those employed, almost all (92.3%) worked part-time (less than 30 hours per week) rather than full time employment. Further, among working students, 45.9% work exclusively on campus, 43.6% work exclusively off campus, and 10.5% work both on and off campus.

Drugs Used and Quantity Consumed

The information in this section summarizes the prevalence of drug use reported by MIRM institutions' students. Information is also provided for the quantity of use during the month preceding administration of the survey (current or recent use of drugs).

Tobacco Products

More than a fourth (25.9%) of responding students use some form of smoking tobacco and about 10% use some form of smokeless tobacco. The rate of use of smoking tobacco among students in MIRM institutions is approximately 26% compared to 14% reported by the National Institute on Drug Abuse for college students throughout the nation. Smoking prevalence is thus substantially higher among MIRM students than among college students generally. Similar differences were reported for smoking more than half-a-pack of cigarettes a day. MIRM students who use tobacco products reported a rate of 19.6% (see Figure 7) for

Figure 6. Distribution of employment status of all respondents.

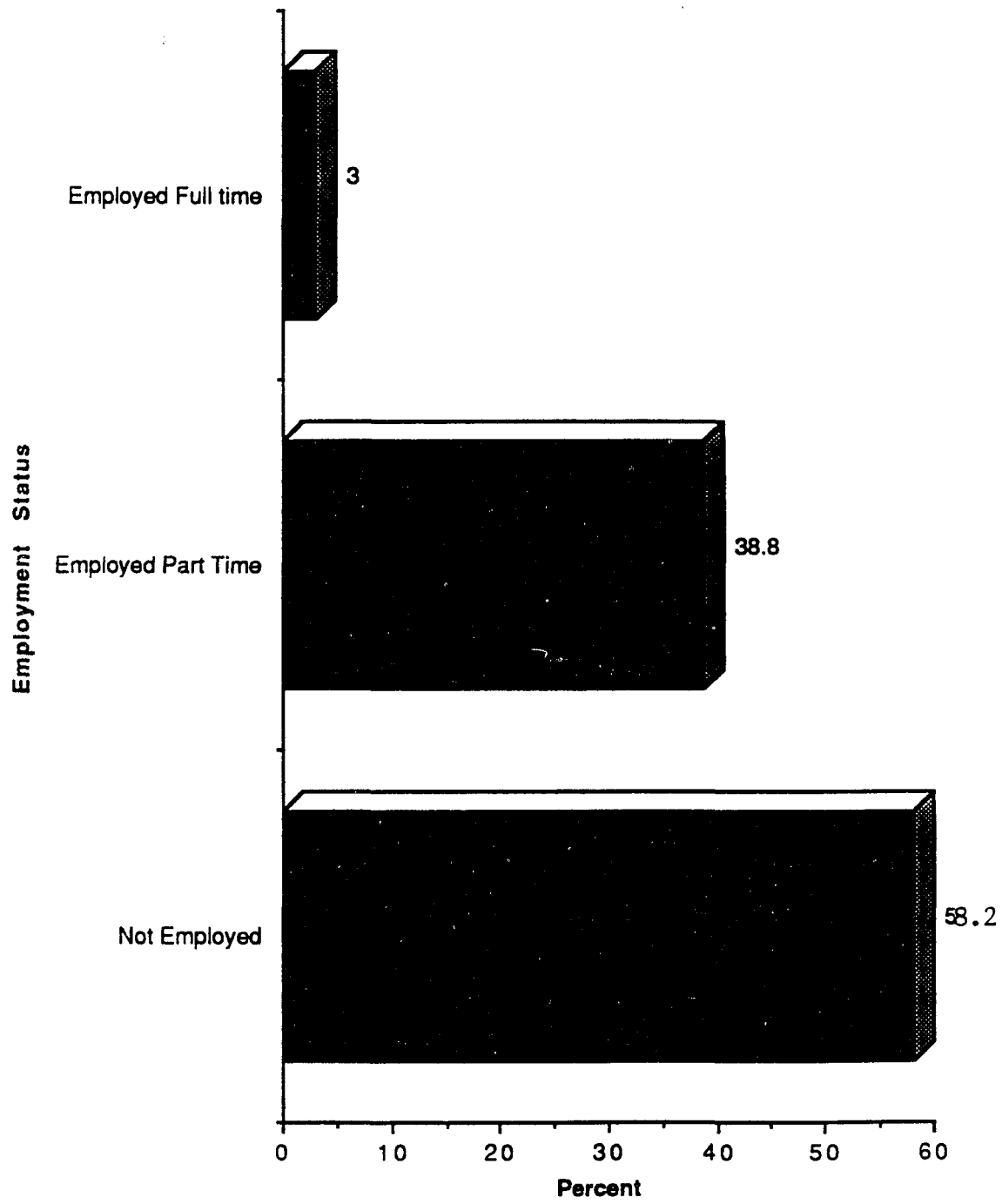
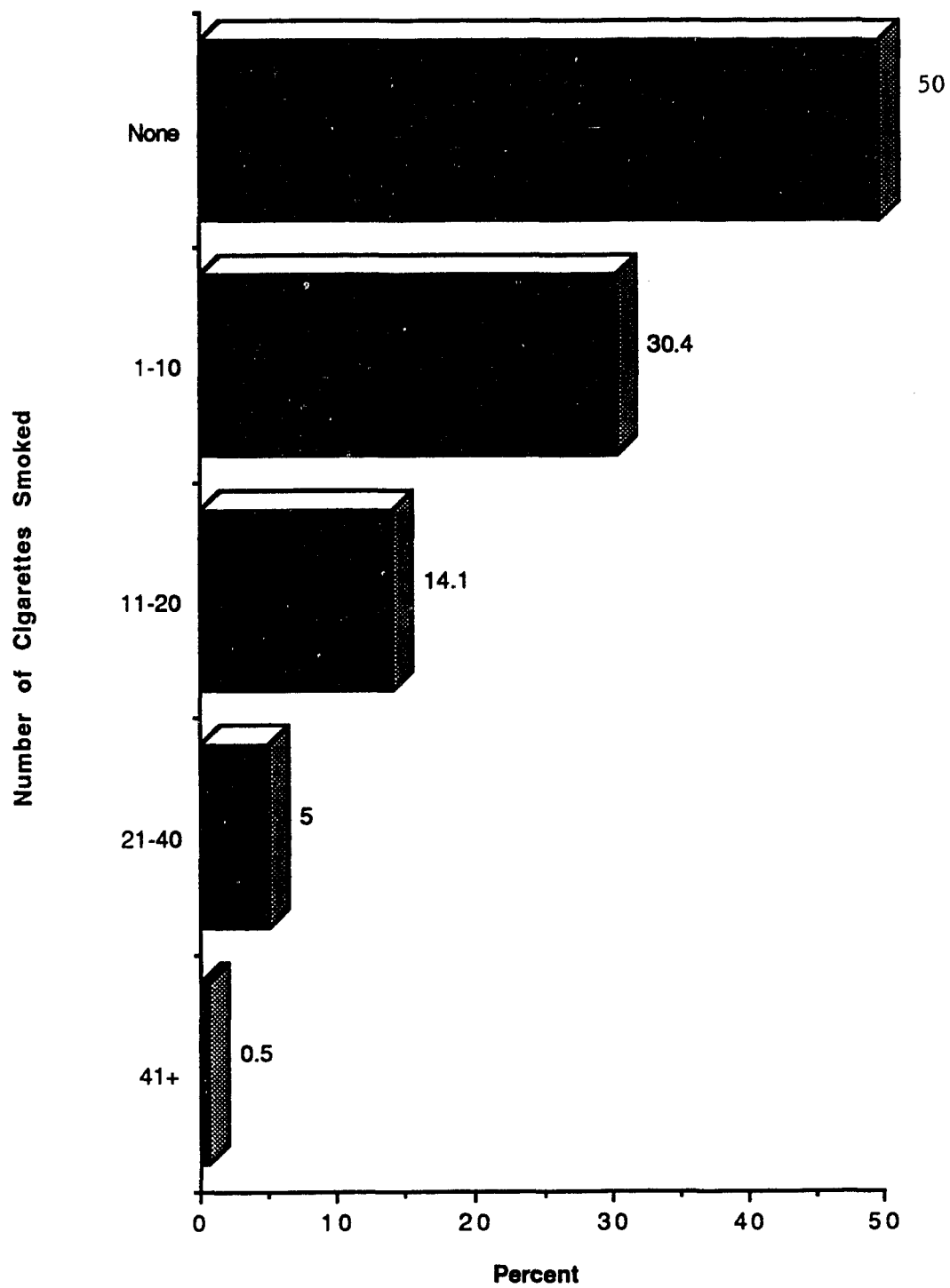


Figure 7. Distribution of cigarettes smoked the day before the survey; users of tobacco products.



smoking more than half-a-pack a day, more than twice the national collegiate half-pack-or-more-per-day rate reported by Johnston, et al. (1988). These findings are, perhaps, influenced by the higher prevalence of smoking among all North Carolinians, particularly when considering that approximately 45 percent of MIRM students lived in North Carolina at least three of the five years prior to entering their current college.

Among students who use any tobacco products, 5.7% used smokeless tobacco once on the day preceding administration of the survey. Comparatively, 7.8% used smokeless tobacco two or more times on the day preceding administration of the survey (see Figure 8).

Alcoholic Beverages.

Overwhelmingly, alcohol is the drug of choice among MIRM institutions' undergraduate students in the sample. Only seven percent of MIRM respondents stated that they have never used alcohol, while four-fifths of the respondents classified themselves as current alcohol users. Although a slightly higher percentage of students who drink consume beer (in contrast to wine or liquor), these latter beverages are reported by almost as many drinking respondents (see Figure 9).

Beer was the single most popular alcoholic beverage among MIRM respondents. Eighty-six percent of MIRM

Figure 8. Distribution of smokeless tobacco used the day before the survey; users of tobacco products.

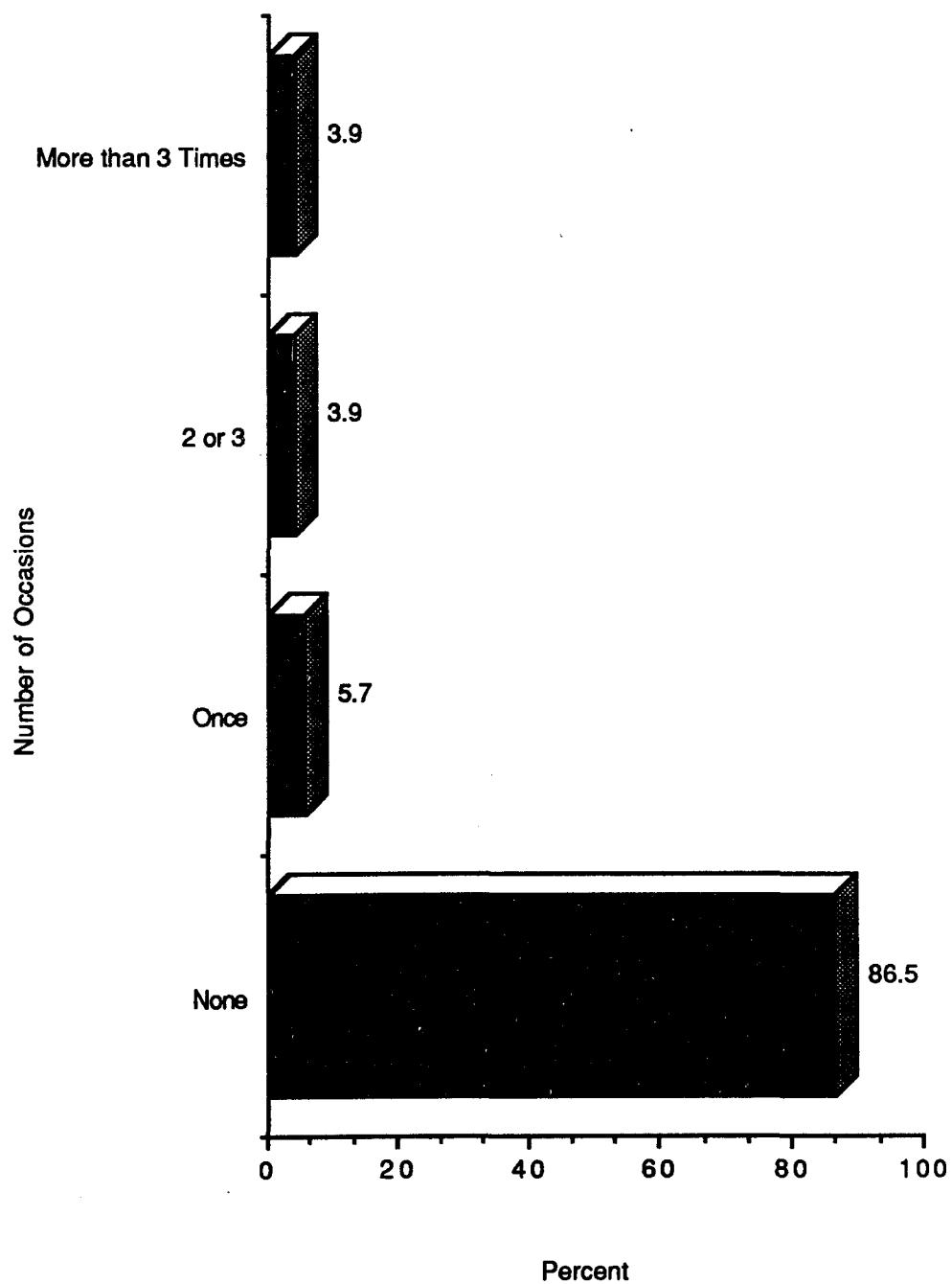
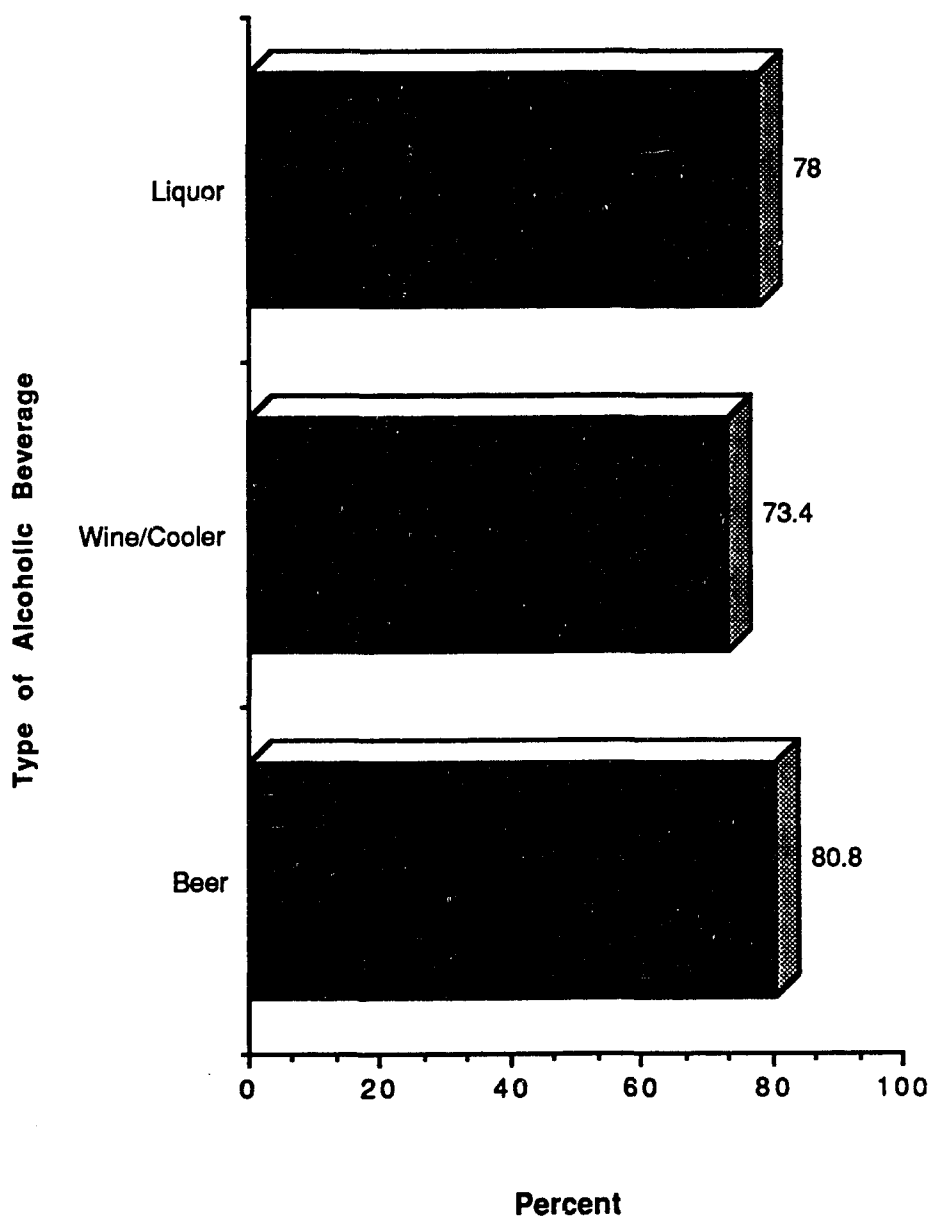


Figure 9. Distribution of type of alcoholic beverage consumed; all drinking respondents.



respondents who drink drank beer during the month preceding the survey. Of these, 34.4% consumed beer on three or more occasions during the week preceding the survey (see Figure 10). Approximately 40.1% of MIRM respondents who drink beer usually consume one or two (12 oz. each) beers; 32.4% usually consume three or four beers; 21% usually consume five or six beers; and 19.1% usually consume seven or more beers at one time.

Of the sample of MIRM respondents, 78% reported current consumption of liquor. Among drinking respondents, more than two out of five (42.8%) respondents reported drinking liquor during the week preceding administration of the survey (see Figure 11). Further, among drinkers of liquor, 44.7% usually consume one or two drinks (each containing one ounce of liquor); 36.5% consume three or four drinks; 11.2% consume five or six drinks, and 7.4% consume over six drinks at one time.

MIRM students' consumption of wine appears less problematic than their consumption of liquor or beer. Only 2.9% of MIRM respondents who drink consumed wine on more than two occasions during the week preceding administration of the survey and less than a third (28.2%) consumed wine on one or two or occasions. Approximately 56% usually consume no more than one or two glasses of wine (6 oz. per glass) at any one time; 32.8% consume no more than three or four glasses; 7.7% consume no more than

Figure 10. Distribution of occasions on which beer was consumed the week before the survey; all drinking respondents.

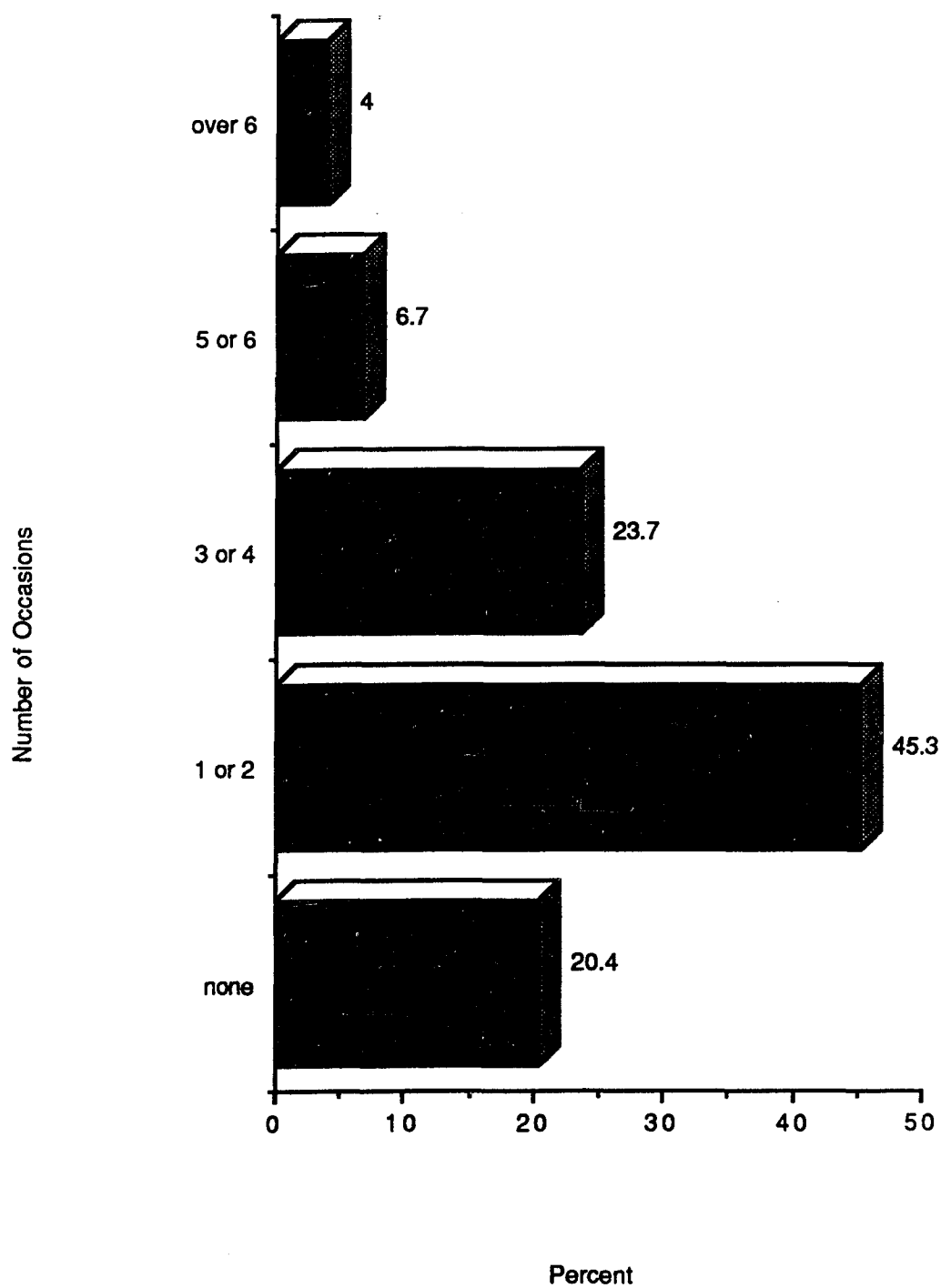
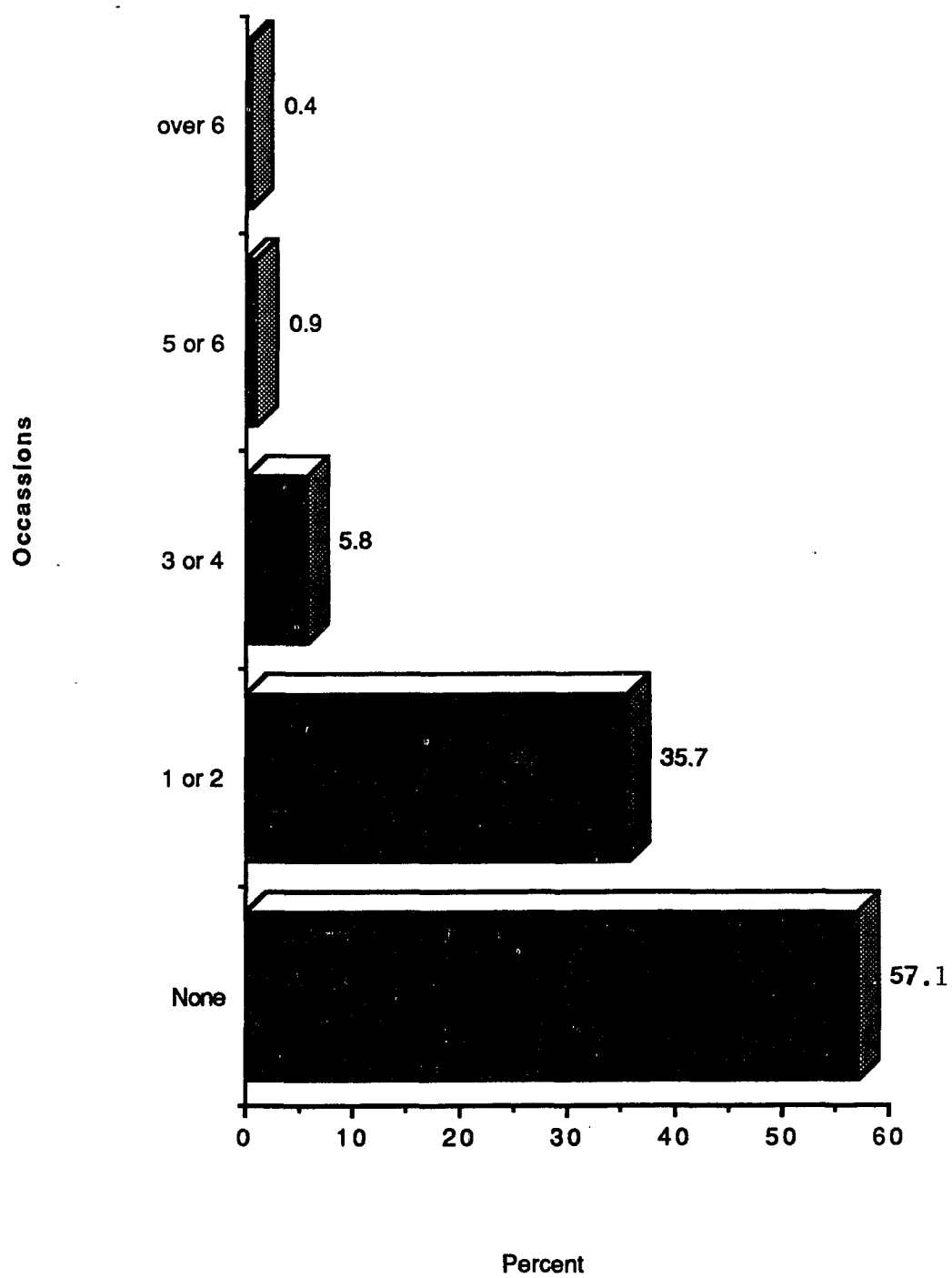


Figure 11. Distribution of occasions on which liquor was consumed the week before the survey; all drinking respondents.



five or six glasses; and 3.4% consume over six glasses.

It should be noted that students' use of wine and wine coolers was assessed with the same survey item. Consequently it is impossible to determine from the data the percentage of use for each substance independently. Although wine coolers may have alcohol concentrations ranging from 5% to 17%, fortified wines' alcohol content may range from 17% to 24%. Therefore these data should be interpreted very cautiously when trying to determine the extent of problematic use of wine among MIRM respondents.

Approximately 21.1% of respondents who drink (93% of all respondents) stated that they drank at least several times per week, suggesting the potential for serious alcohol addiction. Forty percent of drinking respondents reported that they consume alcohol only on weekends, and another 35% reported consumption only on special occasions. These results are shown in Figure 12.

Marijuana

More than half (52.7%) the responding students report the use of marijuana during their lifetime, and more than a third (34.7%) reported use of marijuana during the month preceding administration of the survey (see Figures 13 and 14). The latter statistic is approximately 13% higher than the national 30 day prevalence rate of marijuana use among college students of 20.3% reported by Johnston, et al. 1988).

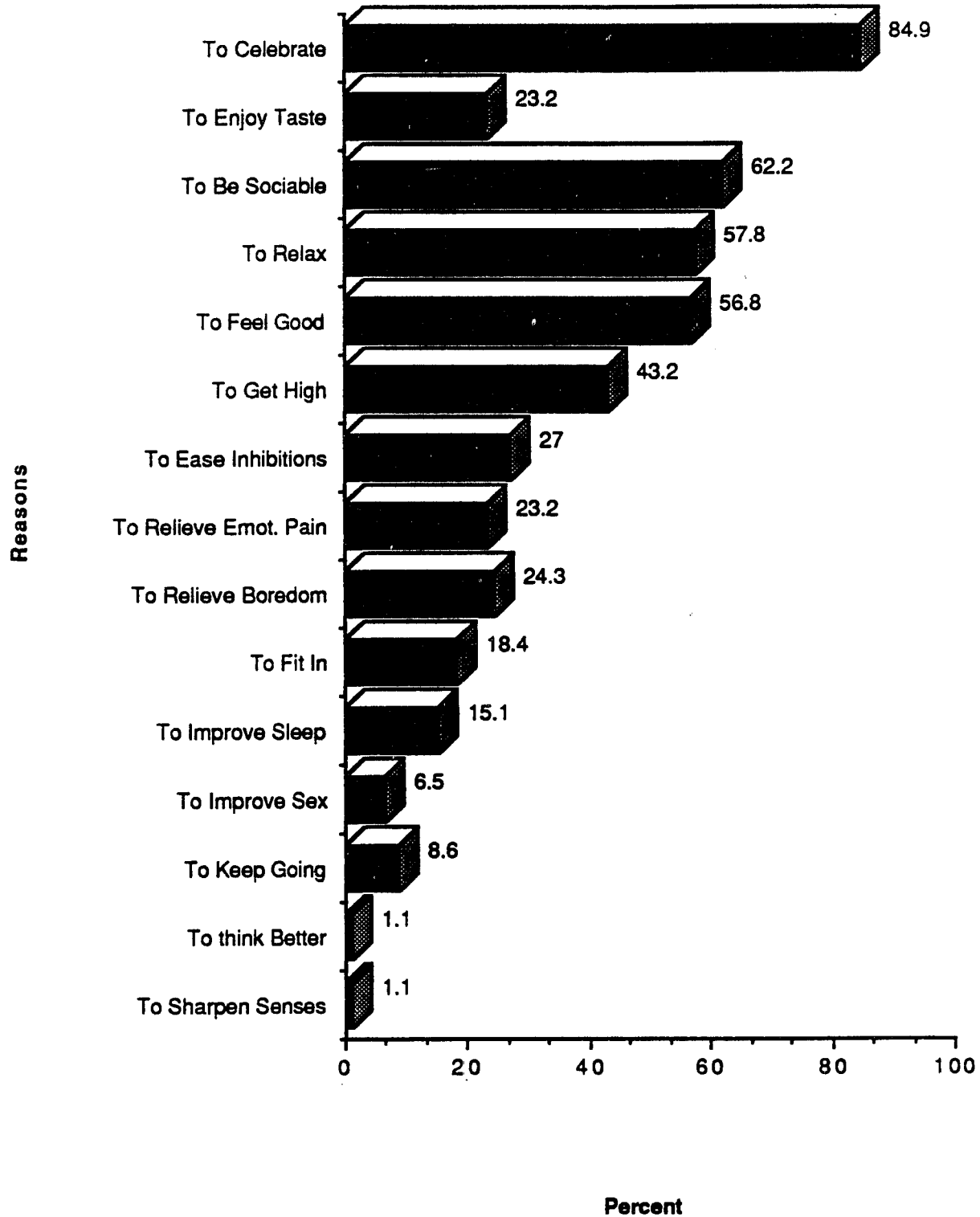
Figure 12. Distribution of reasons for consuming alcohol.

Figure 13. Distribution of drug experience by type of drug used; all drug-experienced respondents.

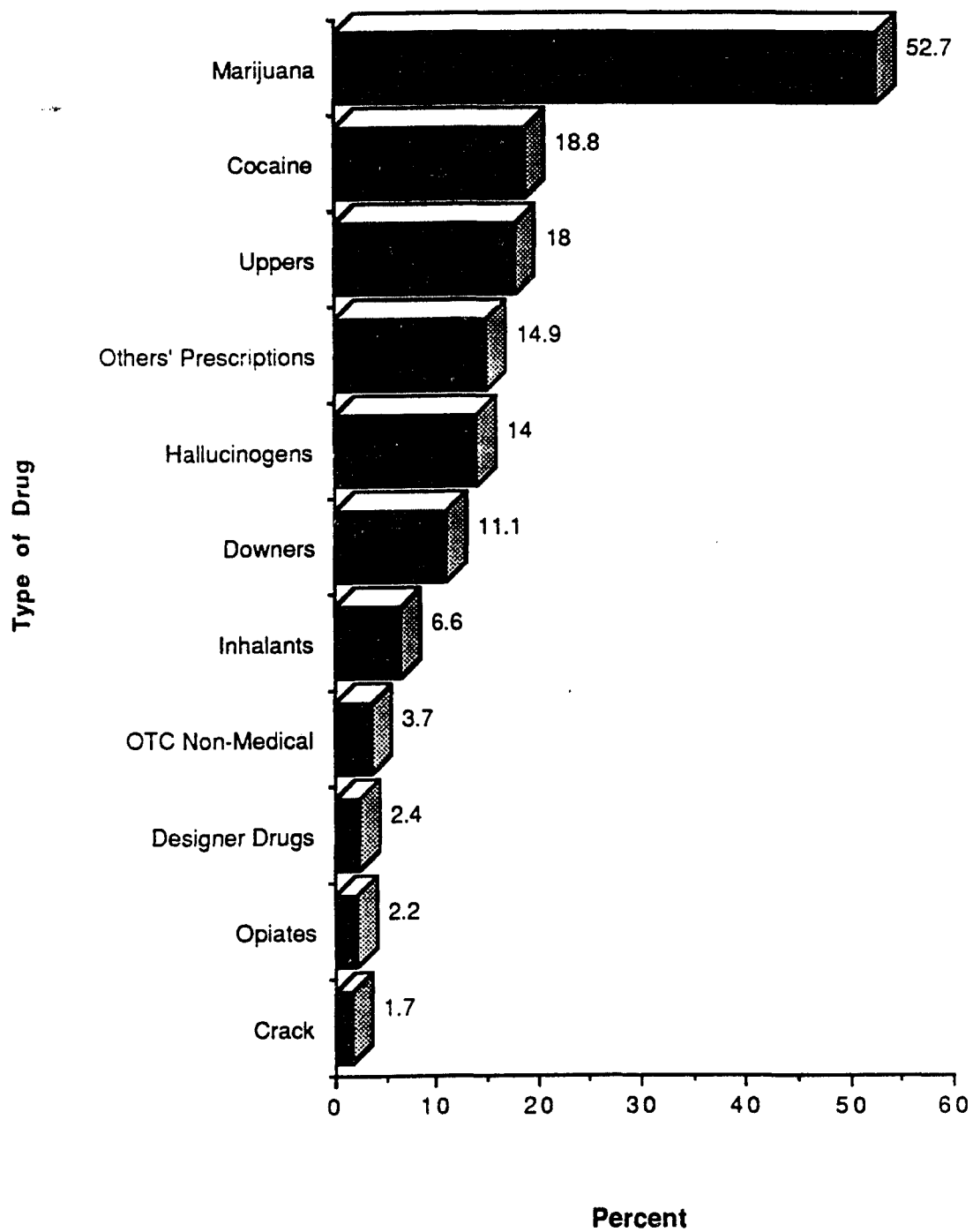
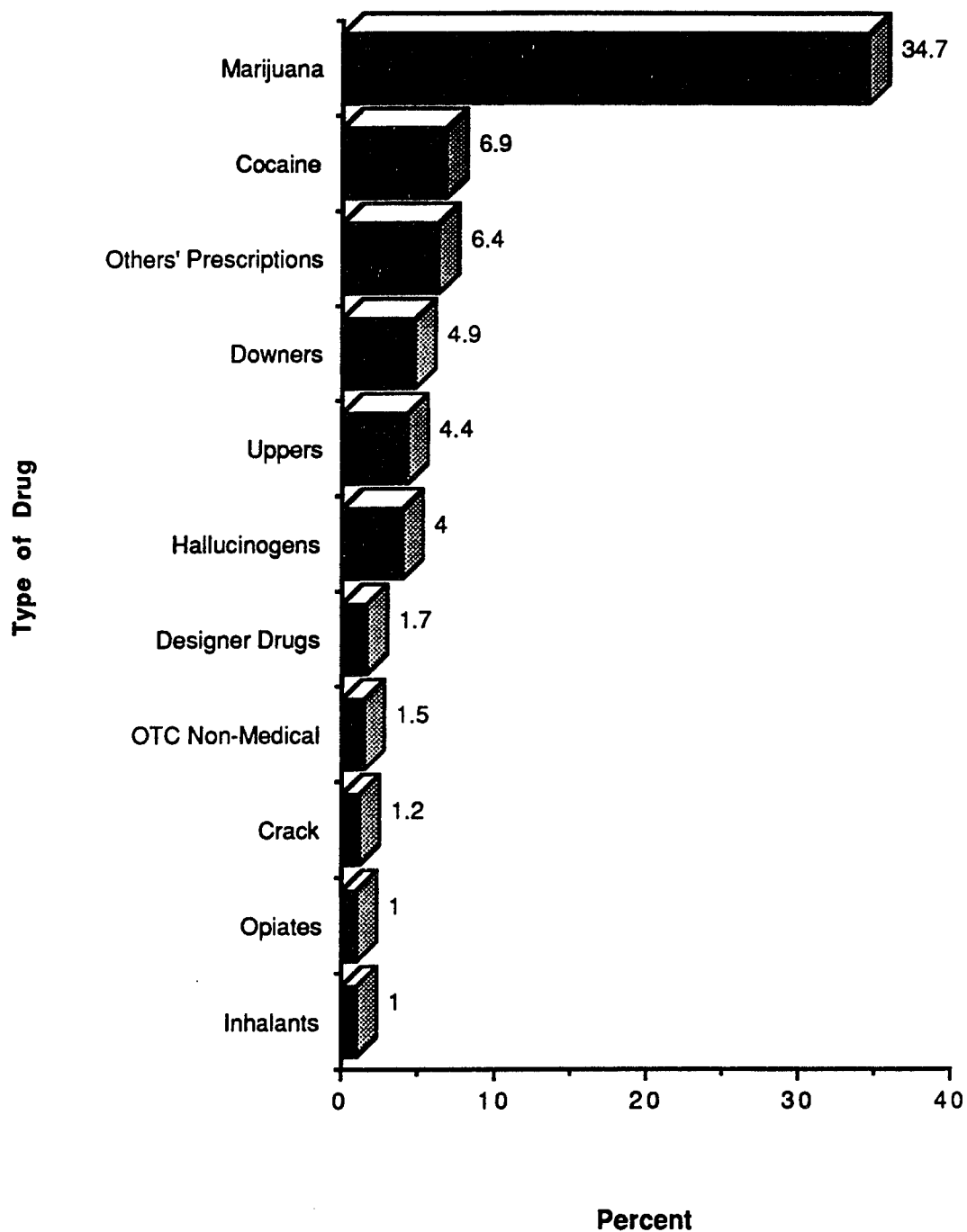


Figure 14. Distribution of use of drugs during the month before the survey, by type of drug; all drug-experienced respondents.



Cocaine.

Among MIRM institutions' respondents, cocaine is the second most frequently experienced illegal drug, with experience rates of 18.8% (see Figure 13). However, 6.9% of MIRM drug-experienced respondents used cocaine during the month preceding administration of the survey. Because the risk of initial cocaine use continues through age 24, a portion of the latter statistic may include first-time users. Nationally, college students are reported to have a thirty day prevalence of use of cocaine of 4.2% (Johnston, et al., 1988). This difference may be partially attributed to the higher socioeconomic status of independent college students and the low representation of students from these institutions who participated in the Johnston, et al. (1988) study.

Others' Prescription Drugs

Nearly 15% of all MIRM respondents have used prescription drugs prescribed for someone else during their life time (see Figure 13). An examination of recent use indicates that approximately 24% of MIRM students who used a prescription drug belonging to someone else did so during the thirty days preceding the survey (see Figure 14). Unfortunately, recent nationwide statistics are not available on college students' use of others' prescription drugs.

Uppers

Figure 13 reports the percentage of MIRM institutions' students who have ever used uppers (amphetamines, speed). The 30-day prevalence of use of uppers is reported to be 4.4%. Again, no recent nationwide data were available on college students use of uppers.

Hallucinogens

Approximately 14% of all MIRM respondents participating in the survey have experimented with hallucinogens (LSD, mushrooms, PCP). Among the experimenters, 4.0% reported using hallucinogens during the thirty days prior to administration of the survey. Nationally LSD use was reported to be 1.4% among college students (Johnston et al. 1988). No information was reported on use of mushrooms or PCP.

Downers

Of the total sample of MIRM respondents, 11.1% have used downers (Xanax, Valium, barbiturates, tranquilizers) at least once in their life-time and 4.9% used downers during the 30 days preceding administration of the survey. The percentage of prescription use could not be determined from the data.

Other Drugs

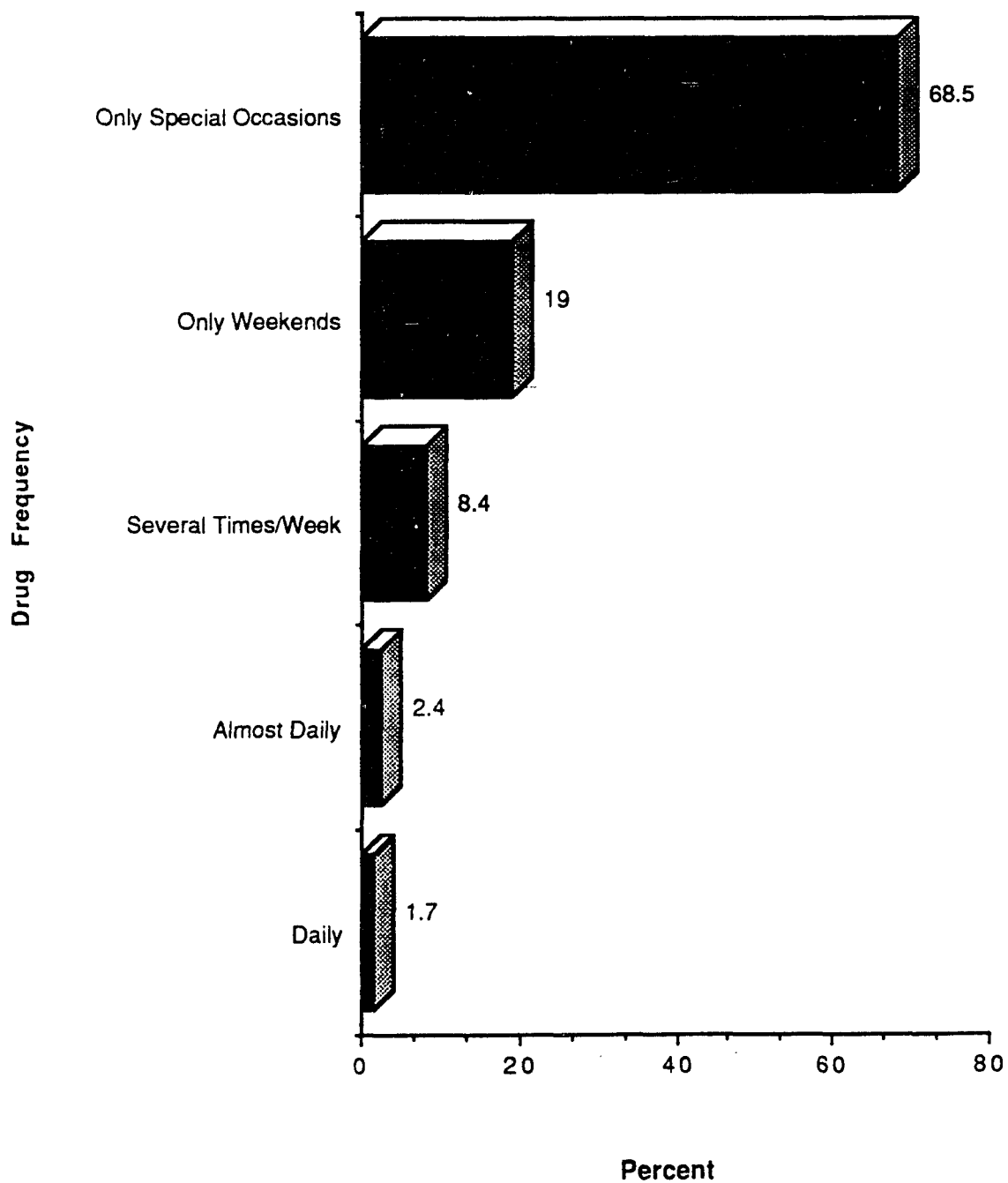
As indicated earlier, several drugs were used by a

very small percentage of the overall MIRM institutions' sample. Specifically, approximately 1.7% of MIRM respondents reported ever using crack, 6.6% reported ever using inhalants, 2.2% reported ever using opiates, 2.4% reported having tried designer drugs, and 3.7% reported ever having used over-the-counter substances with high alcohol content for nonmedical purposes.

Reports of recent (within 30 days of administration of the survey) use of these substances resulted in the following data. Less than 2% of MIRM drug-experienced respondents used over-the-counter substances for non-medical purposes(1.5%) or inhalants (1%). Similarly, approximately 1.7% of all MIRM respondents used designer drugs during this same period. The literature on designer drugs suggest potential growth in the number of students who use these synthetic drugs. Generally, designer drugs are cheaper and frequently more potent than their nonsynthetic counterparts.

More than one in ten (12.5%) of drug-experienced respondents report use of drugs at least several times per week (see Figure 15). Although their frequency of drug use is lower than the corresponding frequency of alcohol use among alcohol-experienced MIRM students (24.8%), drug-experienced MIRM students still engage in regular drug use to a discomfoting degree.

Figure 15. Distribution of frequency of drug use; all drug-experienced respondents.



Common Characteristics of MIRM Drug Users

Approximately 57% of the survey respondents reported that they were unemployed (apart from being students), and of those employed, almost all (92.9%) worked part-time (less than 30 hours per week) rather than full time (see Figure 6). Further, among working students, 46% work exclusively on campus. It is therefore safe to conclude that college, rather than a work setting, is the major influence on drug attitudes and habits for most responding students.

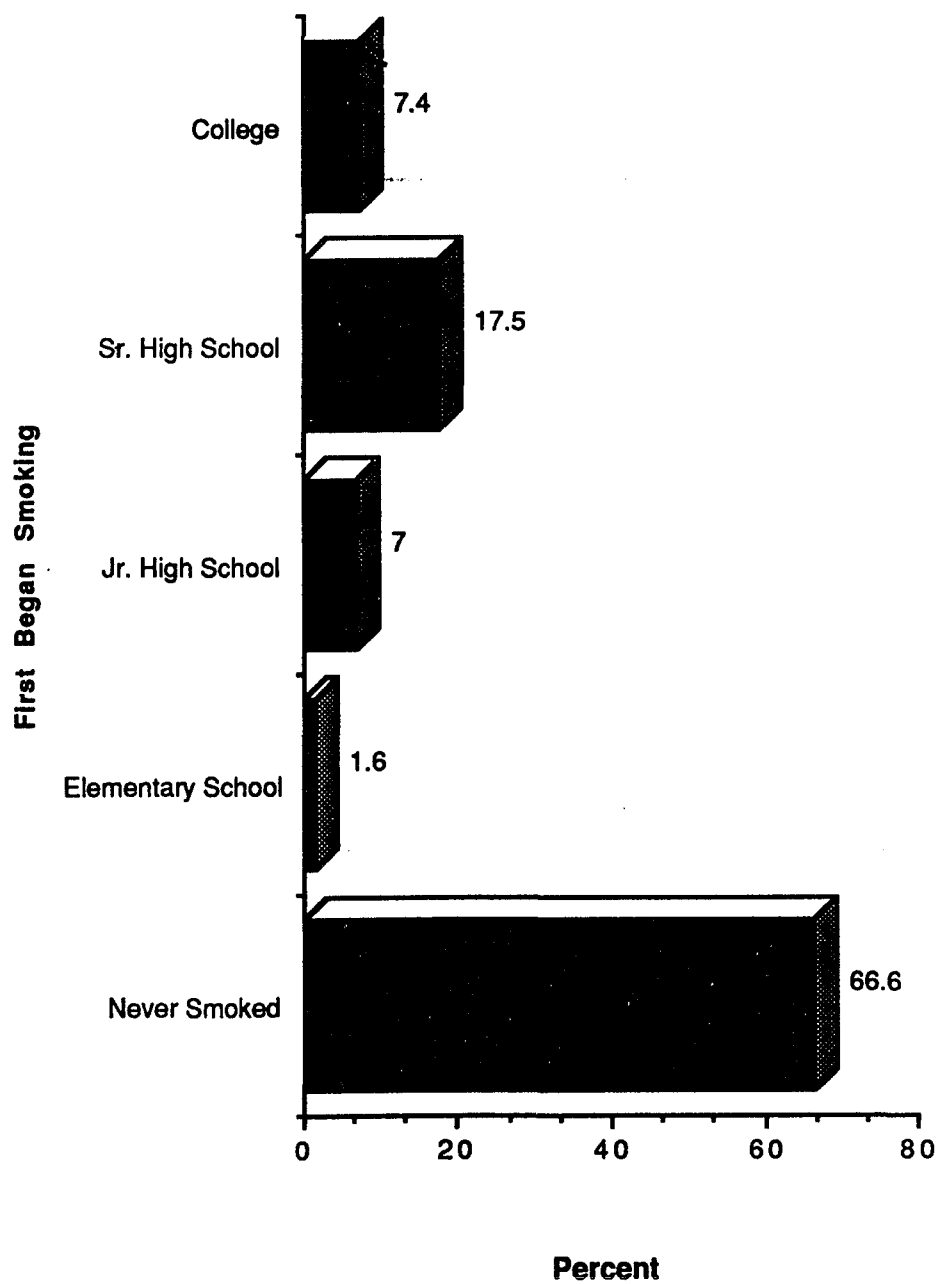
Tobacco Products

Two-thirds of the survey respondents reported that they have never used smoking tobacco (see Figure 16). Of female respondents, 27.1% use smoking tobacco compared to 23.7% of male respondents ($\chi^2 = 2.33, p > .05$). These statistics do not parallel the distinct sex difference in smoking rates reported in previous research (Johnston, et al., 1987; Wechsler & Gottlieb 1979; Roberts, 1980; Page & Gold, 1983; and Glover, et al., 1987).

Less than 10% of all respondents indicated that they have used smokeless tobacco. Users of smokeless tobacco tended to be white (93.1 percent) and male (80.5 percent). Similar results were reported by Glover, et al. (1987).

The living arrangements of students who use tobacco products were diverse. Although the majority of those who

Figure 16. Distribution of first smoking experience; users of tobacco products.



use tobacco products live on-campus (66.6%), 15% live with roommates off-campus, 8.6% live with parents, 3.1% live alone off-campus, and 6.1% have some other living arrangement. These results parallel the living arrangements of the overall sample.

A comparison of the geographic homes of tobacco users suggest that while 54.1% of MIRM tobacco users live in the tobacco belt, relative to their sample size, a higher percentage of students from the northeast (41.4%) use tobacco than from the southeast (32.3%). Almost as many tobacco users meet with a religious group (57.6%) as do not (42.4%) meet with a religious group. Users of tobacco products compose 21.3% of all respondents with a GPA of 3.5-4.0; 32.6% of all respondents with a GPA of 2.4-3.4; and 49.4% of all respondents with a GPA of 1.5-2.4. Only ten of all participating respondents had a GPA less than 1.5.

Alcoholic Beverages

As shown in Figures 17, 18, and 19 males and females differ significantly in their consumption of beer and wine, as well as in the quantity and frequency of drinking these substances ($p < .05$). Of male respondents participating in the survey, 82.8% currently consume alcohol compared to 77.1% of female respondents. These results further substantiate similar conclusions reported

Figure 17. Distribution of use of beer and wine by gender; beer and wine-drinking respondents.

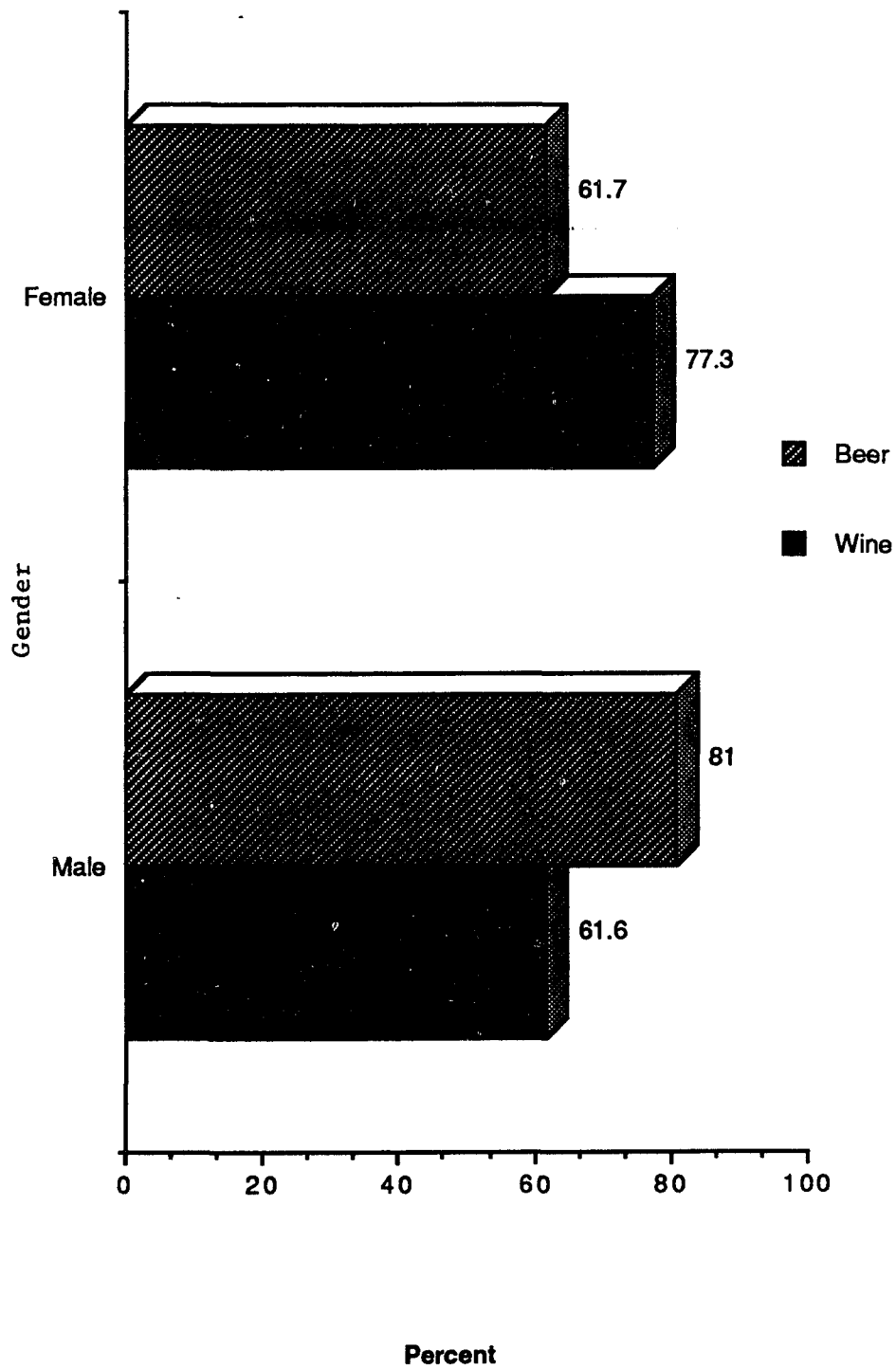


Figure 18. Distribution of quantity of beer consumed by gender; all beer-drinking respondents.

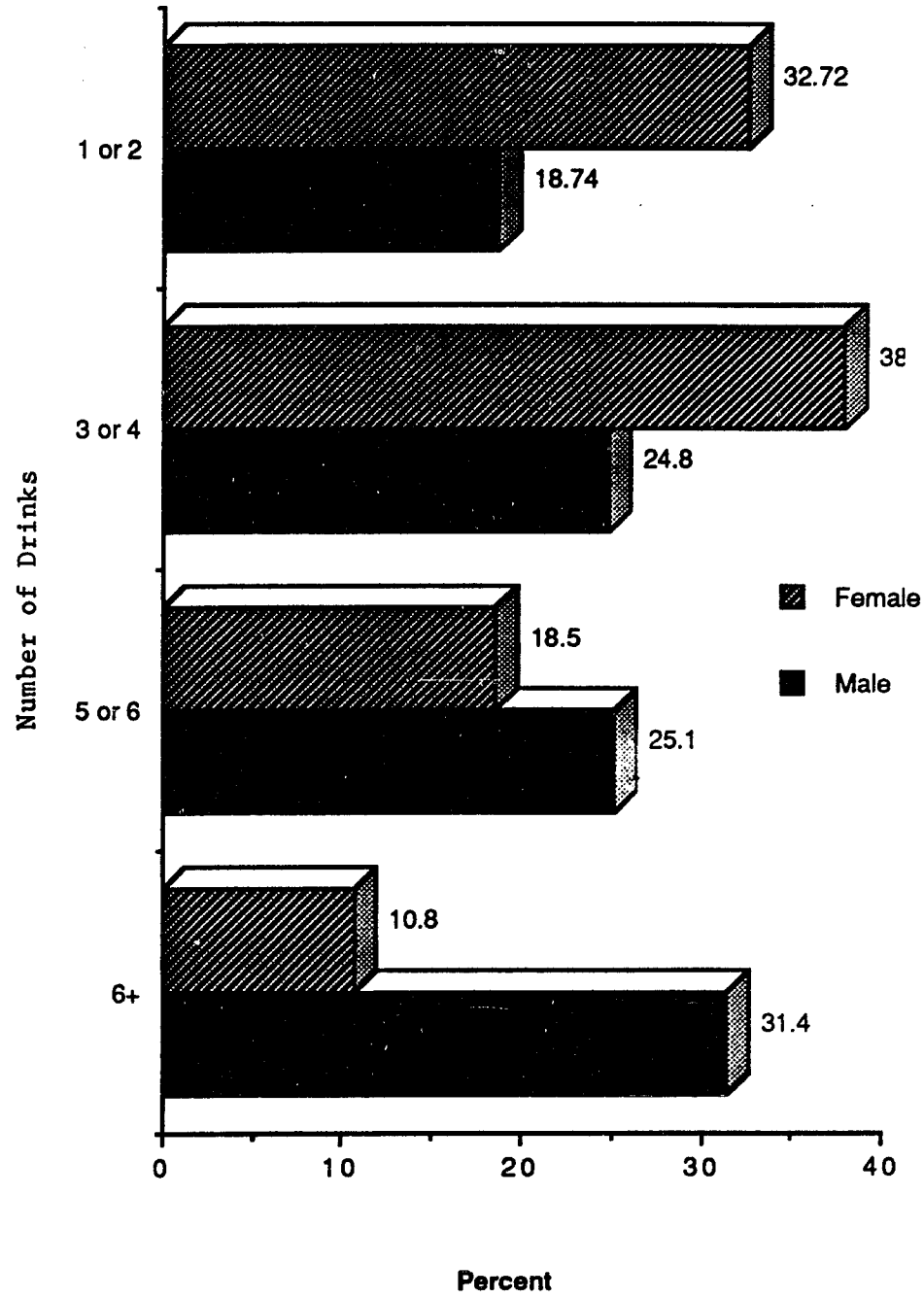
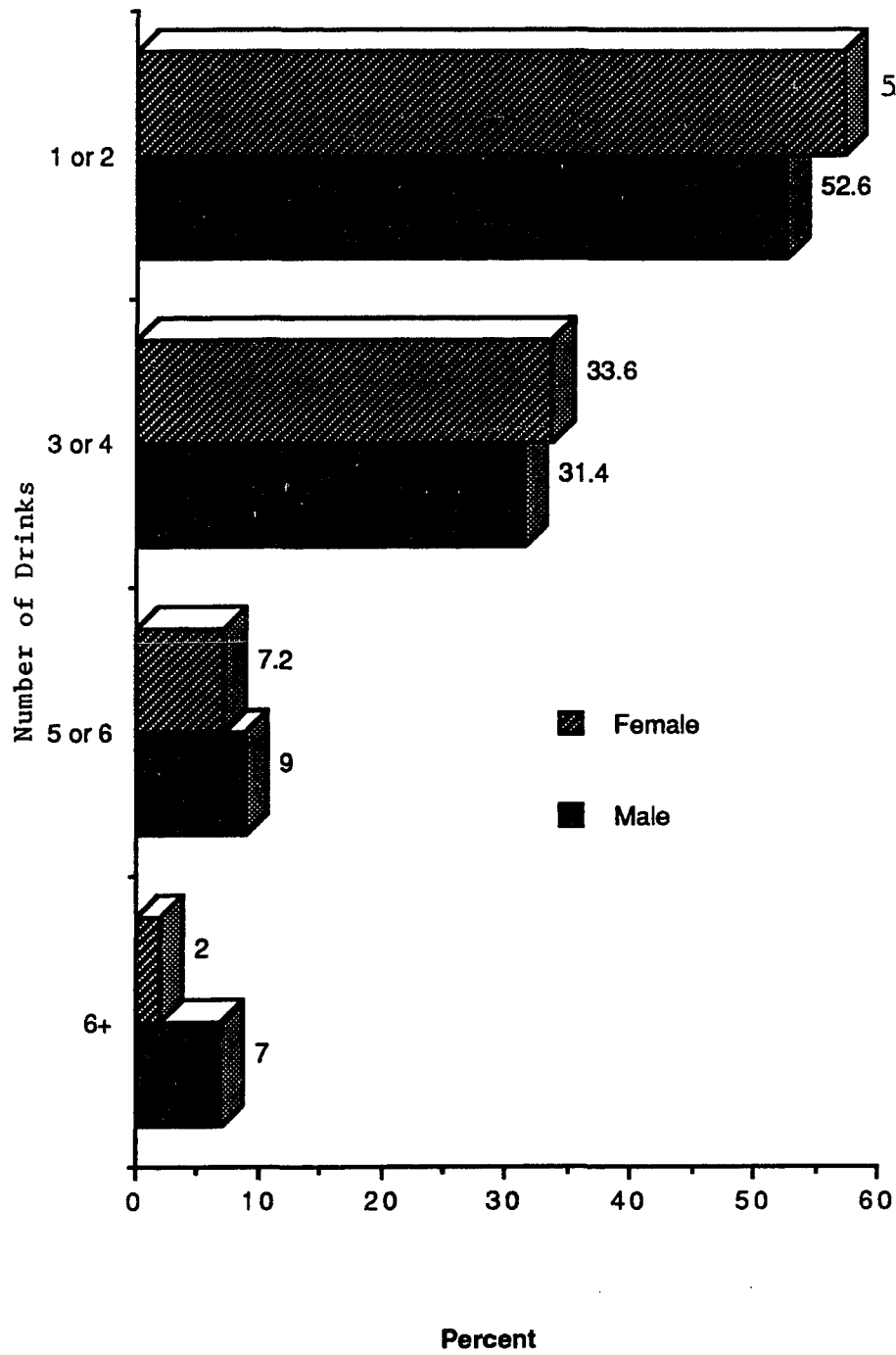


Figure 19. Distribution of quantity of wine consumed, by gender; wine-drinking respondents.



by Engs and Hanson (1985) and Johnston, et al. (1987).

As shown in Figure 20, there is a slight tendency for use of alcohol to increase as MIRM students progress through their undergraduate college years. However, prevalence rates increase only 7.6% from students freshman to senior years in college.

Drinking students comprised a smaller percentage of MIRM institutions' population with a GPA of 3.5-4.0 (61%) than of the population with a GPA of 2.4-3.4 (73.1%), or 1.5-1.4 (76%) ($\chi^2 = 21.59, p < .05$). Of students that meet with a religious group at least occasionally, 78% drink. Of students that generally do not meet with a religious group, 89.3% consume alcohol ($\chi^2 = 33.80, p < .05$). Regionally, 96.7% of the respondents from the northeast, 91% of the respondents from the southeast, 90.4% of the respondents from the midwest, 93.8% of the respondents from the west, and 84% of the respondents from other areas consume alcohol ($\chi^2 = 12.83, p < .05$).

Marijuana

Among MIRM freshman respondents, 24.5% used marijuana during the thirty days prior to the administration of the survey. During this same period, 17.4% of seniors used marijuana (see Figure 21). Generally, these data suggest a gradual reduction in use of marijuana with increasing level of college classification.

Figure 20. Distribution of current alcohol used, by academic classification; all drinking respondents.

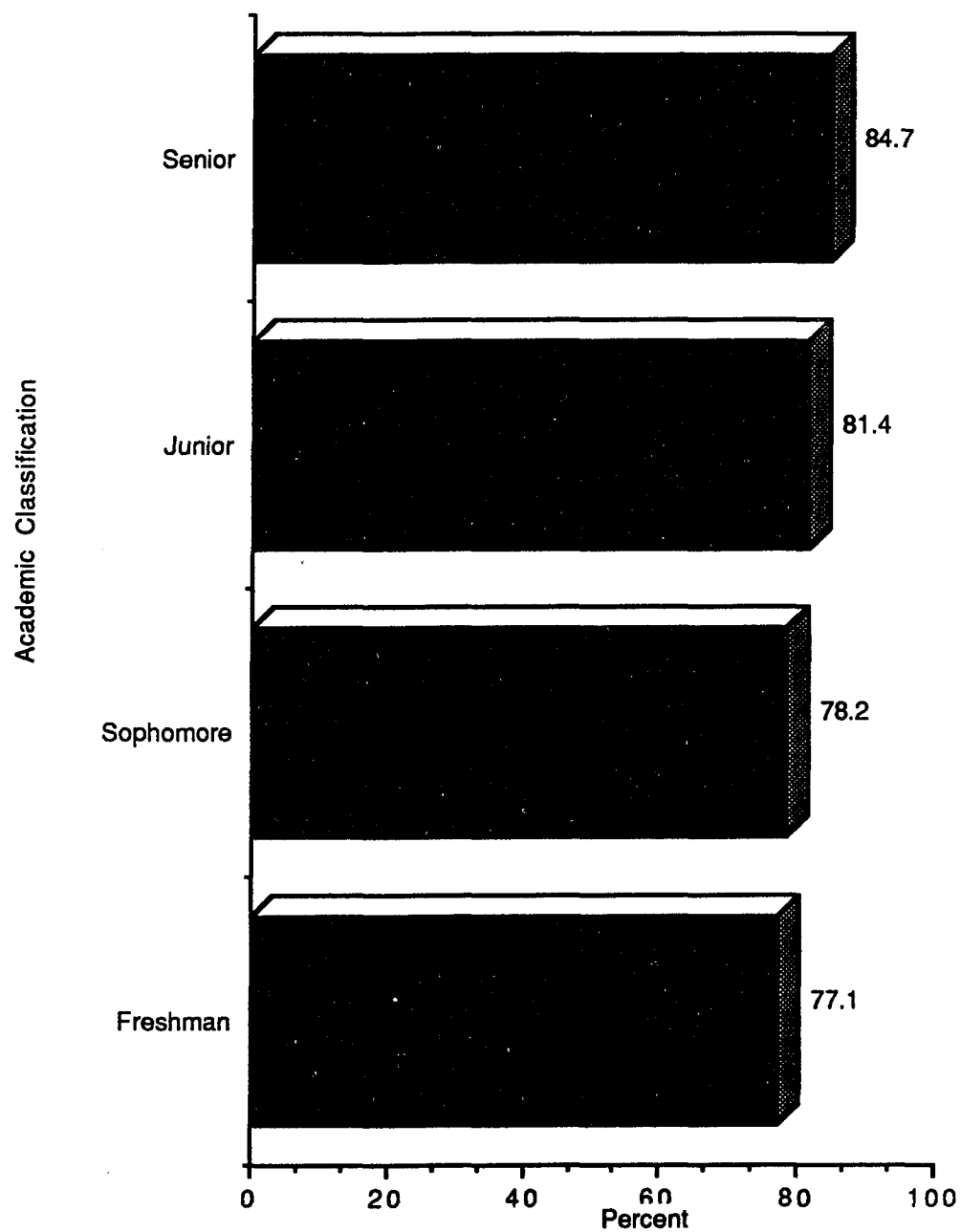
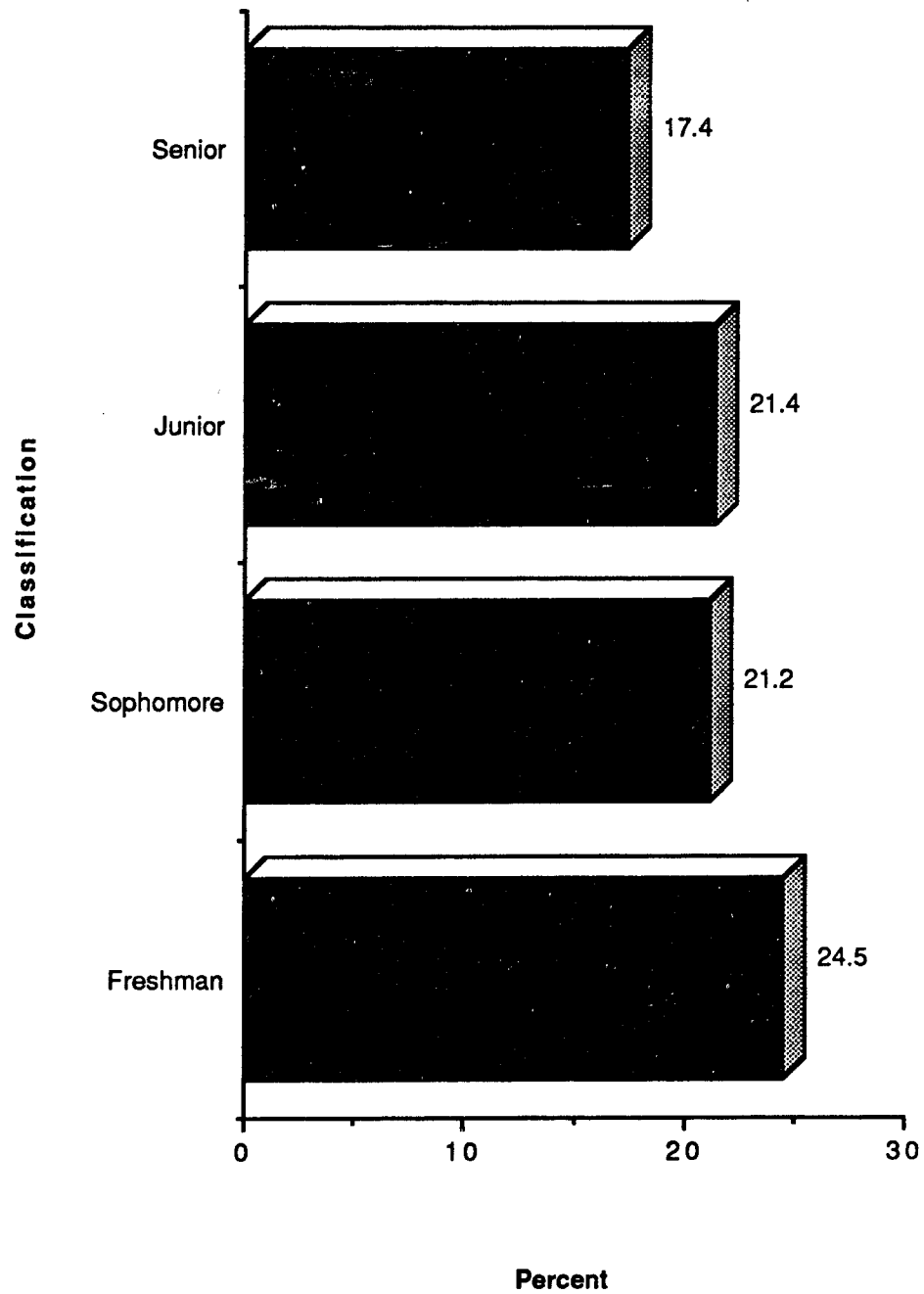


Figure 21. Distribution of current marijuana users, by academic classification.



Both the "ever used" prevalence of marijuana use and the thirty-day prevalence of marijuana use were significantly higher among males than females ($p < .01$). While 60.2% of males have tried marijuana at least once during their life time, only 48% of females have ever tried marijuana. Similarly, 29% of male respondents reported using marijuana during the thirty days prior to the administration of the survey compared to 16.8% of female respondents for the same time span.

Ethnically, 14.6% of MIRM black respondents reported use of marijuana compared to 22.4% of MIRM white (non-Hispanic) respondents. The remaining ethnic/racial groups had sample sizes of twenty or less. Consequently, statistics were not computed for these populations because of the large random error component associated with such small populations.

There is an association between MIRM students' living arrangements and their use of marijuana during the thirty days preceding administration of the survey ($\chi^2 = 18.900$, $p < .05$). The thirty-day prevalence of marijuana use is 24.6% for students living alone off campus, 14.8% for students living with parents, 19.9% for students living on-campus and 31.1% for students living with roommates other than on campus. Among students who have "other arrangements", 21.6% used marijuana during the thirty days prior to administration of the survey. Geographically, a

higher percentage of MIRM students from the Northeastern United States (65.1%) and Western United States (56%) have used marijuana than their cohorts from the Southeastern United States (47.9%), Midwestern United States (48.9%), or other areas (35.6%) ($\chi^2 = 47.85, p < .05$). Because the sample from the west is small, these findings are not trustworthy.

There is also a relationship between MIRM students' use of marijuana and GPA. Marijuana users account for 33.7% of all respondents with a GPA of 3.5-4.0. They account for 52.7% of all respondents with a GPA of 2.5-3.4; and 62.6% of all respondents with a GPA of 1.5-2.4.

Approximately 19.1% of MIRM's employed students used marijuana within 30 days of the survey, while 23.7% of MIRM's unemployed students used marijuana during this same period ($\chi^2 = 5.30, p < .05$). These data concur with studies conducted by Boyer (1987) which suggest that drug use is more prevalent among unemployed college students. Among recent marijuana users, 60.1% reported use predominately off-campus, 21.6% use marijuana primarily on-campus, and 18.3% use marijuana equally on and off campus.

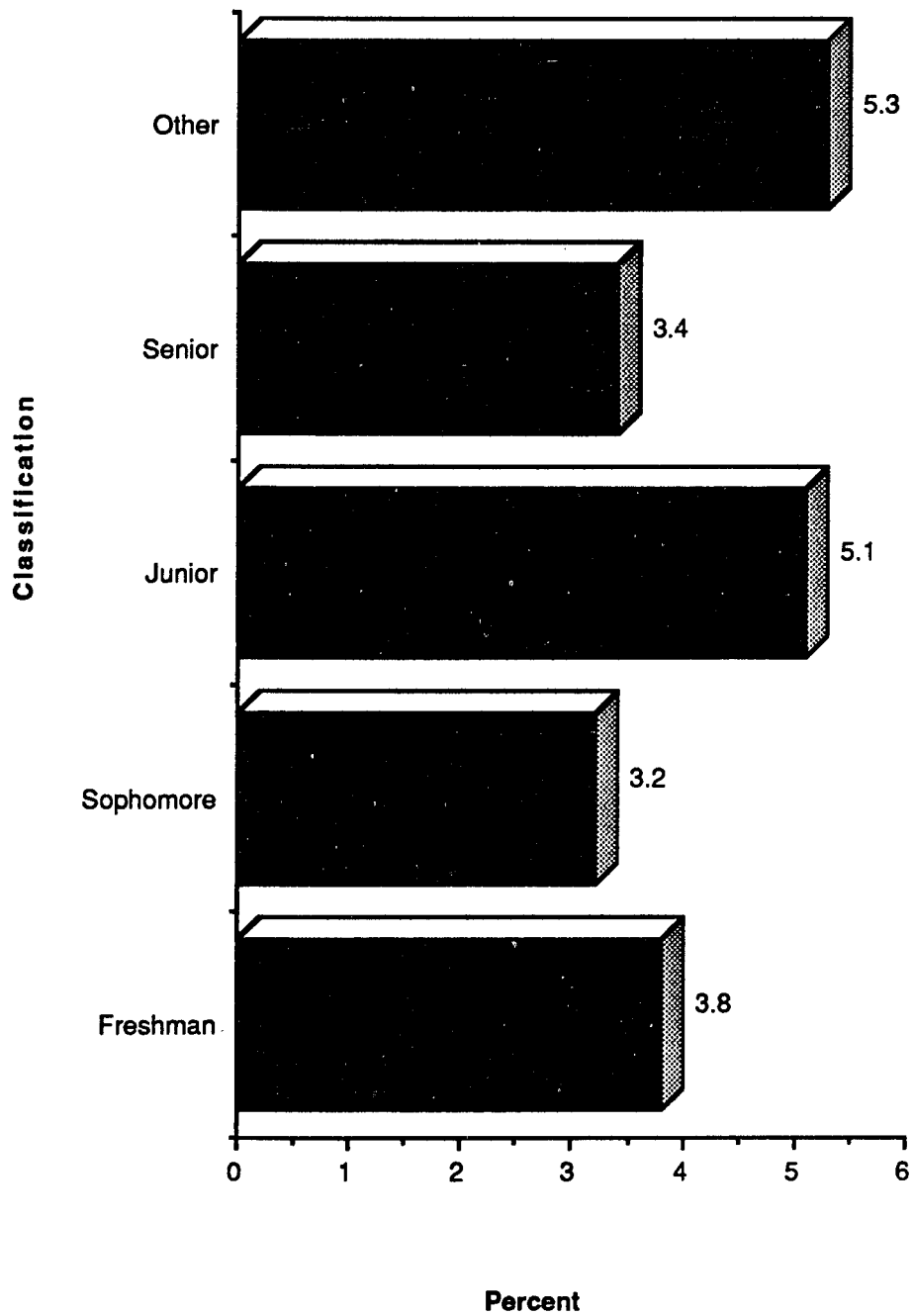
Significantly fewer respondents who meet with a religious group use marijuana (44.7%) than do respondents who generally do not meet with a religious group (69.3%) ($\chi^2 = 93.51, p < .05$).

Cocaine

As shown in Figure 22, there is no clear linear trend which suggest an increase or a decrease in recent cocaine use as MIRM students progress through college. Further, 3.8% of all freshmen currently use cocaine, 3.2% of all sohomores currently use cocaine, 5.1% of all juniors currently use cocaine, 4.3% of all seniors currently use cocaine, and 5.3% of other classifications currently use cocaine. These data conflict with findings reported by Johnston, et al. (1985) which suggest cocaine use increases linearly through age 21. The decrease in cocaine use during the senior year may partially be influenced by the increase in drug screening policies used by employers when evaluating potential employees. However, it is impossible to ascertain from the data in this study whether these usage differences result from secular changes or maturational changes.

Like most illegal substances, current cocaine use is more prominent among males. Among male respondents, 6.5% used cocaine during the 30 days prior to the survey compared to 2.8% of female respondents ($\chi^2 = 13.453$, $p < .05$). Yet, the propensity for use of cocaine is diverse. Ethnically, 3.6% of black respondents, 14.3% of Hispanic respondents, and 4.2% of white (non-Hispanic) respondents recently used cocaine (within 30 days prior to the survey). These data closely correlate with the

Figure 22. Distribution of current cocaine users, by academic classification.



representation of respondents from each racial/ethnic group within the total MIRM sample. Over half (50.7%) of MIRM's current cocaine users reside on campus, and nearly a third (31.9%) live with a roommate off-campus. Subsequently, at least a half of the current cocaine population is readily accessible to campus intervention programs.

A comparison of the employment statistics of the overall survey population and the subpopulation of cocaine users indicates that a greater percentage of current cocaine users are employed (59.4%) than the general population of MIRM respondents (41.8%). Approximately 5.82% of MIRM's employed students use cocaine, compared to 2.96% of MIRM's unemployed students ($\chi^2 = 8.231, p < .05$). Of those employed, 60% are employed off-campus. These results may suggest that at least a portion of the influence to use cocaine may be attributed to noncampus variables. In addition, accrued income from employment may help abate the high cost of cocaine. Further research is needed to define more precisely the influences of off-campus employment on current cocaine use.

Lack of importance of religion has been positively correlated with the use of abusive substances (Hawks, Lisner, & Catalano, 1985; Engs & Hanson, 1983). Importance of religion for these purposes was evaluated by the frequency in which MIRM students meet with a religious

group. Not unexpectedly, only 3.4% of MIRM's respondents who meet with a religious group at least "occasionally" currently use cocaine, compared to 5.7% of students who generally do not meet with a religious group ($\chi^2 = 5.1528$, $p < .05$).

Of MIRM institutions' respondents who reported a 3.5 - 4.0 GPA, 2.3% were current cocaine users, increasing to 5.9% for those students who had GPA's of 1.5-2.4 ($\chi^2 = 7.05$, $p > .05$) However, because the sample of current cocaine users was very small ($N = 69$), care should be used when interpreting these data. A difference was reported in the percentage of current cocaine users by the region of the country in which they lived for most of the five years prior to entering their current college. While 30% more of MIRM institutions' students live in the southeast as in the northeast, only 16% more current cocaine users live in the southeast compared to the northeast. These data suggest that a higher percentage of students who live in the Northeastern United States and attend a MIRM institution currently use cocaine than students who live in the Southeastern United States and attend a MIRM institution. The greatest percentage of current cocaine use from any single region was from the Western United States. Although 3.4% of MIRM students who lived in the Southeast were current cocaine users, 4.8% of students who live in the Northeast, 6.4% of students who live in the

Midwest, 9.4% of students who live in the West, and 5.5% of students who live in "other regions" were current cocaine users ($\chi^2 = 6.308, p > .05$). Again caution should be exercised in interpreting the results from the West and Midwest due to the small sample sizes representing the respective regions.

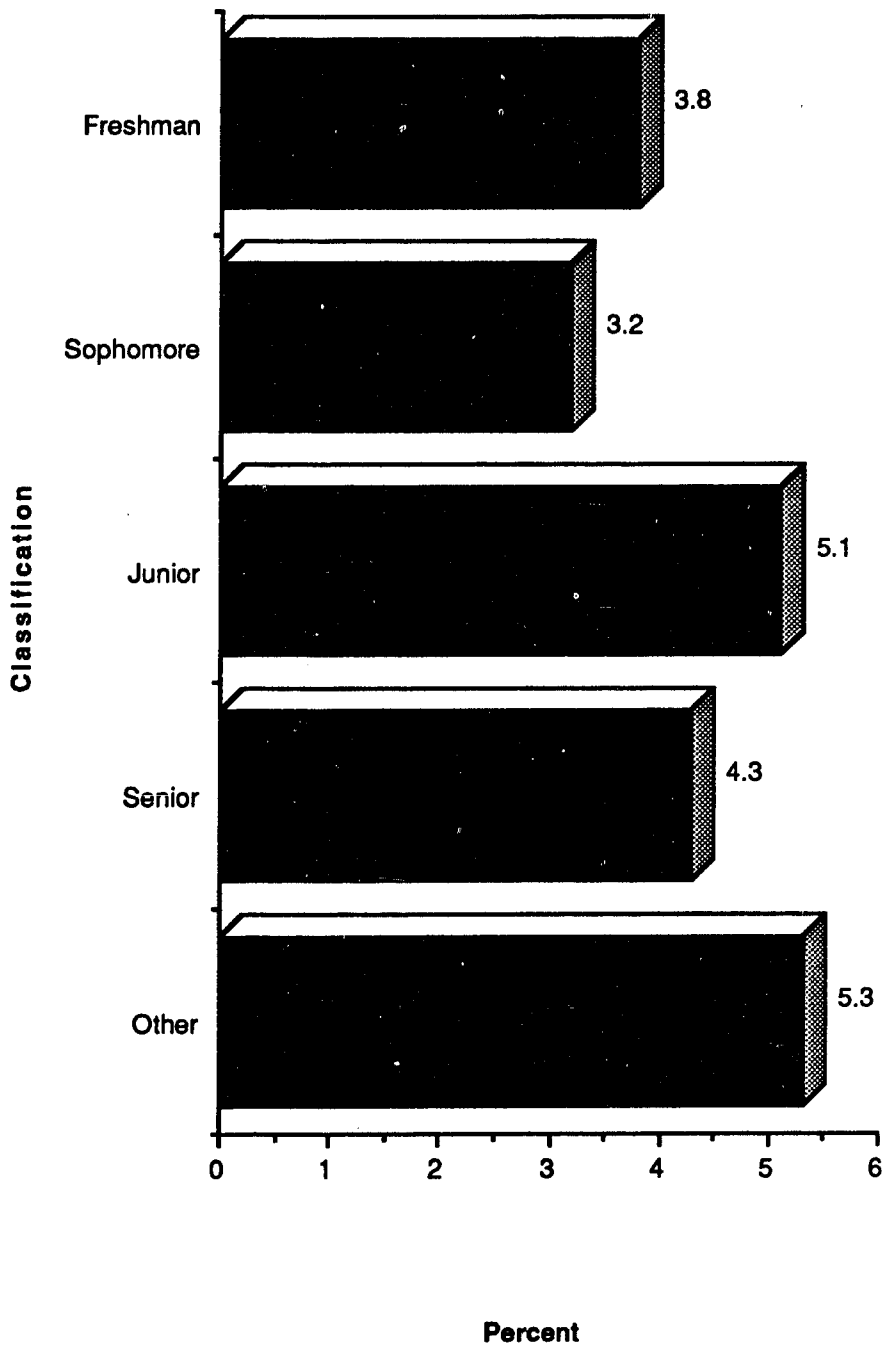
Use of Others Prescription Drugs

Of black students completing the survey, 8.9% have used another's prescription, compared to 15.8% of white (non-Hispanic) respondents. Figure 23 reports the prevalence of use of others' prescription drugs.

MIRM students who have used prescription drugs prescribed for someone else compose 2.6% of all MIRM respondents with a grade-point average of 3.5-4.0; 3.6% of all respondents with a grade-point average of 2.5-3.4; 5% of all respondents with a grade-point average of 1.5-2.4; and 11.1% of all respondents with a grade-point average of 0.5-1.4 ($\chi^2 = .3.95, p > .05$). A sample of less than 10 of all MIRM respondents had a grade-point average between 0.5 and 1.4, thereby casting considerable doubt about the representativeness of the statistics related to this particular subsample of the population.

Among MIRM respondents, more males than females reported using someone else's prescription drugs. Approximately 15.5% of all MIRM male respondents reported

Figure 23. Distribution of current prescription users, by academic classification.



the use of others prescription drugs compared to 14.4% of all MIRM responding females ($\chi^2 = .3708$ $p > .05$). Because more females than males seek and obtain medical care, males respondents might resort to using others prescriptions because they do not have ready legal access to these drugs as might female abusers of prescription drugs.

Approximately 13.6% of MIRM students who meet with a religious group at least occasionally report use of prescription drugs intended for another individual; 18% of students who generally do not meet with a religious group report use of prescription drugs intended for another individual ($\chi^2 = 5.85$, $p < .05$). As reported in the literature review, importance of religion is a deterrent to drug use.

The greatest regional representation of students who use others' prescriptions is the Western United States with 12.5% of MIRM students from this area reporting use of others' prescriptions. Less than 4% of students from any other region report current use of someone else's prescription ($\chi^2 = 7.76$, $p > .05$). However, because the sample of students representing the west, these results should be used cautiously.

Uppers.

Less than 3% of the total group of MIRM respondents

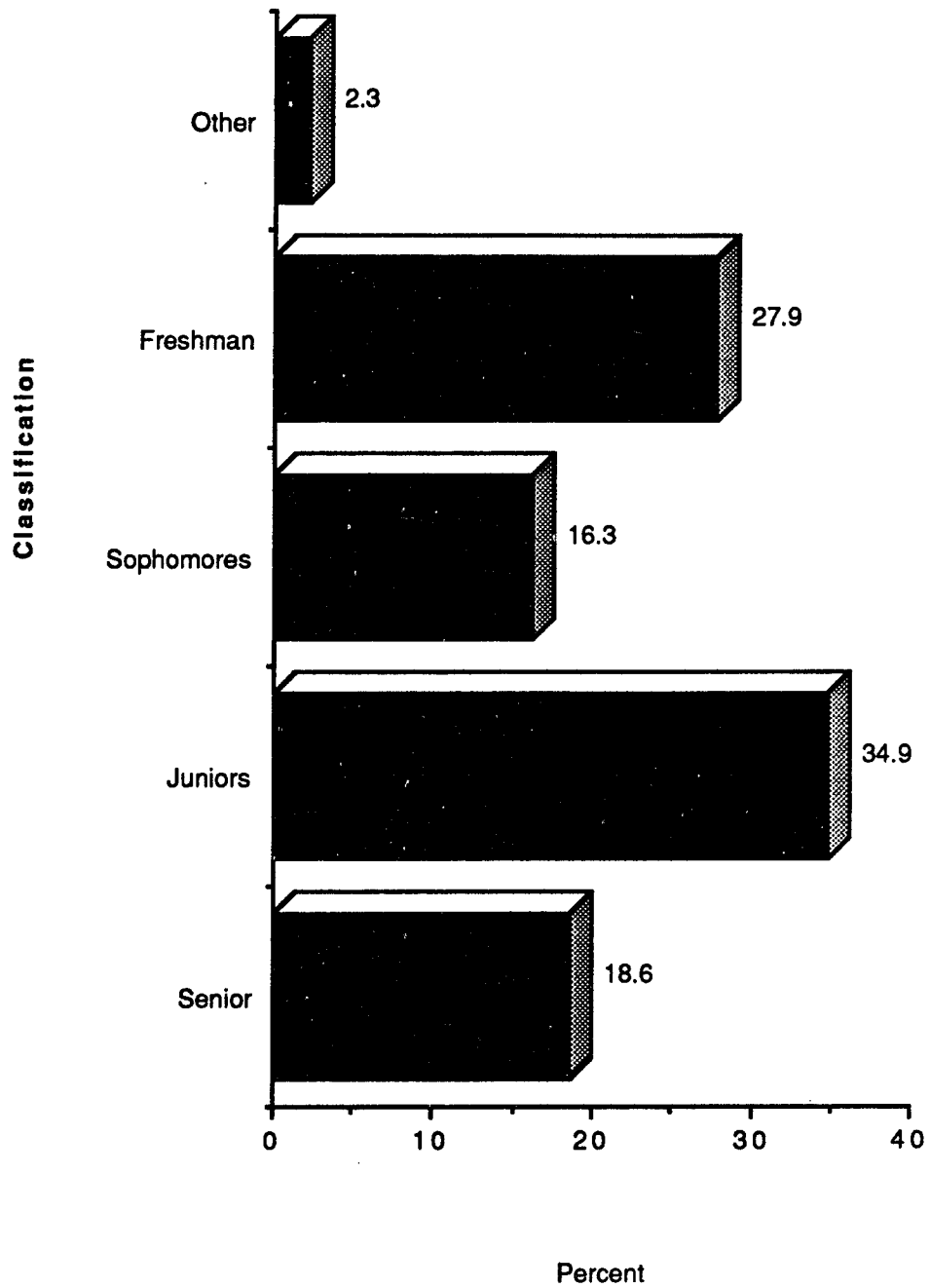
completing the survey currently use uppers (within 30 days of the administration of the survey). The population of recent users of uppers is composed primarily of juniors (34.9%) and freshmen (27.9%) (see Figure 24). More than 3.8% of all responding males and 1.8% of all responding females reported using uppers within 30 days of administration of the survey. The gender differences reported from these statistics are consistent with those reported in the literature. Ethnically, approximately 2.8% of MIRM white (non-Hispanic) respondents reported recent use of uppers compared to less than 1% of MIRM black respondents.

Of MIRM students who recently used uppers, over half (56.8%) do not meet with a religious group. These data support those reported in the literature.

Further, among MIRM respondents with a grade point average (GPA) of 3.5-4.0, 1.0% reported recent use of uppers. Recent users of uppers comprised 2.2% of MIRM respondents with a GPA of 2.5-3.4; 3.9% of MIRM respondents with a GPA of MIRM respondents with a GPA of 1.5-2.4; and 11% of MIRM respondents with a GPA of 0.5-1.4. Consequently, the lower the GPA the higher the percentage of users of uppers.

Approximately 58.1% of MIRM recent users of uppers were not employed. In addition, 53.5% lived on campus, 7.0% resided alone off-campus, 4.7% lived with parents,

Figure 24. Distribution of current users of uppers, by academic classification.



25.6% resided off-campus with a roommate, and 9.3% lived in some other arrangement other than those described above. Although a majority of recent users of uppers live on-campus, 57.1% of MIRM institutions' respondents who recently used uppers mostly partook of the substances off-campus.

While over half of MIRM users of uppers are readily available to participate in campus drug programs by virtue of their campus abodes, nearly 46% will require additional incentive to remain on campus and participate in campus drug programs.

Hallucinogens

The rate of recent (within the 30 days preceding administration of the survey) use of hallucinogens among all MIRM male respondents was 4.3%. Comparatively, 1.3% of MIRM female respondents used hallucinogens during this same time period. These data support the literature reporting that drug use is more prevalent among college males than college females.

Ethnically, less than 1% of MIRM black respondents reported recent use of hallucinogens. In comparison, 2.7% of white (non-Hispanic) respondents reported recent use of hallucinogens. No other ethnic/racial group reported use of hallucinogens during the thirty days prior to the survey administration.

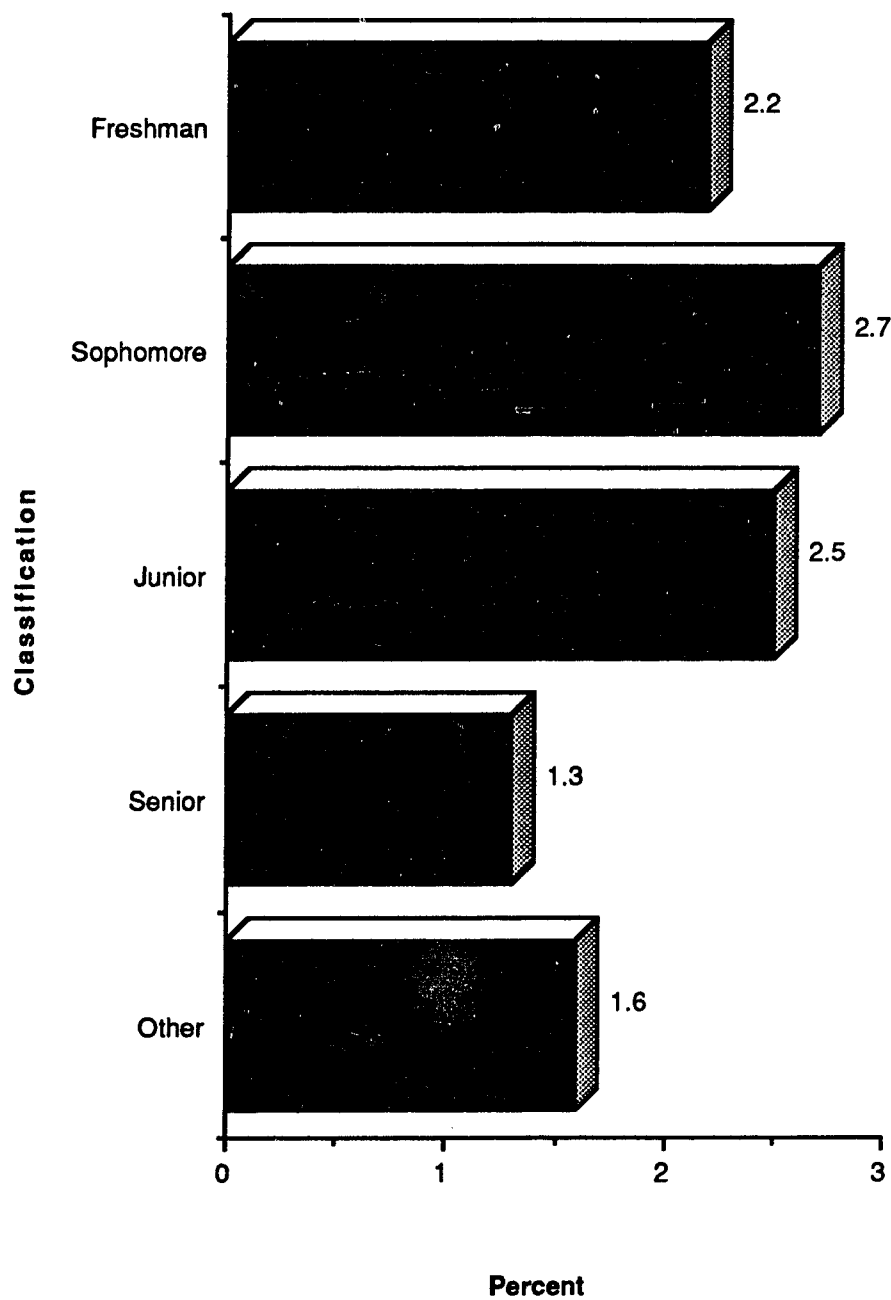
Use of hallucinogens seems to wax and wane from students' first year in college through their last year of undergraduate schooling. However, as is the case with other drugs, there is a significant decrease in use of hallucinogens among seniors (see Figure 25).

Generally, MIRM institutions' students who reported recent use of hallucinogens also as a rule do not meet with religious groups (32.5%). More specifically, 23.7% never meet with religious groups. Among MIRM students with a grade point average (GPA) of 3.5 - 4.0, 1.3% reported recent use of hallucinogens. Recent users of hallucinogens comprised 2.1% of MIRM respondents with a GPA of 2.5 - 3.4; 3.6% of MIRM respondents with a GPA of 1.5 - 2.4; 11% of MIRM respondents with a GPA of 0.5-1.4. These data suggests an inverse relationship between the percentage of students who use hallucinogens and grade point average.

Of recent (within thirty days of the administration of the survey) users of hallucinogens, 47.5% were unemployed compared to 52.5% employed. It would seem, therefore, that hallucinogen users do not fit Boyer's (1987) finding that drug use is greater among unemployed college students. However, it is worth noting that the sample size of recent hallucinogen users was very small (N = 40).

Approximately 6.3% of MIRM students who reside in the Western United States report recent use of hallucinogens,

Figure 25. Distribution of current users of hallucinogens, by academic classification.



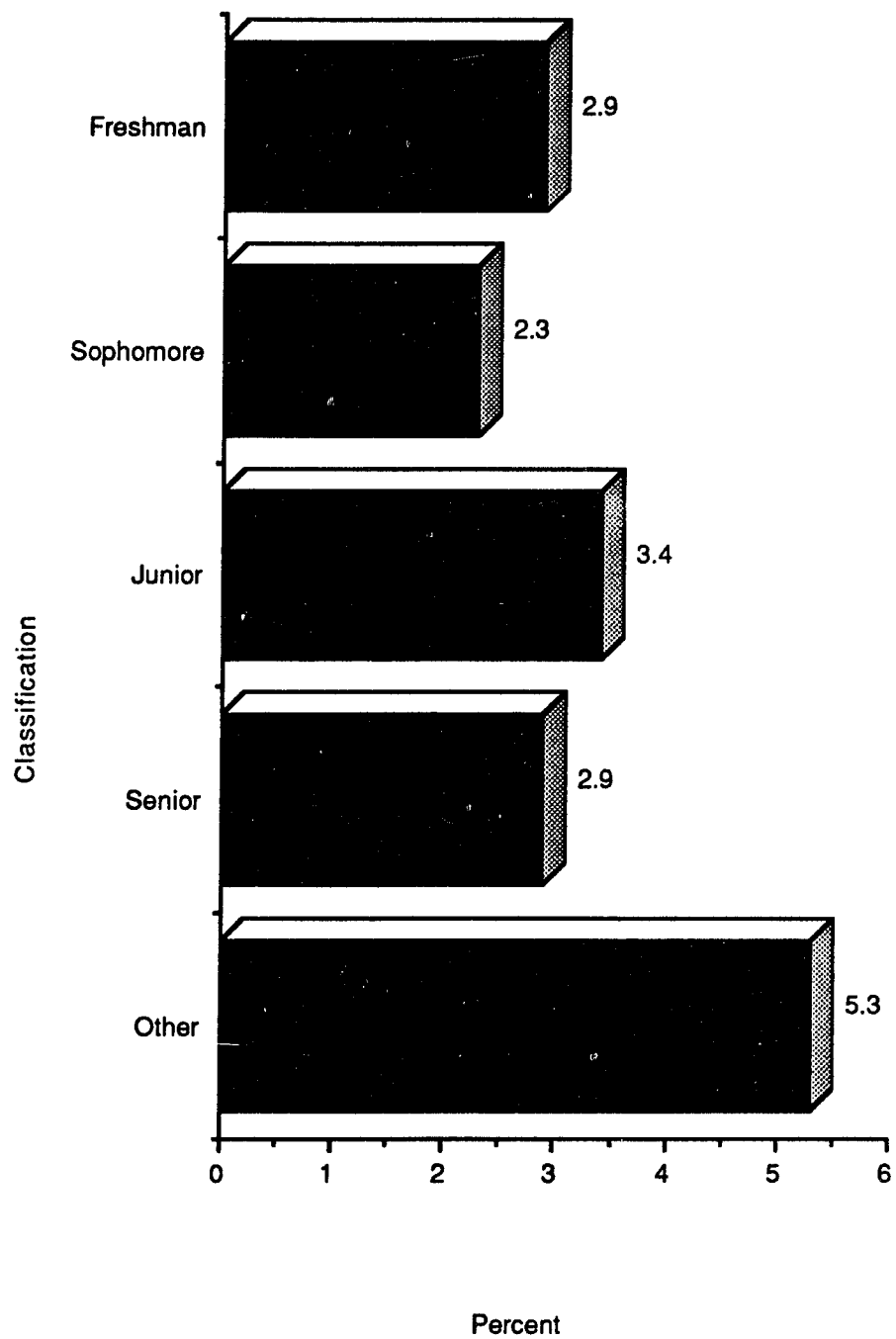
3.7% of MIRM respondents who reside in the Northeastern United States report recent use of hallucinogens, and 2.1% of MIRM respondents who reside in the Midwestern United States report use of hallucinogens. Only 1.7% of MIRM respondents who live in the Southeastern United States, and 1.4% of respondents who live in other areas report recent use of hallucinogens.

Downers

Personal demographic characteristics of MIRM students who recently (within 30 days of the administration of the survey) used downers suggest that, unlike most drug use patterns, more females than males used downers. In addition, freshmen had a 30 day prevalence of use of 2.9%, sophomores had a 30 day prevalence of 2.3%, juniors had a 30 day prevalence of 3.4 percent, and seniors had a 30 day prevalence of 2.9 percent. Use of downers decreased from students' freshman to sophomore year, increased from students' sophomore to junior year then decreased again from students' junior to senior year (see Figure 26).

Less than 1% of MIRM black respondents reported recent use of downers, while 3.2% of MIRM white (non-Hispanic) respondents reported use of downers. Since only 14 Hispanic, 10 American Indian, and 20 Asian Pacific students were included in the total MIRM sample, and since the validity of results for such a small group out of the

Figure 26. Distribution of current users of downers, by academic classification.



total sample would be questionable, no racial ethnic statistics were calculated for these populations. The employment status of MIRM students who reported recent use of downers included 59.2% employed and 40.8% unemployed.

Almost equally as many MIRM students who live in the Northeastern United States (2.7%) report use of downers as their colleagues who live in the Southeastern United States (2.8%). However, 4.2% of students who live in the Northwestern United States report use of downers, and 3.1% of students who live in the Western United States report the use of downers.

An analysis of the grade point average of students who report recent use of downers suggest that 1.3% of students with a GPA of 3.5-4.0 recently used downers. Similarly 2.6% of students with a GPA of 2.5-3.4, and 4.5% of students with a GPA of 1.5-2.4 recently used downers. No student with a GPA below 1.5 reported use of downers.

Overall, most recent users of downers reside on campus (57.1% live on campus; 18.4% live with roommates; 4.1% live alone off-campus; 4.1% live with parents; and 16.3% have living arrangements other than those described). Yet, 64.9% of MIRM students who use downers report they use drugs most frequently off-campus. As indicated earlier, use of drugs off-campus does not negate the school's liability for their students. Further, at least 48.9% of those using downers used marijuana, 42.6% used

prescription drugs intended for another individual, 29.2% used cocaine during the same thirty days prior to administration of the survey. In addition, 93.9% report they currently consume alcohol and 53.1% describe themselves as smokers of tobacco. These statistics are not surprising since downers may be used to assuage the effects of other drugs. However, they do suggest that MIRM institutions' students who recently used downers are involved with drugs beyond the experimental stage.

Other Drugs

MIRM males were more likely to use over-the-counter products for nonmedical purposes than were females (1.3% and 0.6%, respectively). However, the sample of students who used over-the-counter products with high alcohol content was very small compared to the overall group, therefore no statistics will be computed due to the questionability of their validity. This section is included to describe the frequency of use reported by MIRM respondents who have experimented with these substances.

Drug History

This section discusses MIRM students initial use of specific drugs as well as any family history of drug problems.

Tobacco Products

Approximately half of MIRM smokers (52.4%) initiated use of tobacco during their high school years, and about a fourth (22%) began during their college experience (see Figure 27). Generally users of smokeless tobacco began using tobacco products at an earlier age than did users of smoking tobacco. Approximately 14% of MIRM institutions' students who use smokeless tobacco first initiated use while in elementary school, while only 12% initiated use while in college (see Figure 28).

Alcoholic Beverages

Among drinking respondents, approximately a fourth (24.1%) began using alcohol in junior high school, and about another three-fifths began using alcohol in senior high school (57%) (See Figure 29).

More than a third (35.6%) of all MIRM students reported that at least one member of their family had experienced difficulty of some sort related to alcohol consumption.

Marijuana

A closer examination of the history of marijuana use among MIRM institutions' students suggest that MIRM students first experimented with marijuana as early as elementary school and as late as college. Of respondents

Figure 27. Distribution of initial smoking experience; all smoking respondents.

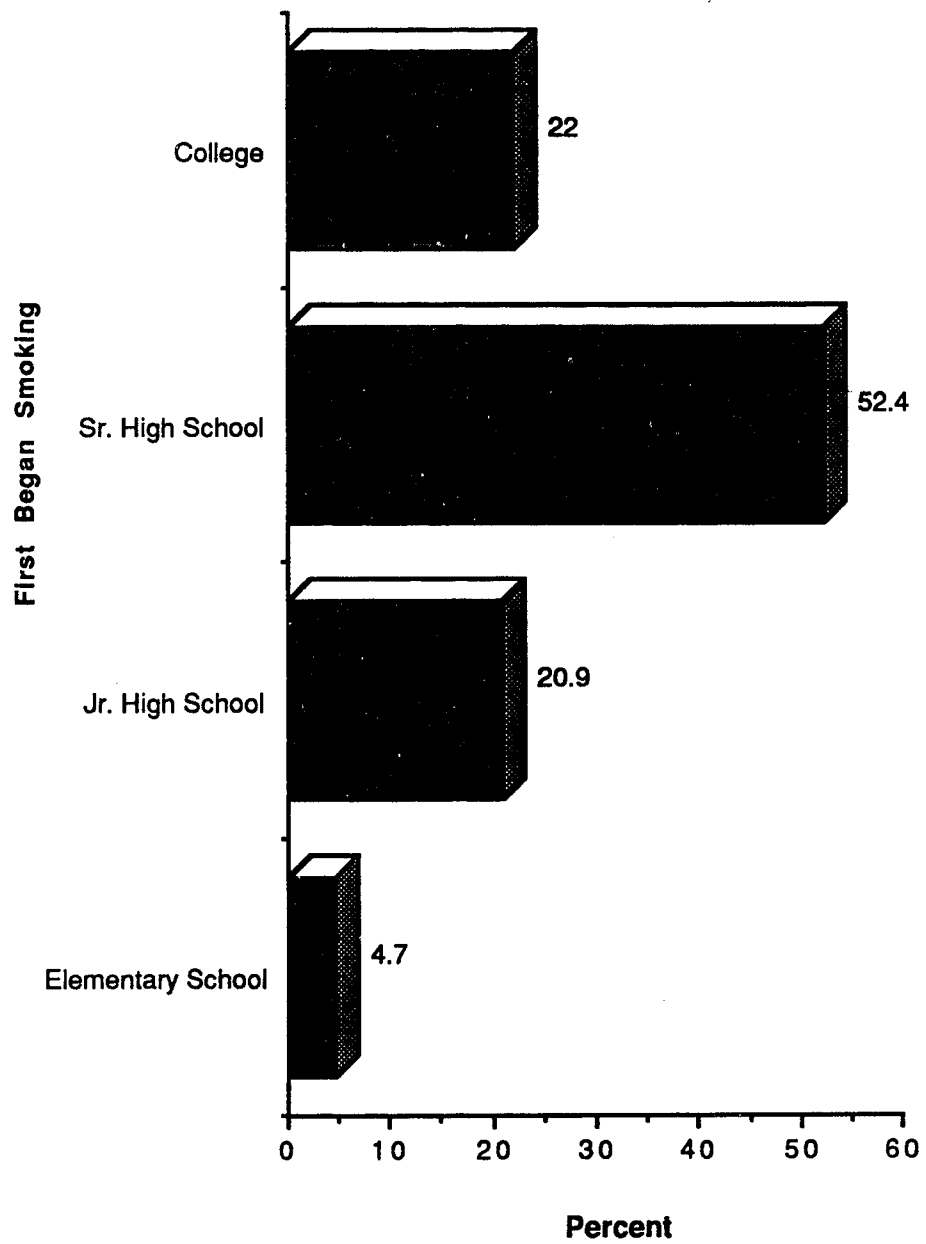


Figure 28. Distribution of initial smokeless experience; users of smokeless tobacco.

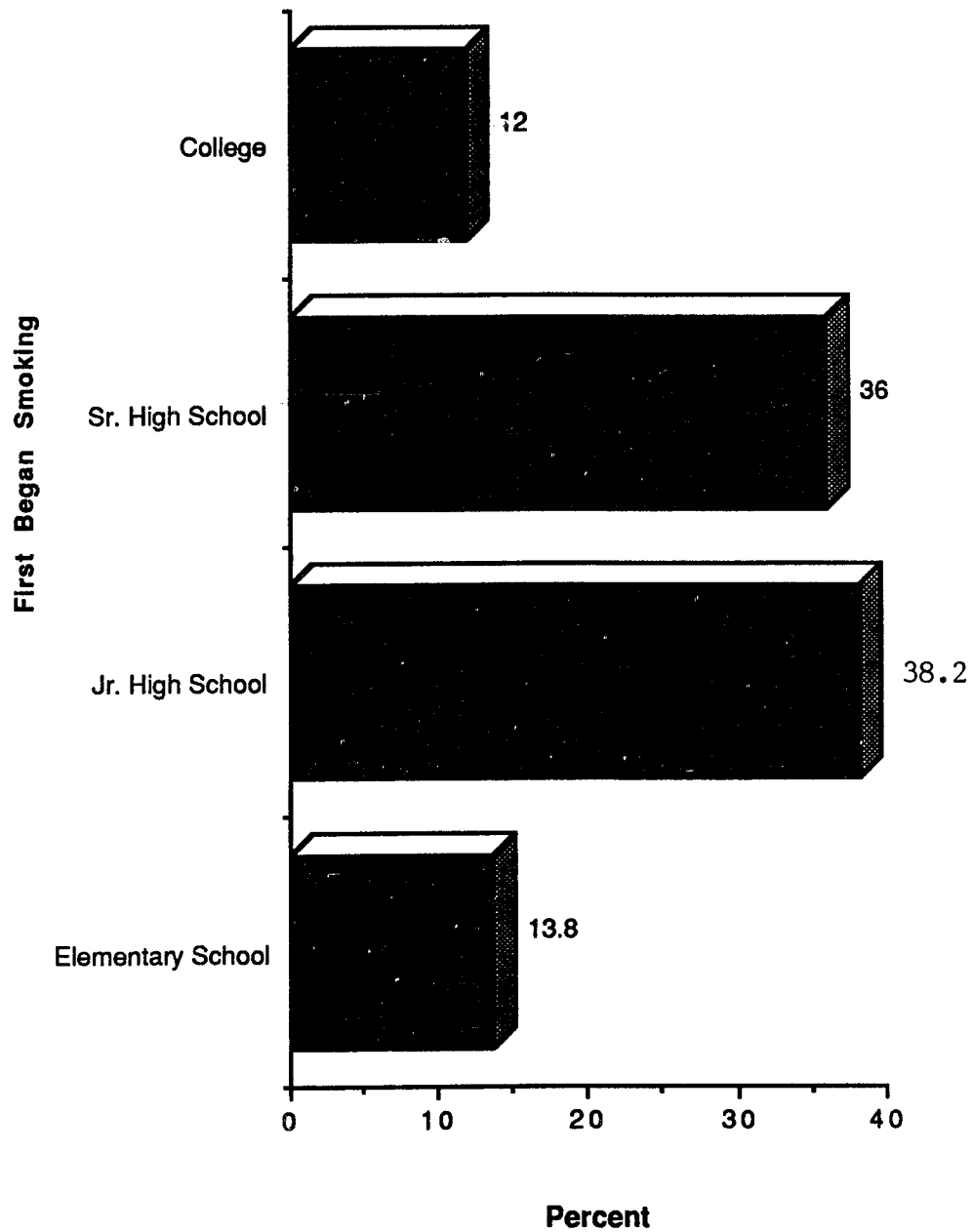
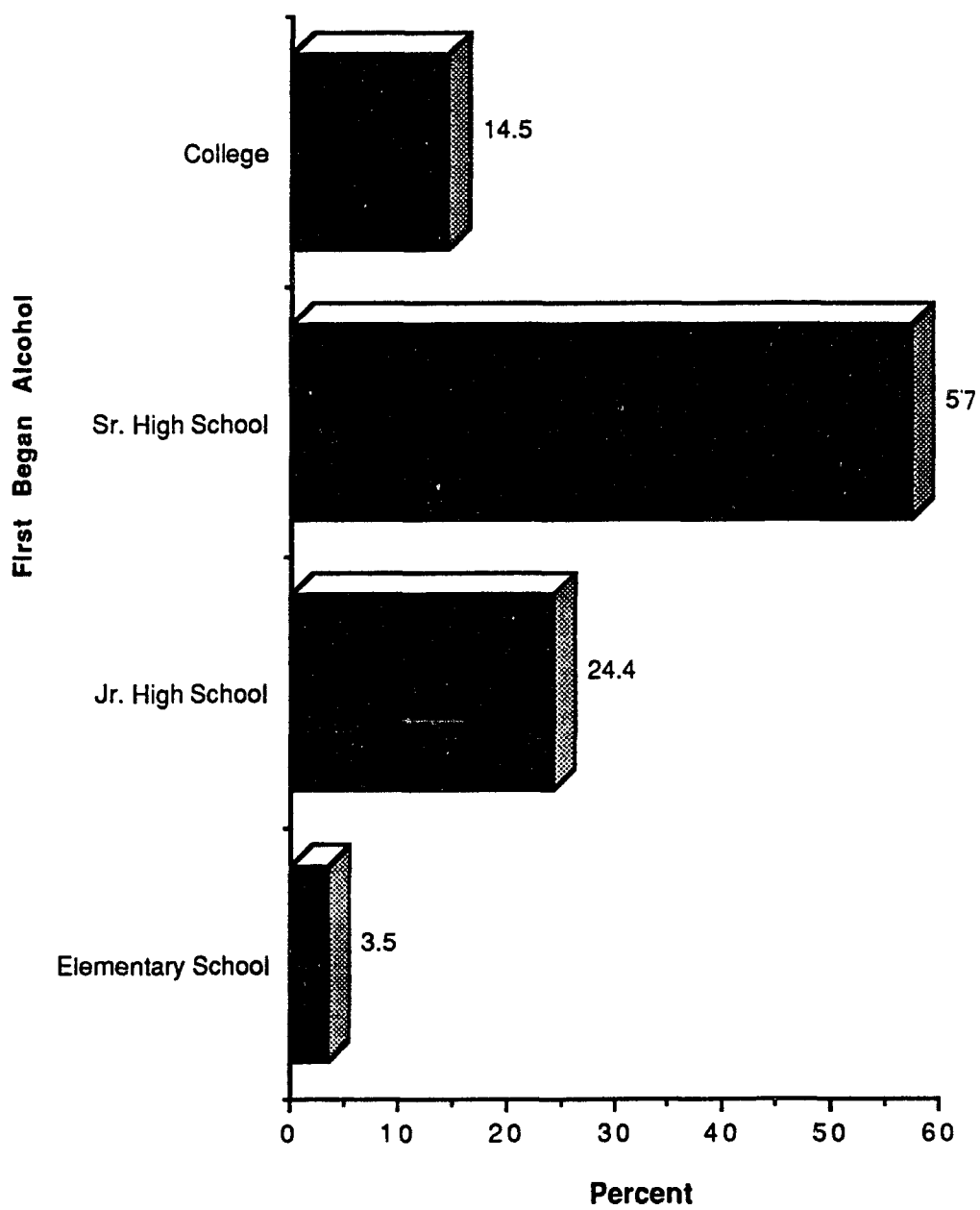


Figure 29. Distribution of initial use of alcohol; all drinking respondents.



who have ever used marijuana, 18.4% first used marijuana in college (see Figure 30).

Cocaine

As shown in Figure 31, approximately 41.3% of MIRM institutions' respondents who reported having ever used cocaine, first used the drug while in college. Initiation of use in high school was reported among 51.9% of cocaine users. These data concur with national statistics released by Johnston et al. (1987) which suggest that cocaine use generally begins later in life than most other illegal substances.

Uppers

While 18.4% of MIRM users of uppers initiated use during college, 81.5% began using uppers prior to beginning their post secondary education (see Figure 32).

Hallucinogens

As shown in Figure 33, the majority of students who have used hallucinogens began using the substance in senior high school and college.

Downers.

A greater percentage of MIRM institutions' students who have used downers initiated use during senior high school (46.2%) than at any other time (see Figure 34). However, nearly a third began using downers while enrolled in college.

Figure 30. Distribution of initial use of marijuana; users of marijuana.

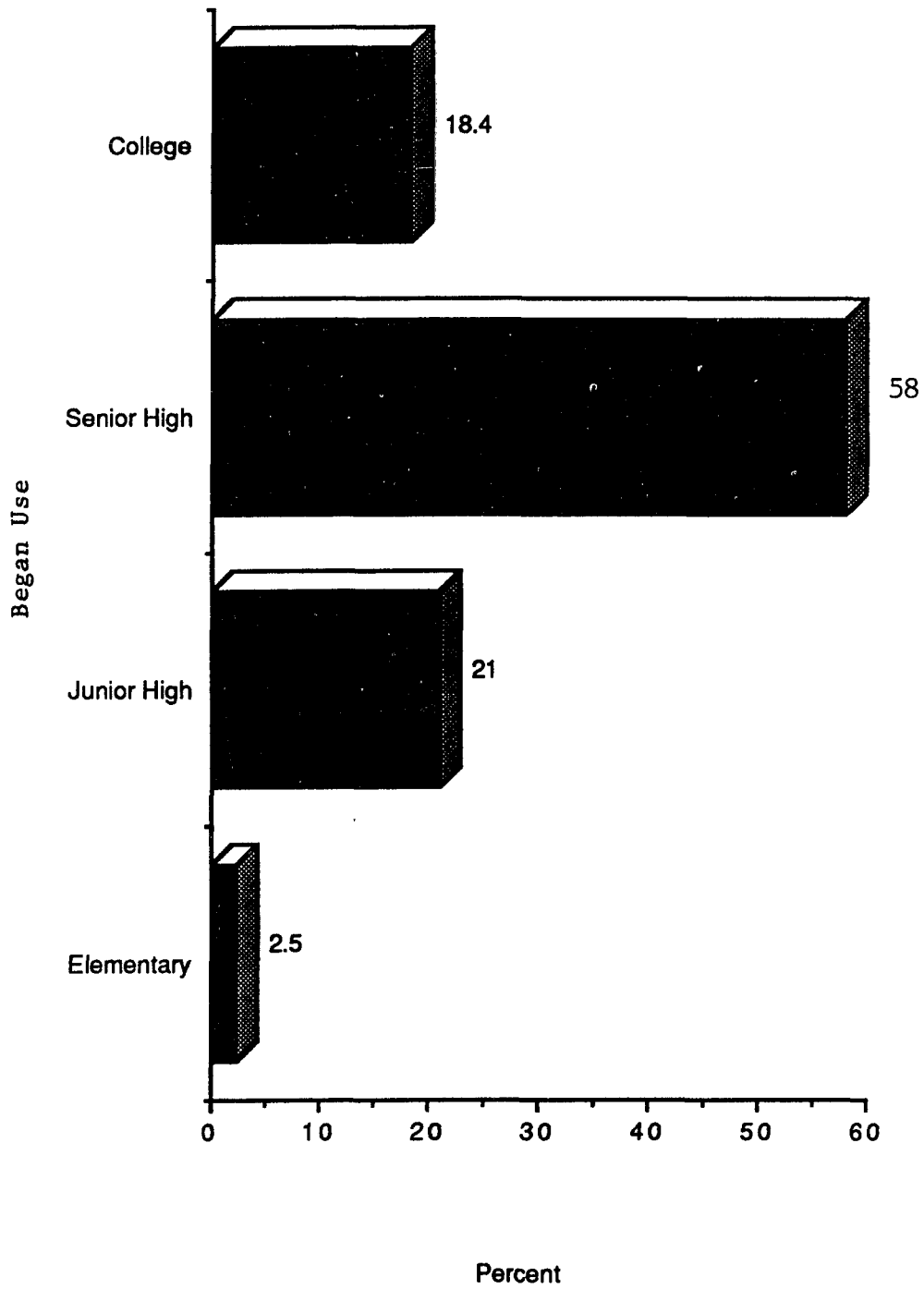


Figure 31. Distribution of initial use of cocaine; users of cocaine.

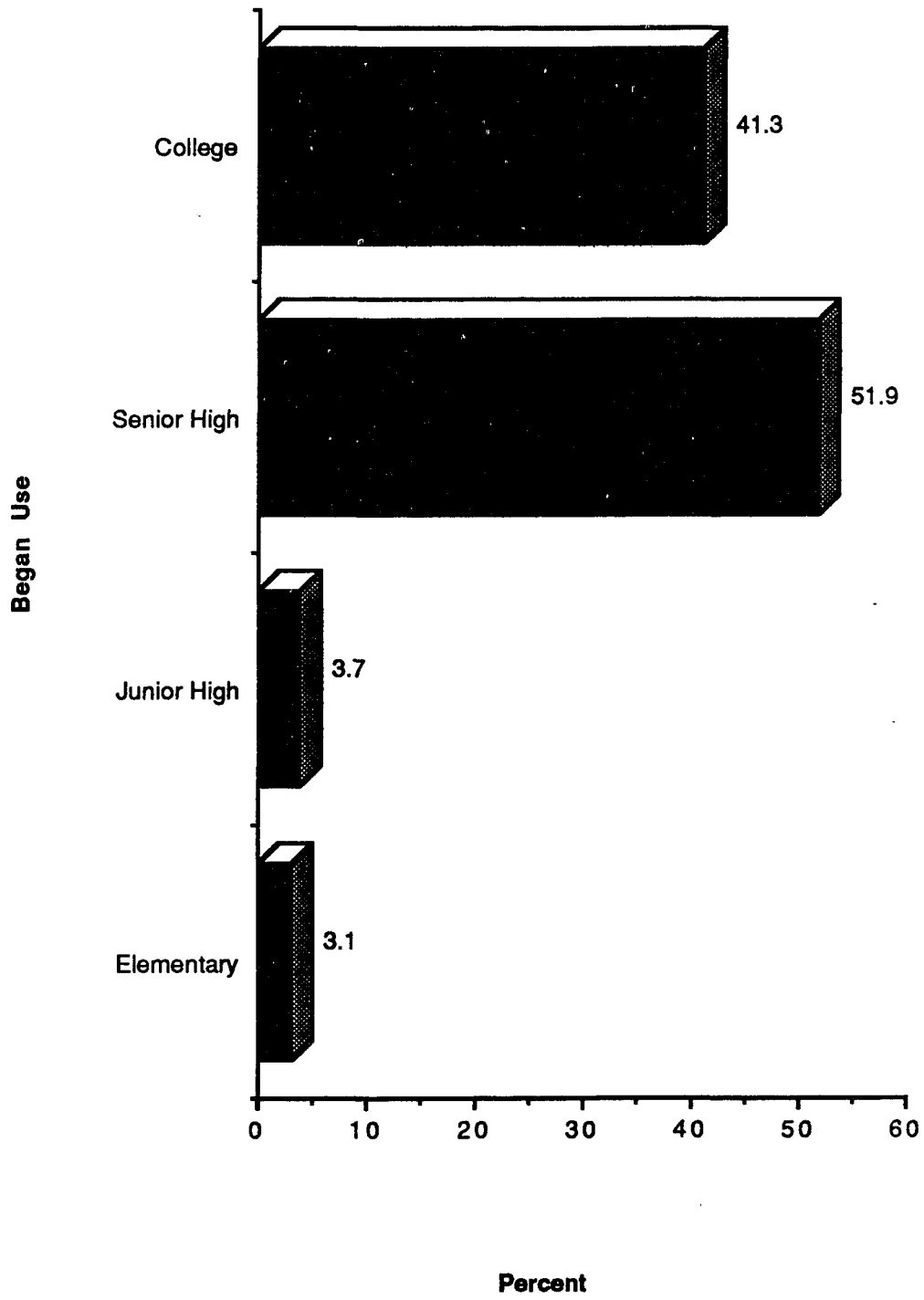


Figure 32. Distribution of initial use of uppers; users of uppers.

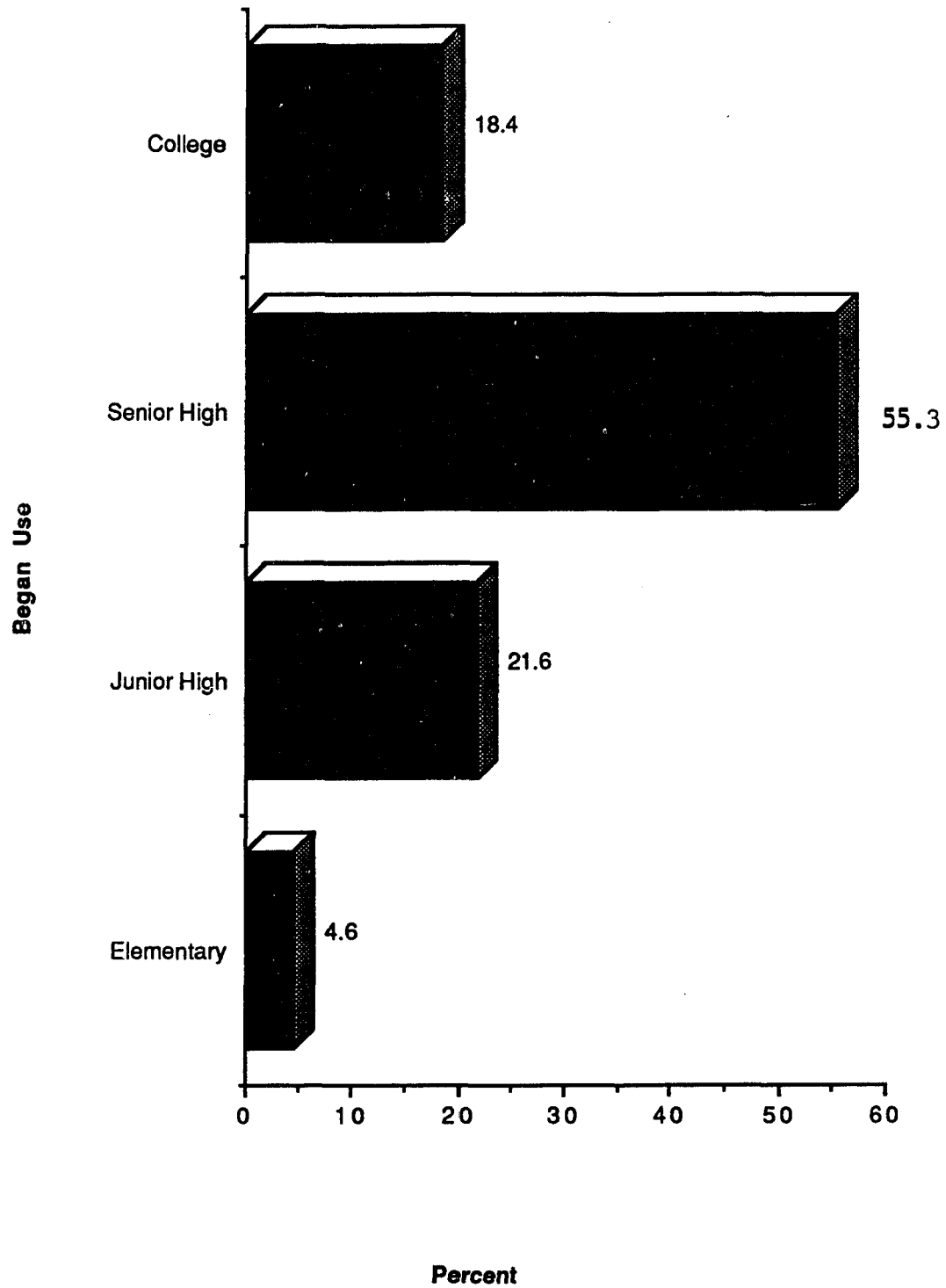


Figure 33. Distribution of initial use of hallucinogens; users of hallucinogens.

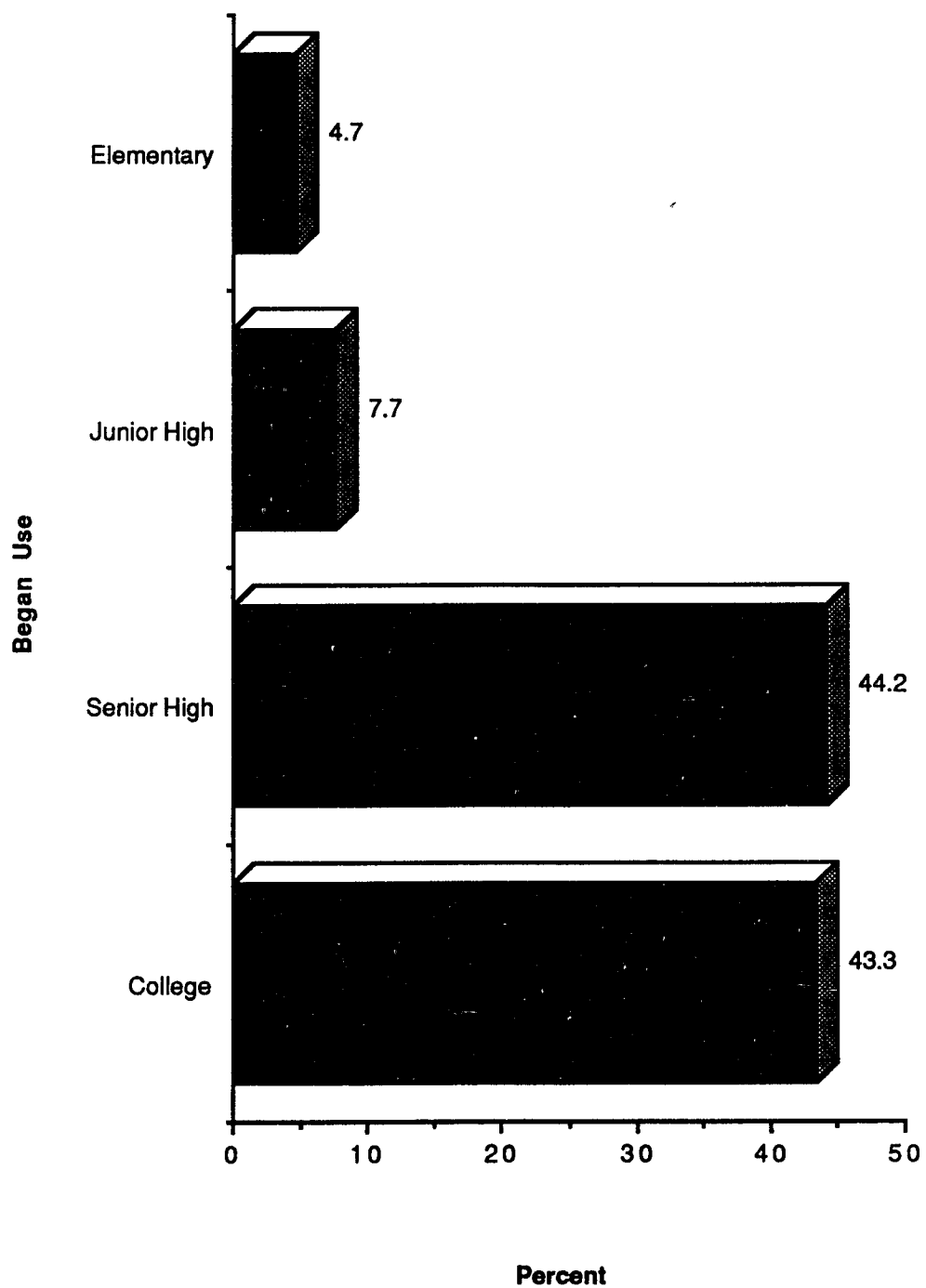
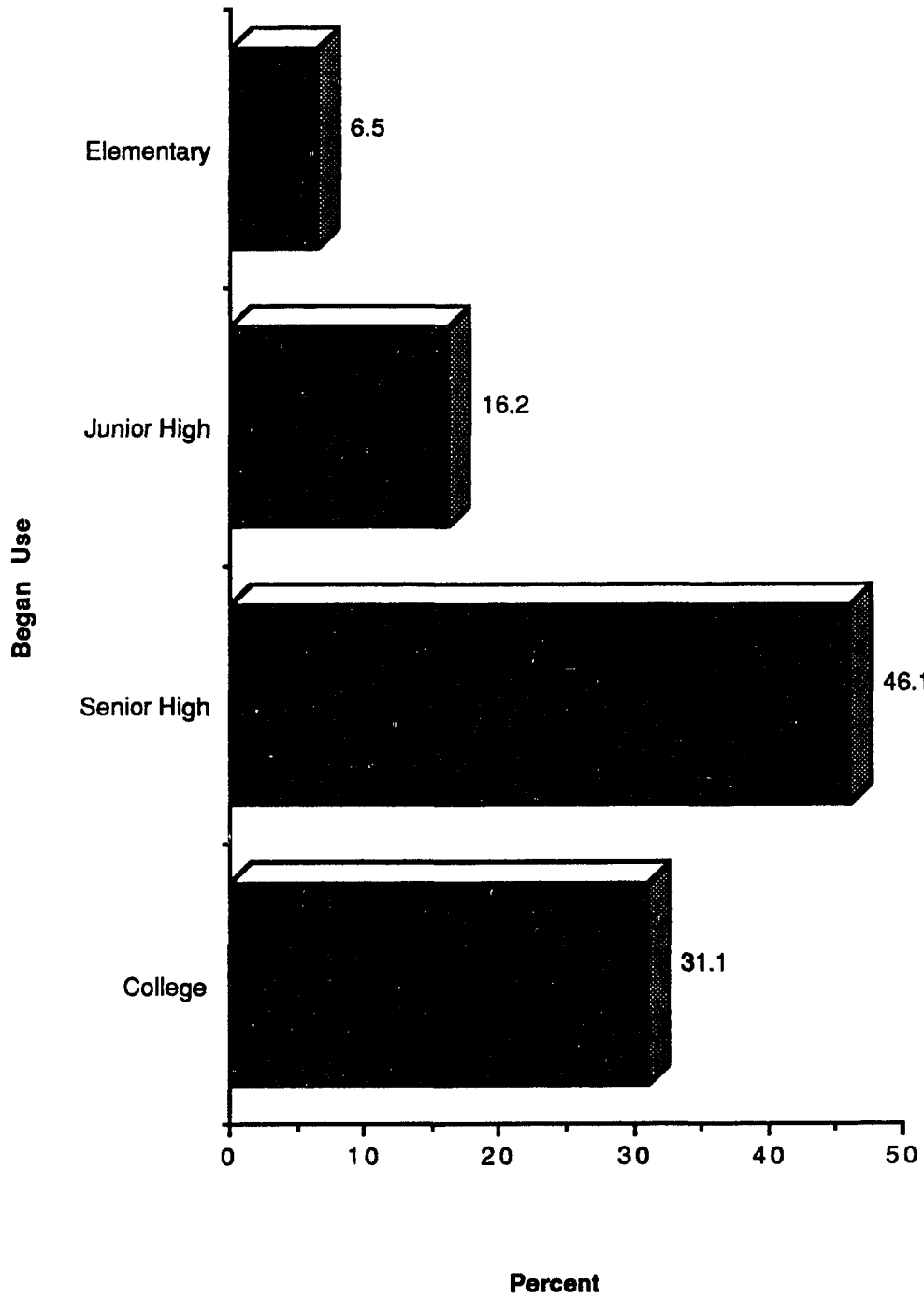


Figure 34. Distribution of initial use of downers; users of downers.



Other Drugs

Among MIRM respondents reporting at least experimentation with crack, opiates and designer drugs, most initiated use during high school or college (see Figure 35). However, first use of inhalants and over-the-counter substances with high alcohol used for non-medical purposes did not follow this pattern. Inhalants were first used by most respondents during junior high school (28.8%) and senior high school (45.2%). Initial use of inhalants decreased significantly to 11.5% during the college years. Because inhalants are considered a "cheap high," it is no surprise they are sought by students in their earlier teens with limited monies.

Designer drugs had a greater prevalence of initial use during senior high school and college. Until recently, these synthetic drugs were restricted almost exclusively to certain geographic regions of the country, such as California and Mexico. Since over over 59% of MIRM students reside in the southeastern United States, initiation of use of designer drugs may have been postponed due to a lack of availability.

Although the behavior of using prescription drugs intended for another individual began as early as elementary school for some students, 22.7% of MIRM students initiated use of another's prescription drugs while in college (see Figure 36).

Figure 35. Distribution of initial use of crack, opiates, and designer drugs; users of crack, opiates, and designer drugs.

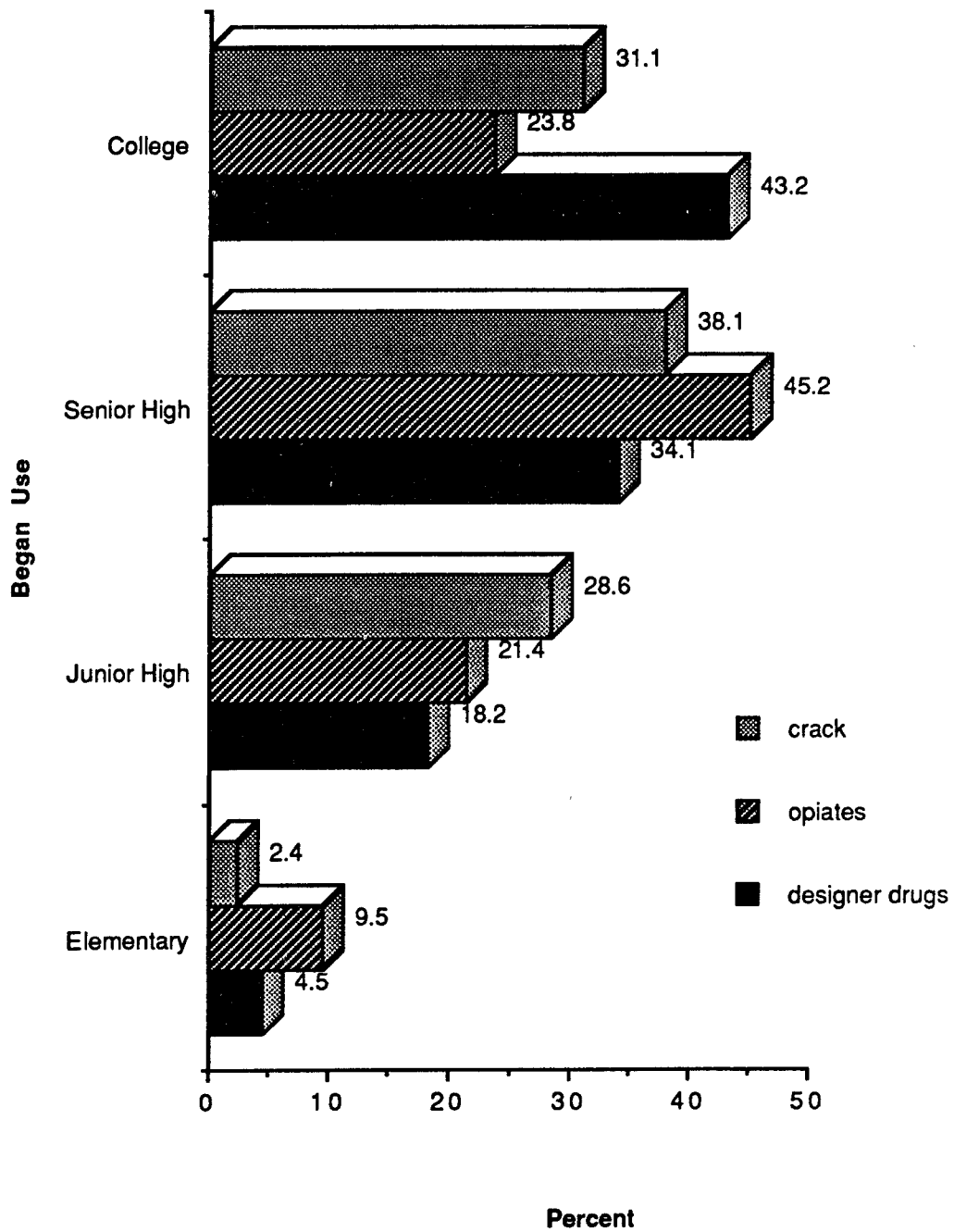
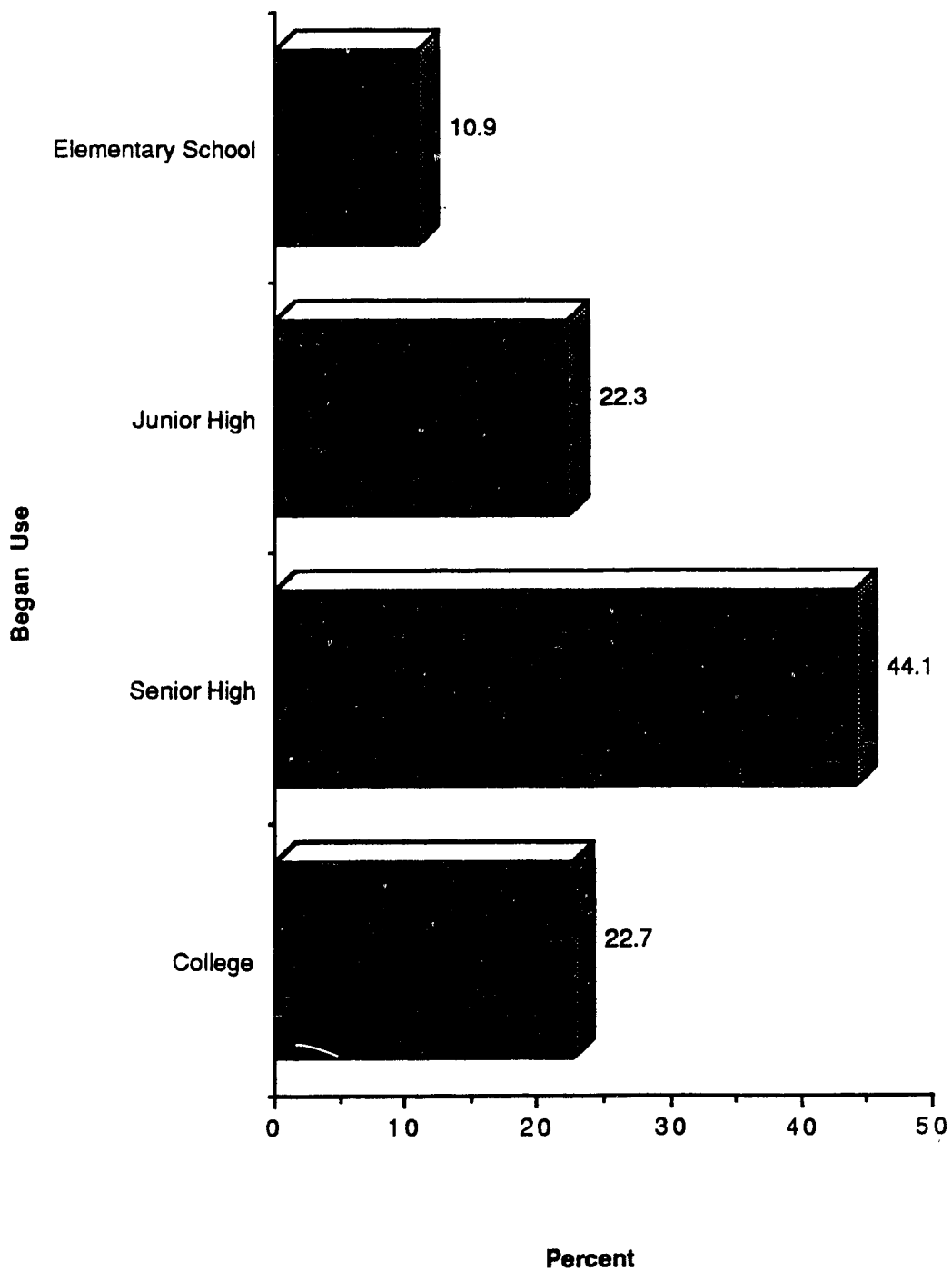


Figure 36. Distribution of initial use of others' prescriptions; users of others' prescriptions.



As shown in Figure 37, initial use of over-the-counter drugs used for nonmedical purposes increased from elementary school to senior high school, then decreased among college students. As many of the patterns associated with using over-the-counter substances are learned within the home, it is possible that as students moved from home and into the university milieu, their particular models for drug use may change.

Reasons for Drug Use

The following section discusses reasons students report for their use of drugs. An understanding of the students' explanations for using drugs may prove helpful to campus administrators developing prevention and intervention programs for their campuses.

As shown in Figure 38, students who consume alcohol report a wide variety of motivating factors, the most frequent of which is "to celebrate" (92.1%). Of students who drink to celebrate, 59.1% occasionally drink to celebrate, 22.1% regularly drink to celebrate, 7.9% often drink to celebrate, and 3% very often drink to celebrate. Enjoyment of the taste of alcohol and a desire to be sociable provide motivation for four out of five students who drink. At least three in five report that they drink to "get high," "to feel good," or "to relax." Among the most disturbing statistics revealed by the data in Figure

Figure 37. Distribution of initial use of OTC substances with high alcohol content; users of OTC substances with high alcohol content.

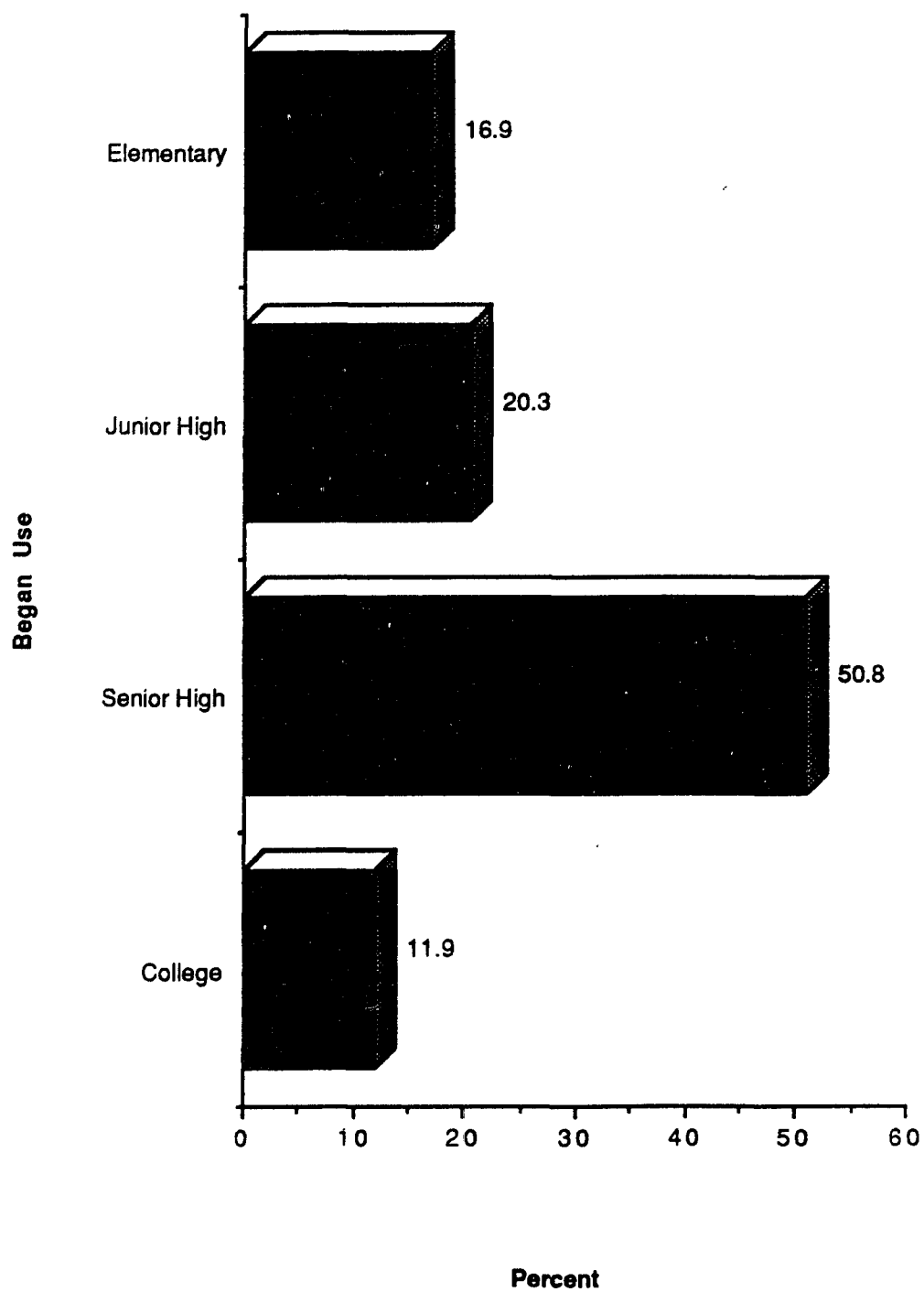
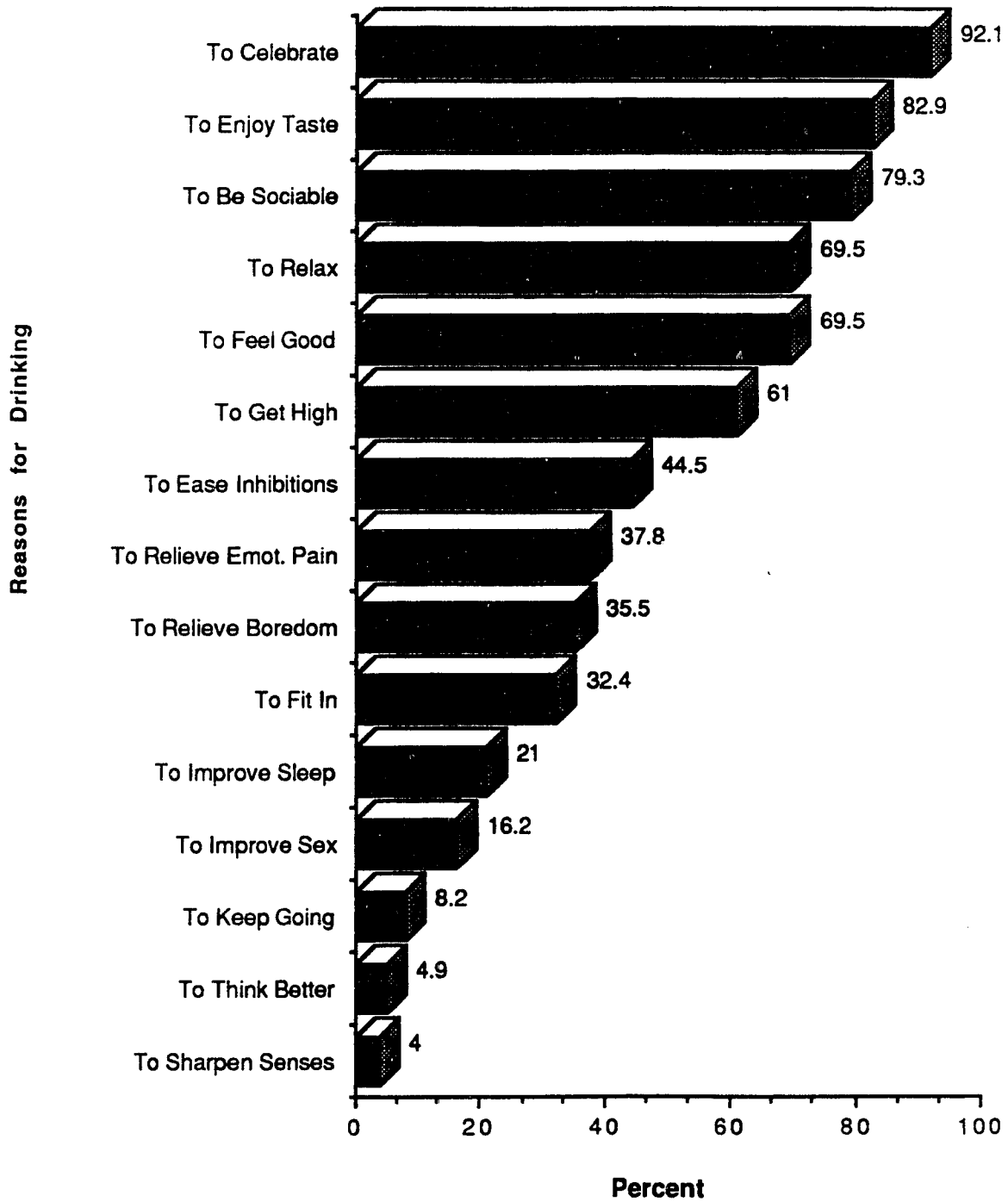


Figure 38. Distribution of reasons for consuming alcohol; all drinking respondents.

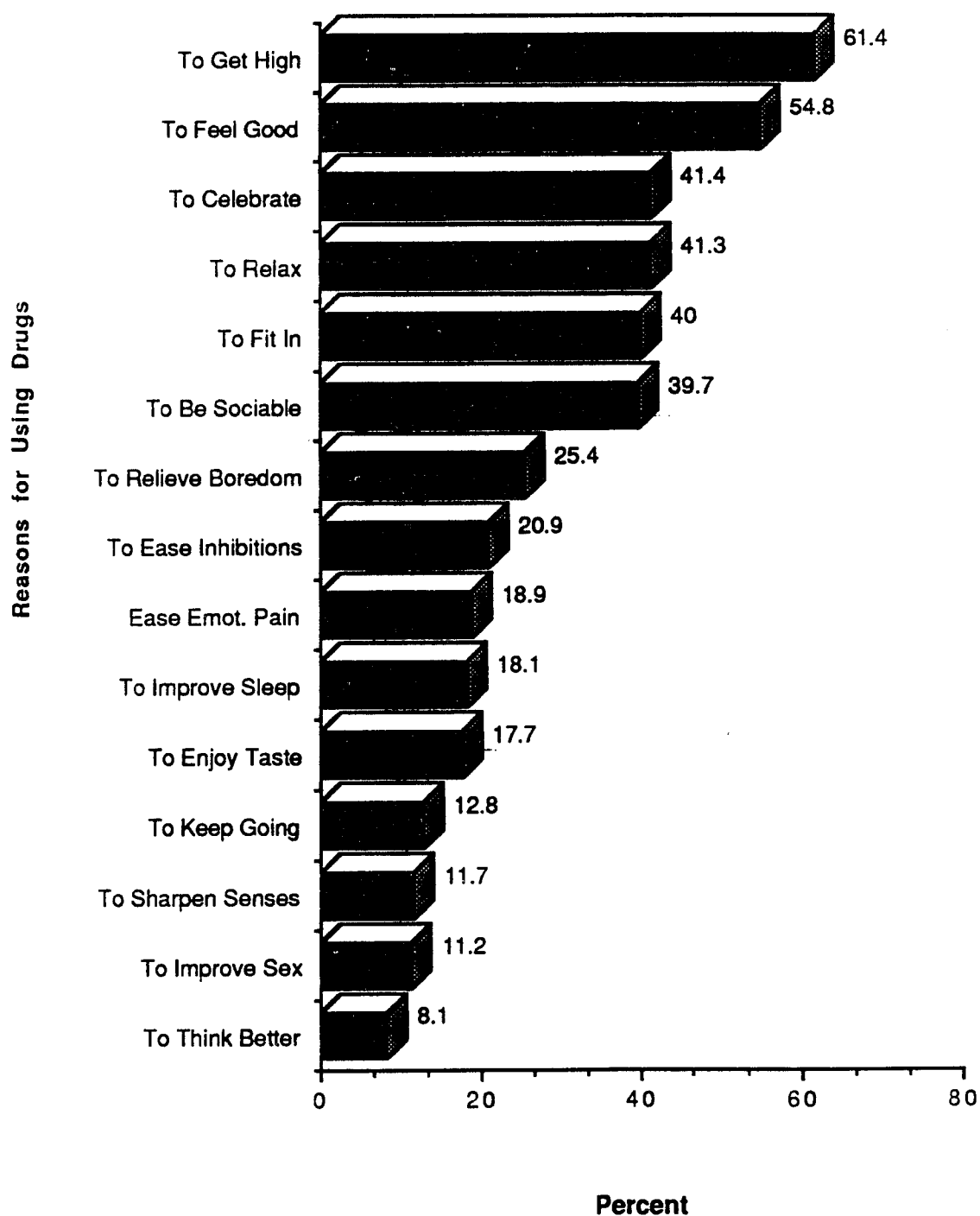


38 are the reports that (37.8%) of drinking students do so to "relieve emotional pain," and that 35.5% do so "to relieve boredom." These data strongly suggest addictive drinking problems among these students, or the possibility of alcohol-related emotional problems.

It is generally recognized that people use drugs for a variety of reasons. MIRM institutions' students were provided a list of possible explanations for drug use. The response options and the percentage of MIRM respondents who selected each option is reported in Figure 39.

Almost two-thirds (61.4%) of drug-experienced respondents reported that they used drugs "To get high," and over half (54.8%) reported drug use "To feel good." Celebration, relaxation, ingratiation, and sociability were cited as drug use motivators by four out of ten drug-experienced MIRM respondents. Other data summarized in Figure 39 reveal that a fourth (25.4%) of the drug-experienced respondents use drugs to "relieve boredom," and almost one in five (18.9%) use drugs "To ease emotional pain." These latter data are particularly troubling, since they are suggestive of addiction, or some form of drug-related emotional disturbance.

Figure 39. Distribution of reasons for using drugs: all drug-experienced respondents.



Circumstances Under Which Students Use Drugs

Tobacco Products

Figure 40 reports the circumstances under which MIRM institutions' tobacco users use tobacco. Nearly a third (32.3%) of MIRM tobacco users use tobacco only if it doesn't offend others. It would therefore seem that these respondents have some degree of control over their use of tobacco.

Alcoholic Beverages

About a fourth of respondents who drink (93% all respondents) stated that they drank at least several times per week, suggesting the potential for serious alcohol addiction. Approximately 40.4% of drinking respondents reported that they consume alcohol only on weekends, and another 34.8% reported consumption only on special occasions. These results are shown in Figure 41.

Approximately 41.6% of MIRM drinking respondents consume alcoholic beverages only when they are with a group, and 55.6% report using alcoholic beverages mainly with 1 or 2 other people. These data suggest that alcohol use among most MIRM institutions' respondents occurs in some social context as further indicated in Figure 42.

Respondents who drink report widespread variation in the location of their consumption of alcohol, with slightly more than two in five (43.4%) reporting exclusive

Figure 40. Distribution of circumstances under which smoking tobacco is used; all users of tobacco products.

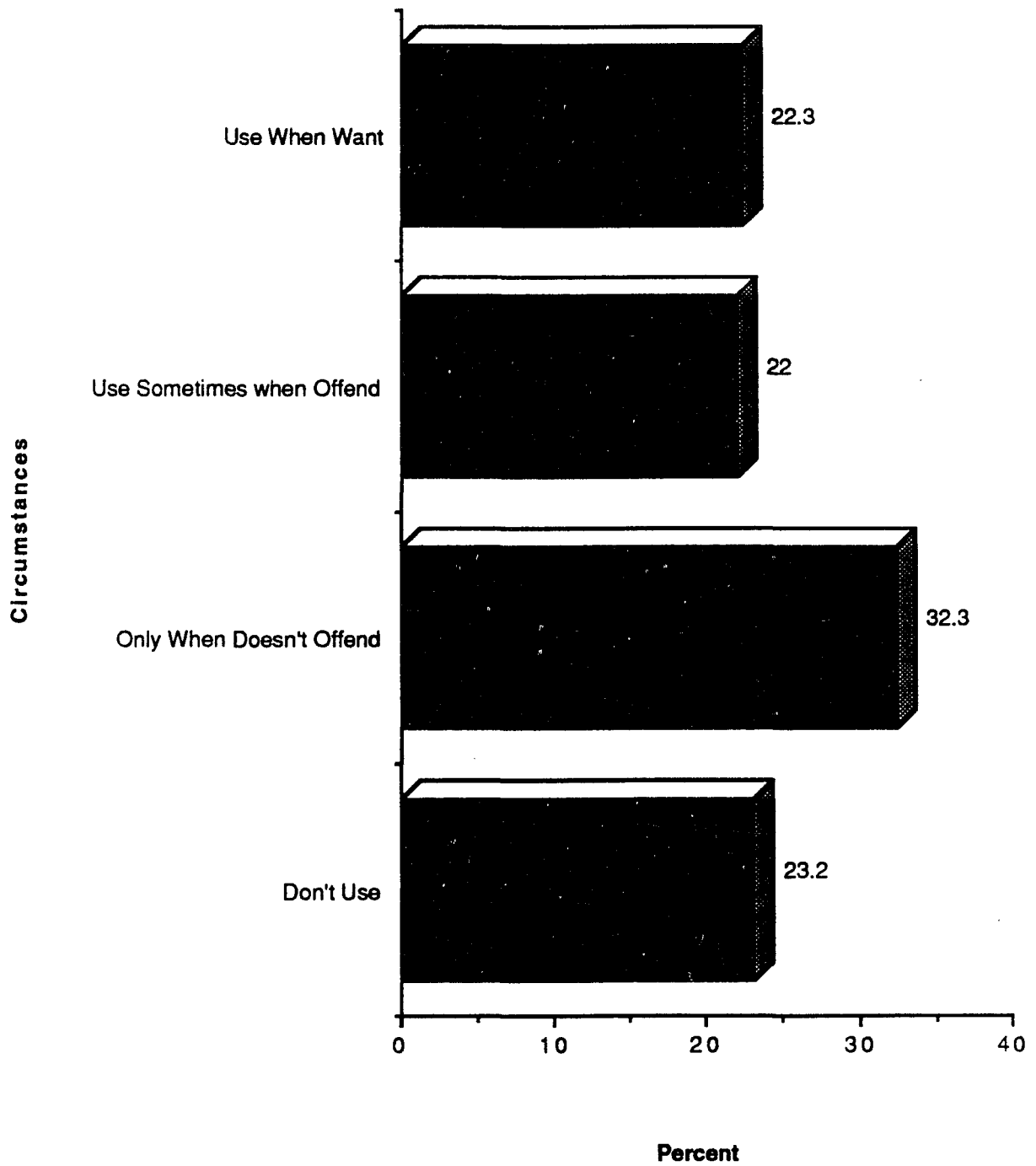


Figure 41. Distribution of frequency of alcohol consumption; all drinking respondents.

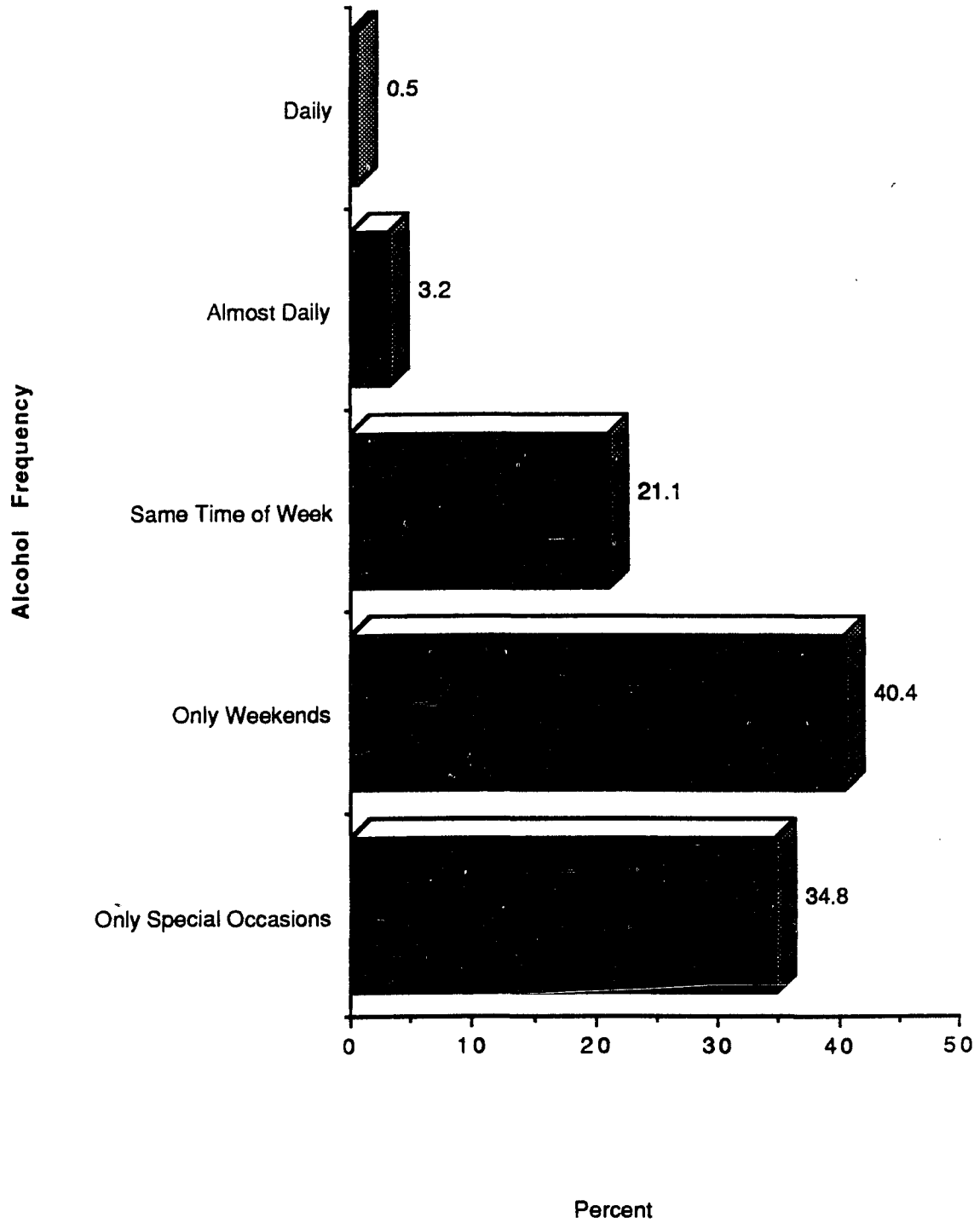
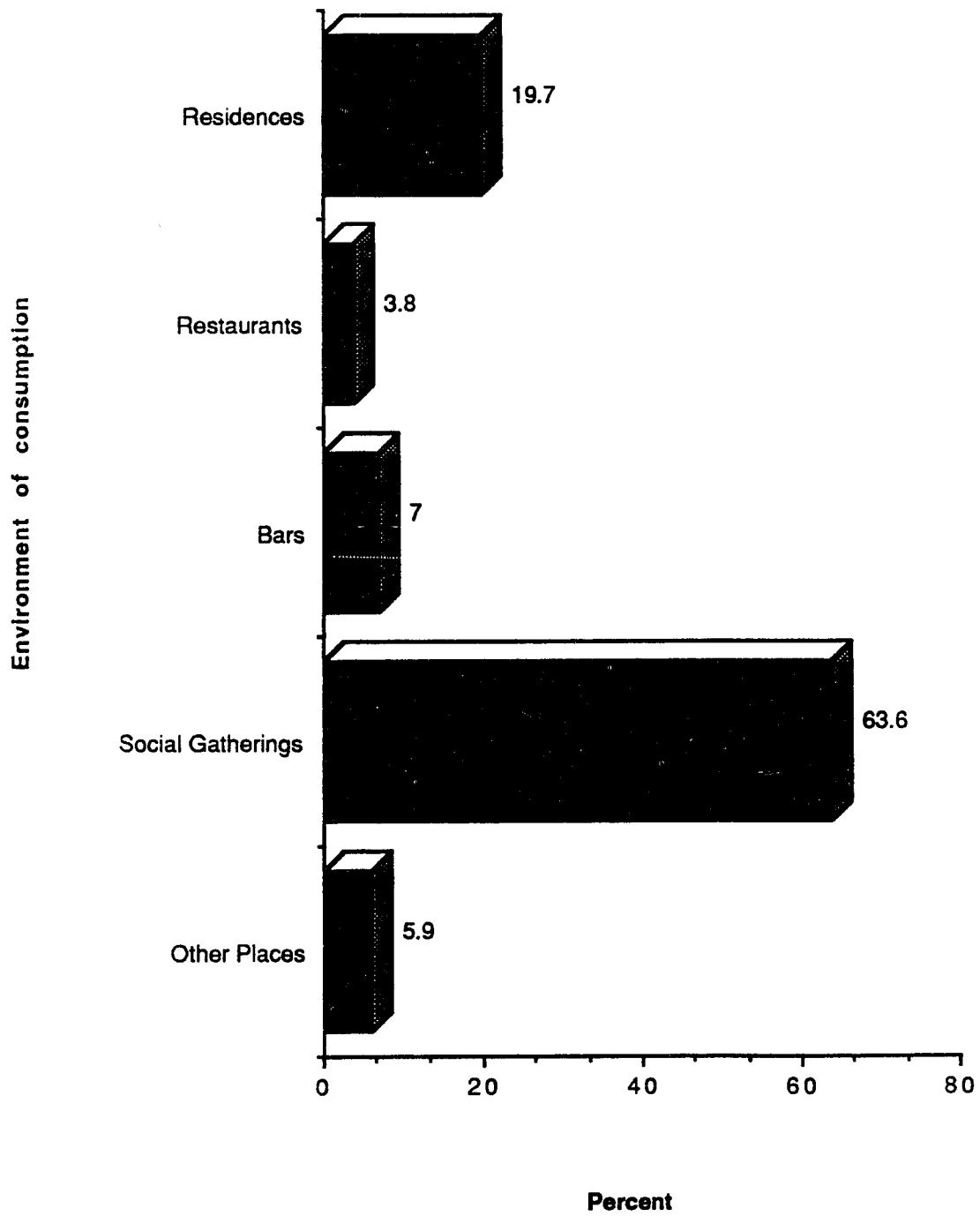


Figure 42. Distribution of environment of alcohol consumption; all drinking respondents.



consumption away from their college campuses (see Figure 43).

Illicit/Illegal Drugs

More than a tenth (12.5%) of drug-experienced respondents report use of drugs at least several times per week (see Figure 44). Although their frequency of drug use is lower than the corresponding frequency of alcohol use among MIRM alcohol-experienced students (compare Figures 12 and 15), MIRM drug-experienced students still engage in regular drug use to a discomfoting degree.

As was true with MIRM students' consumption of alcoholic beverages, the majority of MIRM drug-experienced respondents use drugs primarily when they are with other individuals, thereby constituting a social setting (see Figures 42 and 45).

About six in ten (60.5%) drug-experienced respondents reported that they confine their drug use to off-campus locations, while two in ten (21.2%) use drugs exclusively on their campus (see Figure 46).

Consequences of Drug Use

Alcoholic Beverages

Students who drink reported a wide variety of consequential social and legal problems, as summarized in Figure 47. Almost half (49.5%) of the respondents reported that they had engaged in sexual activity that

Figure 43. Distribution of location of alcohol consumption; all drinking respondents.

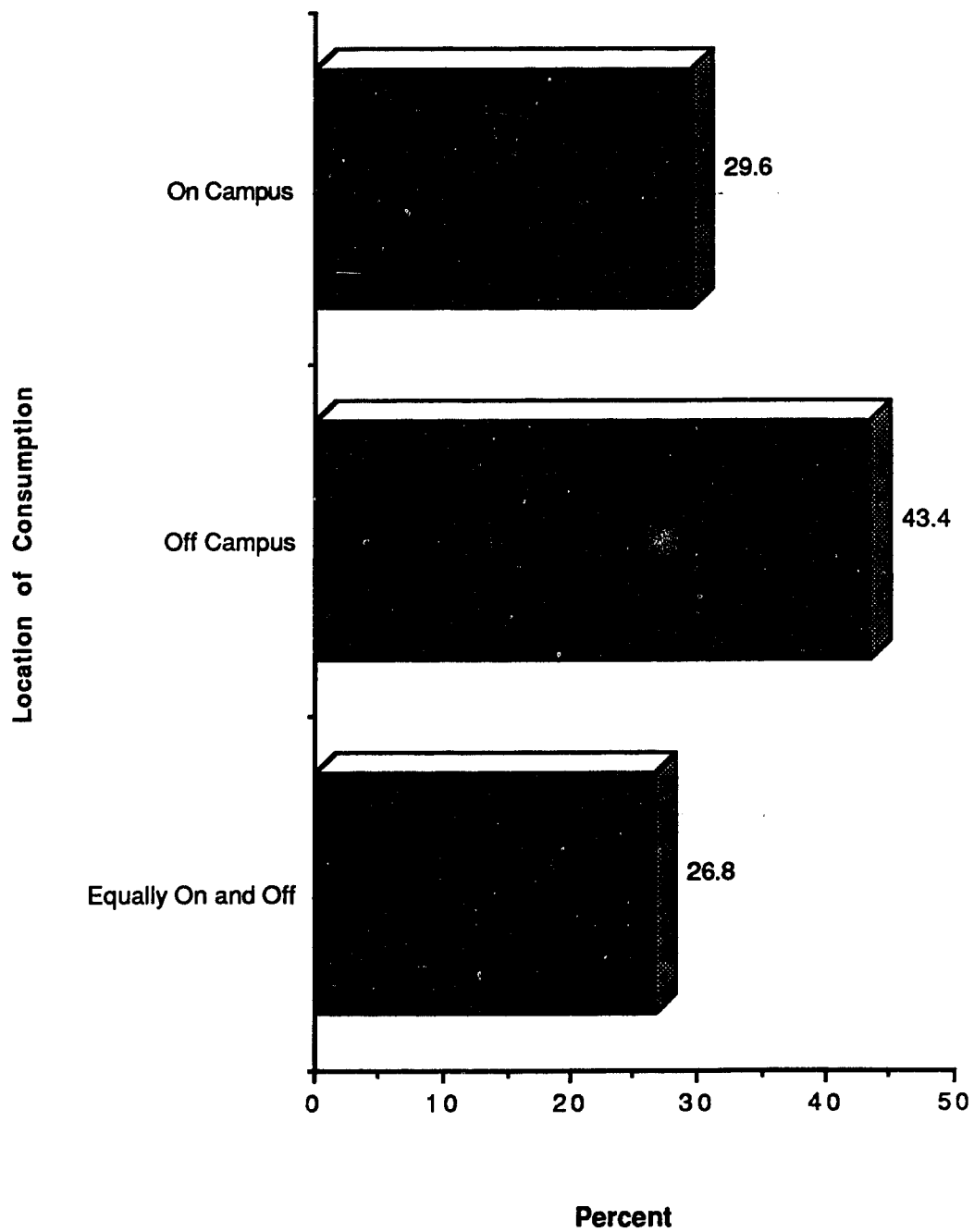


Figure 44. Distribution of frequency of drug use; all drug-experienced respondents.

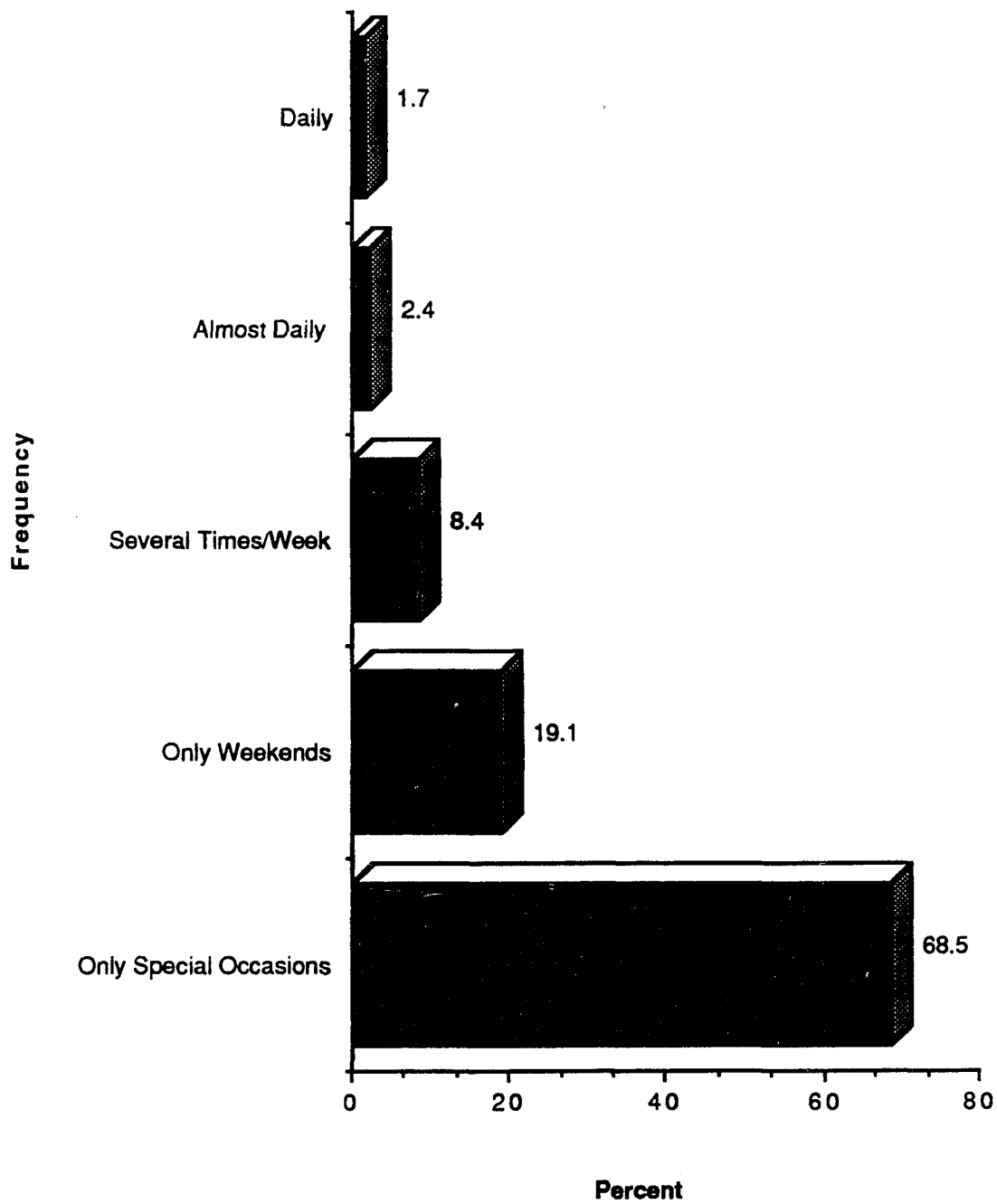


Figure 45. Distribution of environment of drug use; all drug-experienced respondents.

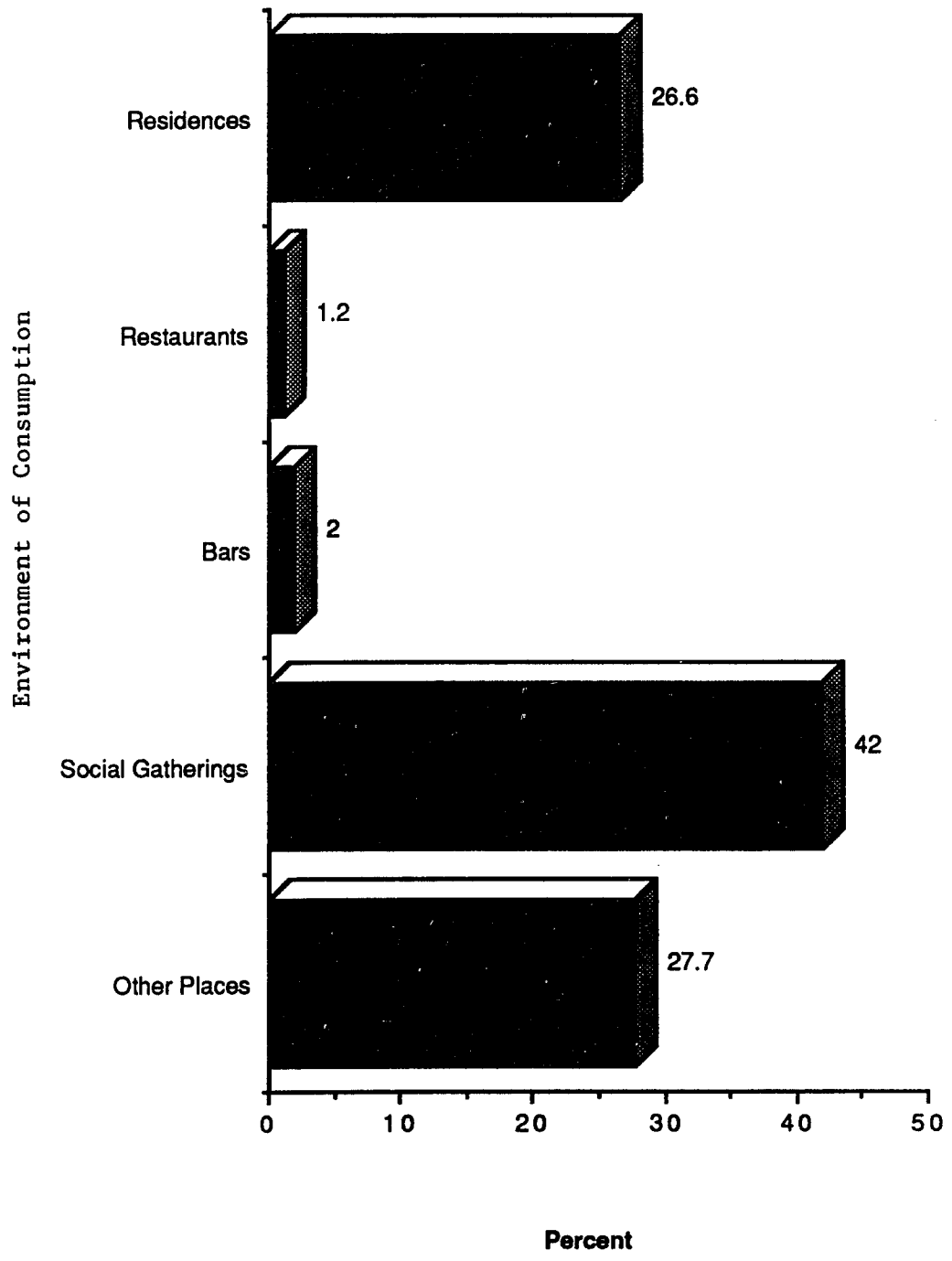


Figure 46. Distribution of location of drug use; all drug-experienced respondents.

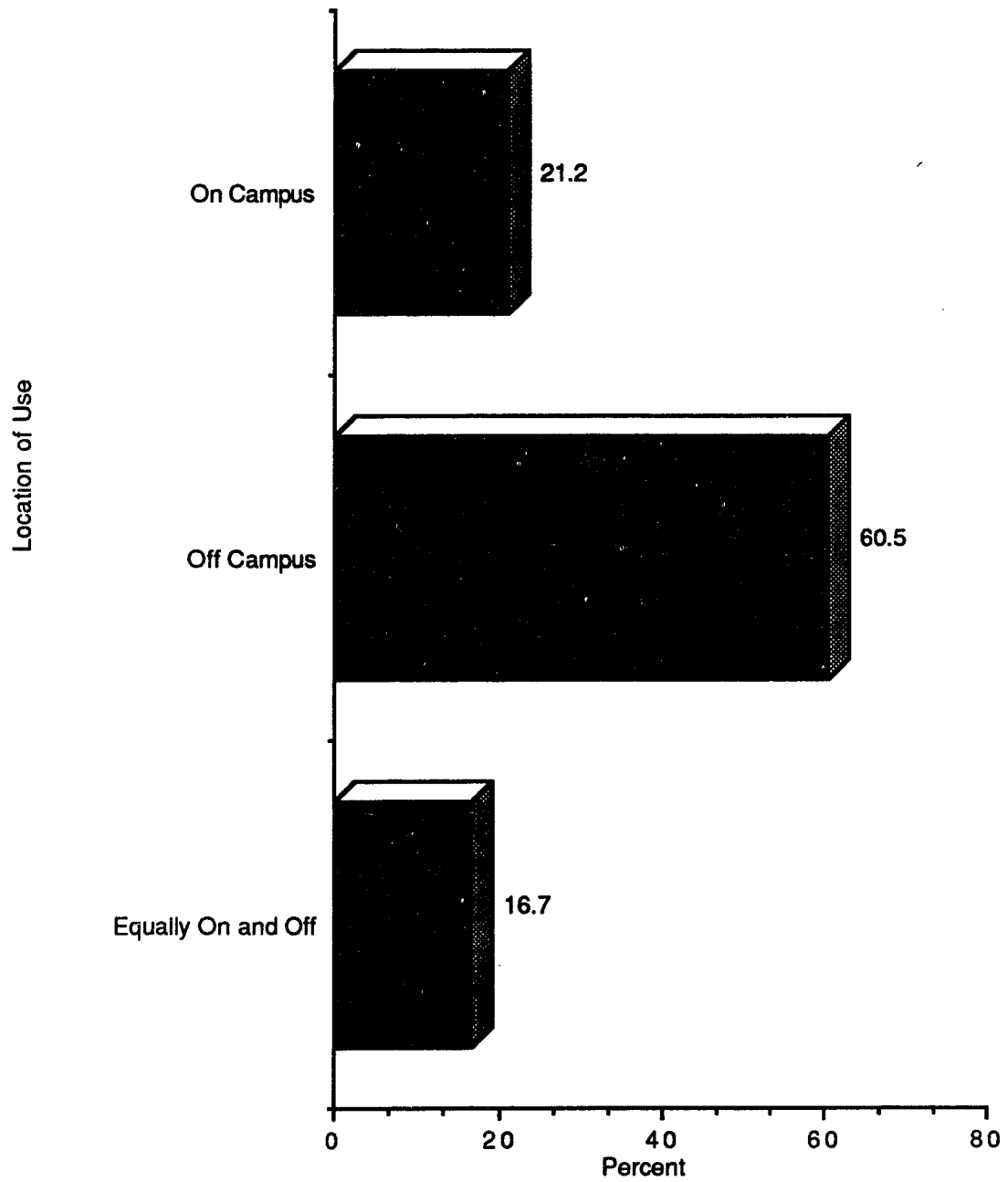
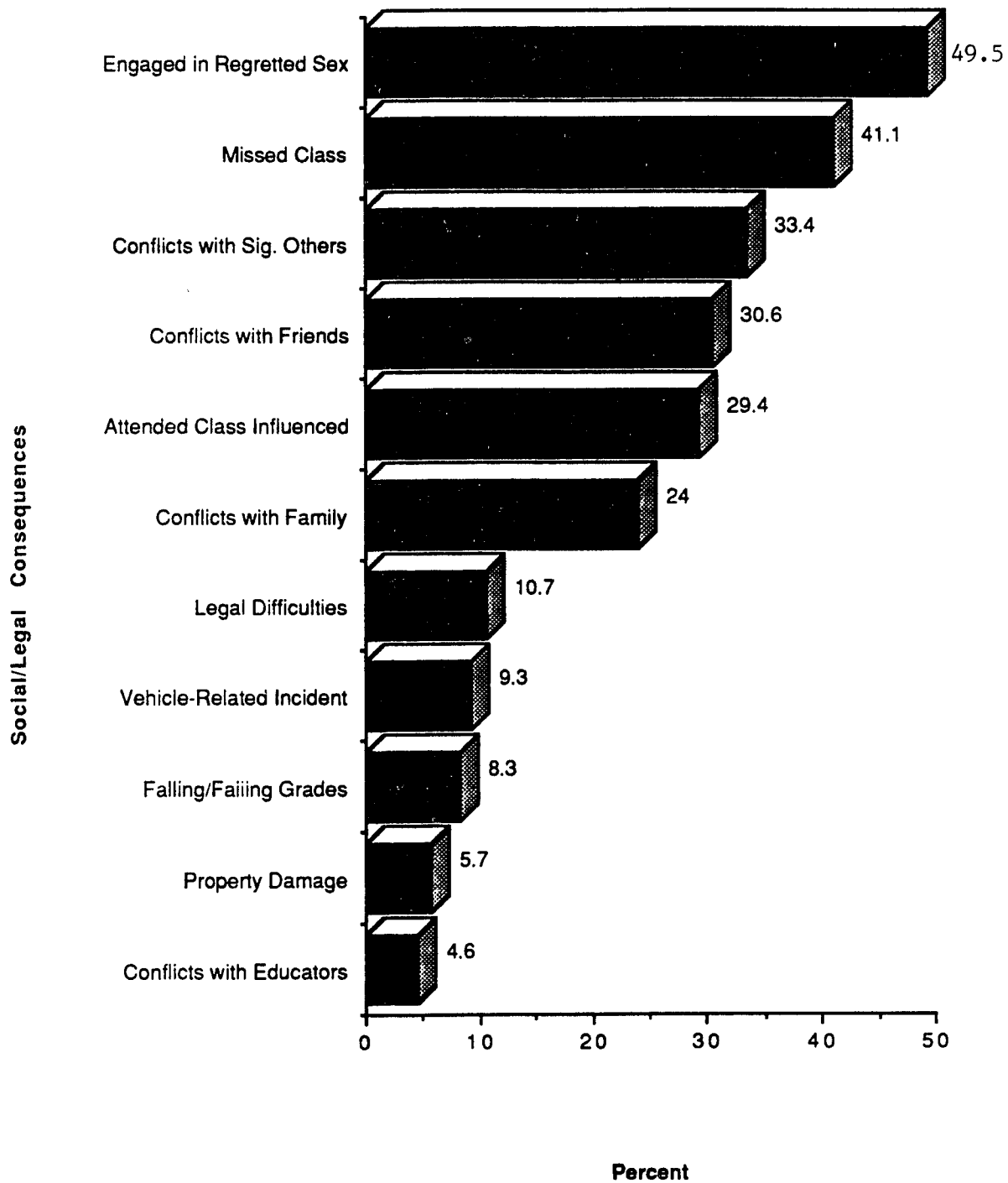


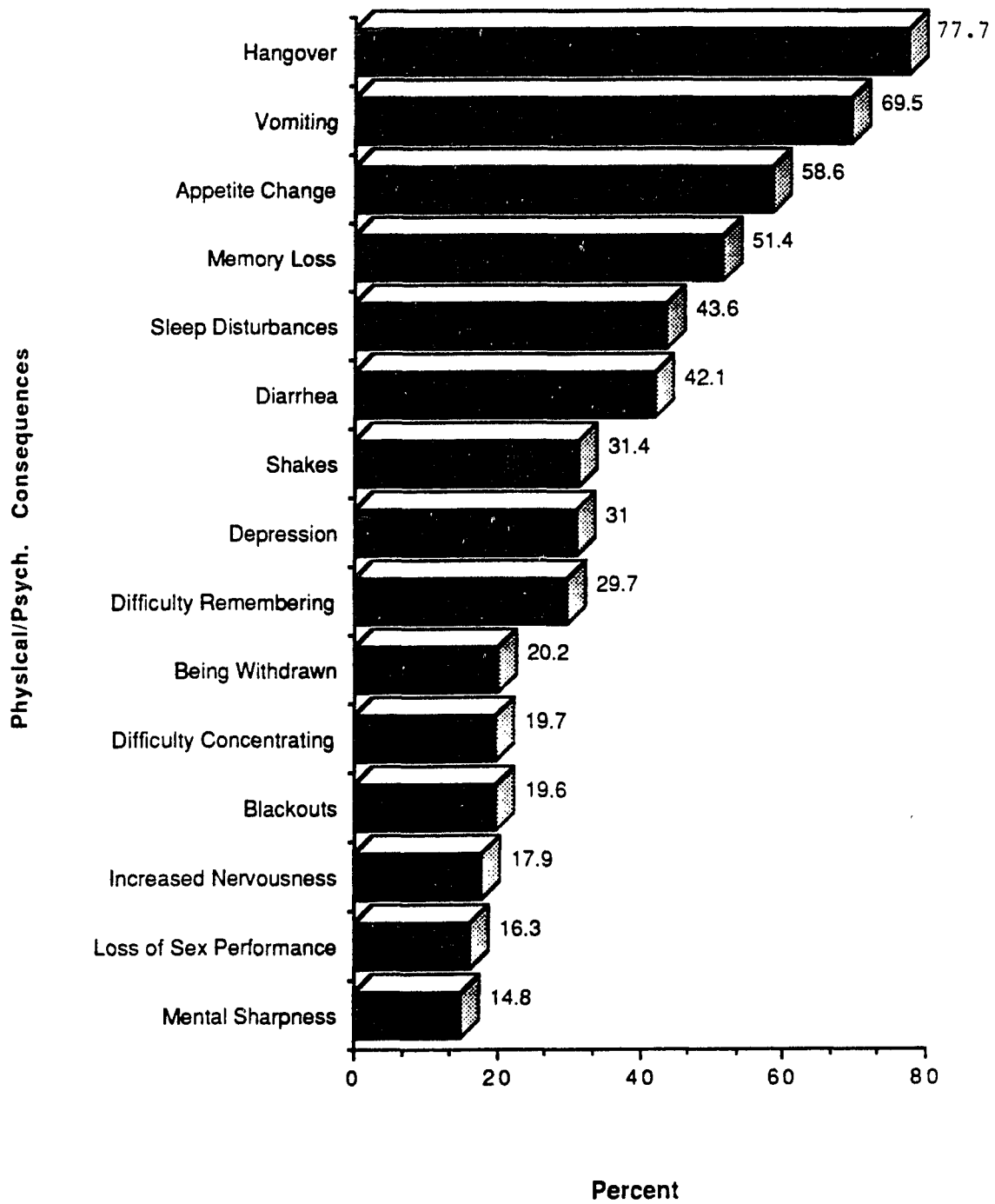
Figure 47. Distribution of social and legal consequences of alcohol consumption; all drinking respondents.



they would otherwise have avoided, as a result of alcohol consumption. Over 40% (41.1%) of drinking students had missed classes as a result of their alcohol consumption, and 29.4% reported attending class while under the influence of alcohol. Clearly, consumption of alcohol interferes with achievement of the principal mission of the MIRM colleges for a large percentage of their students. Social conflicts as a result of alcohol consumption were experienced by 24% to 49.5% of the 93 percent of MIRM students who reported alcohol experience.

The physical and psychological effects of alcohol consumption reported by MIRM students with alcohol experience were frequent and of wide variety (see Figure 48). Not unexpectedly, the experience of a "hangover" was most widely reported (77.7%) followed by vomiting (69.5%) and appetite change (58.6%). Among psychological effects, memory loss (51.4%), sleep disturbances (43.6%) and depression (31%) were most frequently reported. It is interesting to note that while 16.2% of MIRM alcohol experienced respondents use alcohol to improve sex, 16.3% report a loss of sexual performance as a result of alcohol consumption. Once again, the data on psychological reactions to alcohol consumption suggest more than the occasional consumption of small amounts of alcohol for a large percentage of responding students with alcohol experience.

Figure 48. Distribution of physical and psychological consequences of alcohol consumption; all drinking respondents.

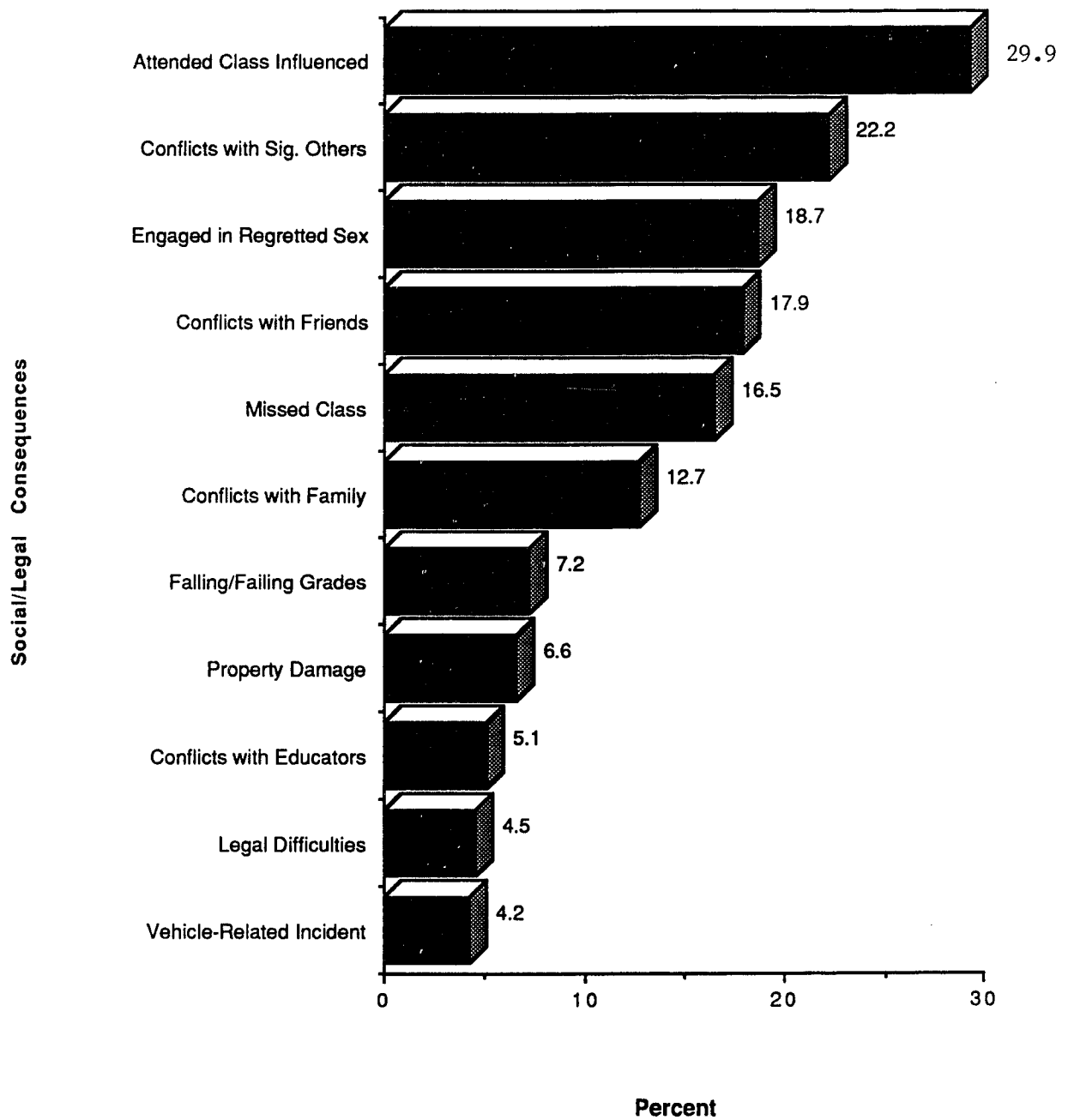


Other Drugs

Almost three out of ten (29.9%) drug-experienced students at MIRM institutions report having attended class while under the influence of drugs, and 16.5% report having missed class as a result of their drug use (see Figure 49). Other social and legal consequences of drug use reported by these students include having conflicts with significant others (22.2%) having engaged in sex they would have avoided if not influenced by drugs (18.7%) and having conflicts with their friends (17.9%). Legal consequences of drug use were experienced less frequently by these students than were social consequences. Between four and five percent reported consequential legal difficulties or vehicle-related incidents (4.5% and 4.2%, respectively).

More than four in ten (44.3%) drug-experienced respondents reported experiencing appetite changes as a result of their drug use, about three in ten (29.7%) reported sleep disturbances, and almost as many reported consequential memory loss (28.3%). Periods of being withdrawn (22.9%), a hangover (24.9%), and periods of depression (22.1%) were reported by more than one in five drug-experienced respondents. These latter statistics indicate the possibility of serious mental health problems resulting from drug use by noticeable percentages of the

Figure 49. Distribution of social and legal consequences of drug use; all drug-experienced respondents.



MIRM institutions' drug-experienced students (see Figure 50).

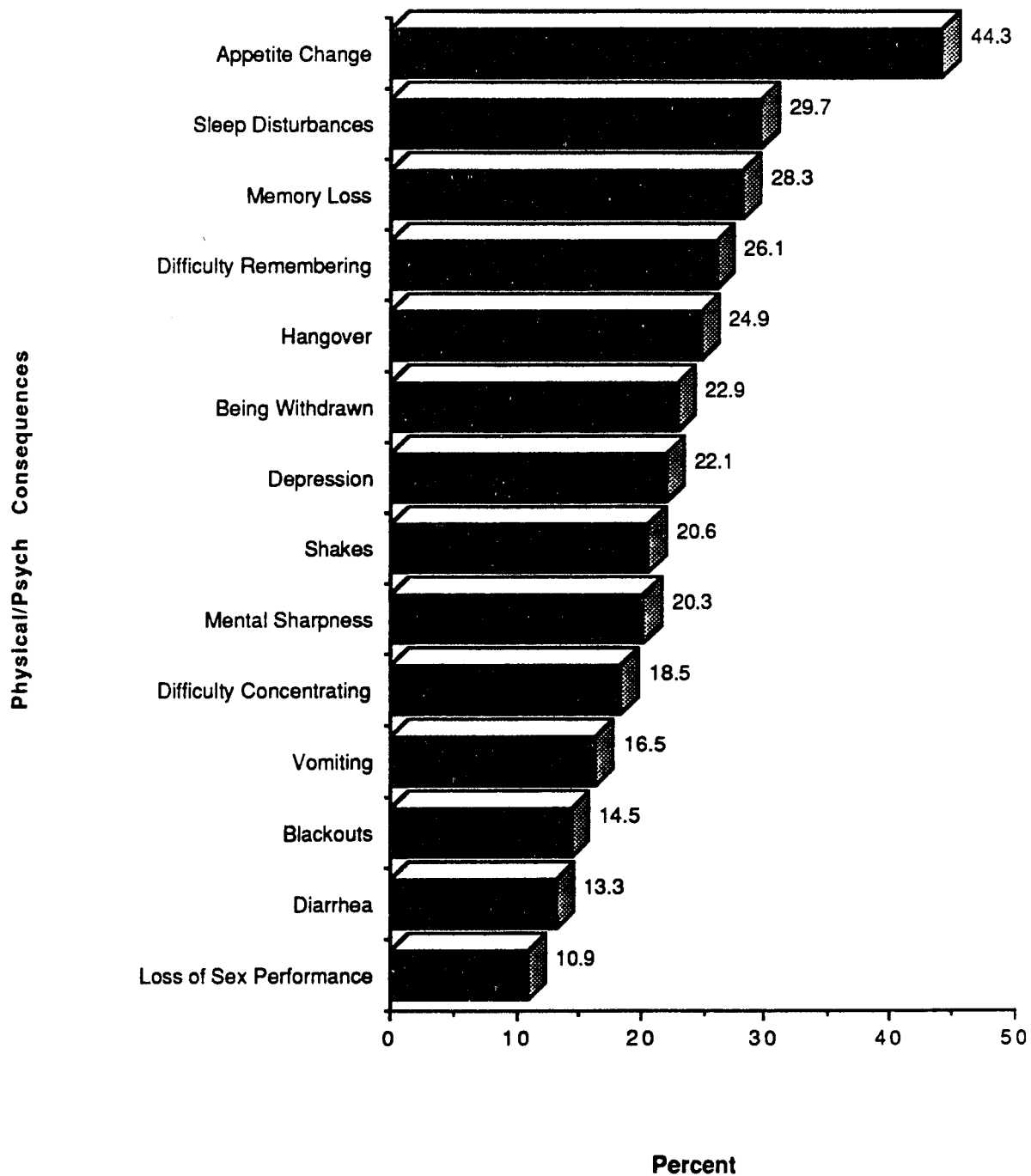
Attitudes and Beliefs.

Relevant to any drug program are the attitudes students have toward drug use and the effects drugs have had in their lives. These attitudes and experiences can potentially aid or deter student participation in drug programs for college students. The following section discusses MIRM institutions' students perceptions of potential health damage resulting from their use of drugs, students' perceptions of their campus drug problems, and students' willingness to attend a student-sponsored, college-sponsored, or church-sponsored drug program. Also included are reported reasons for avoiding drugs. Tobacco products, alcoholic beverages, marijuana, cocaine, hallucinogens, uppers, downers, and prescription drugs prescribed for someone else, will be discussed individually. Because the sample sizes for the other drugs were very small, conclusions drawn from their data would be suspect. Consequently, these drugs will not be discussed individually in this section.

Tobacco Products.

It is noteworthy that more than four of five tobacco users (85%) expect their use to damage their health, and more than three of five users (62.6%) expressed a desire

Figure 50. Distribution of physical and psychological consequences of drug use; all drug-experienced respondents.



to stop using tobacco products. The latter statistic suggests that tobacco addiction is widespread among students who use tobacco.

Alcoholic Beverages

Among students who have "ever used alcohol," more than a third (34.9%) expect their use to result in damage to their health. Nearly a fourth (23.6%) expressed the desire to reduce their use of alcohol, and 30 percent expressed the desire to stop using alcohol. These latter statistics suggest that at least a fourth of the 93 percent of respondents who have used alcohol consider their use to be somewhat beyond their control and possibly addictive. Certainly, these data suggest that alcohol use among many respondents is neither casual nor occasional.

Over a third (35.6%) of all MIRM students reported that at least one member of their family had experienced difficulty of some sort related to alcohol consumption. Consequently, these students may be at greater risk of acquiring alcohol-related problems as a result of their similarity to or association with the "problem drinker".

Of students who currently consume alcohol, 77% reported that they are familiar with drug policies on their campus. Only 3.2% are unfamiliar with drug policies, while 16.3% responded "don't know". These results suggest that very few of MIRM current drinking

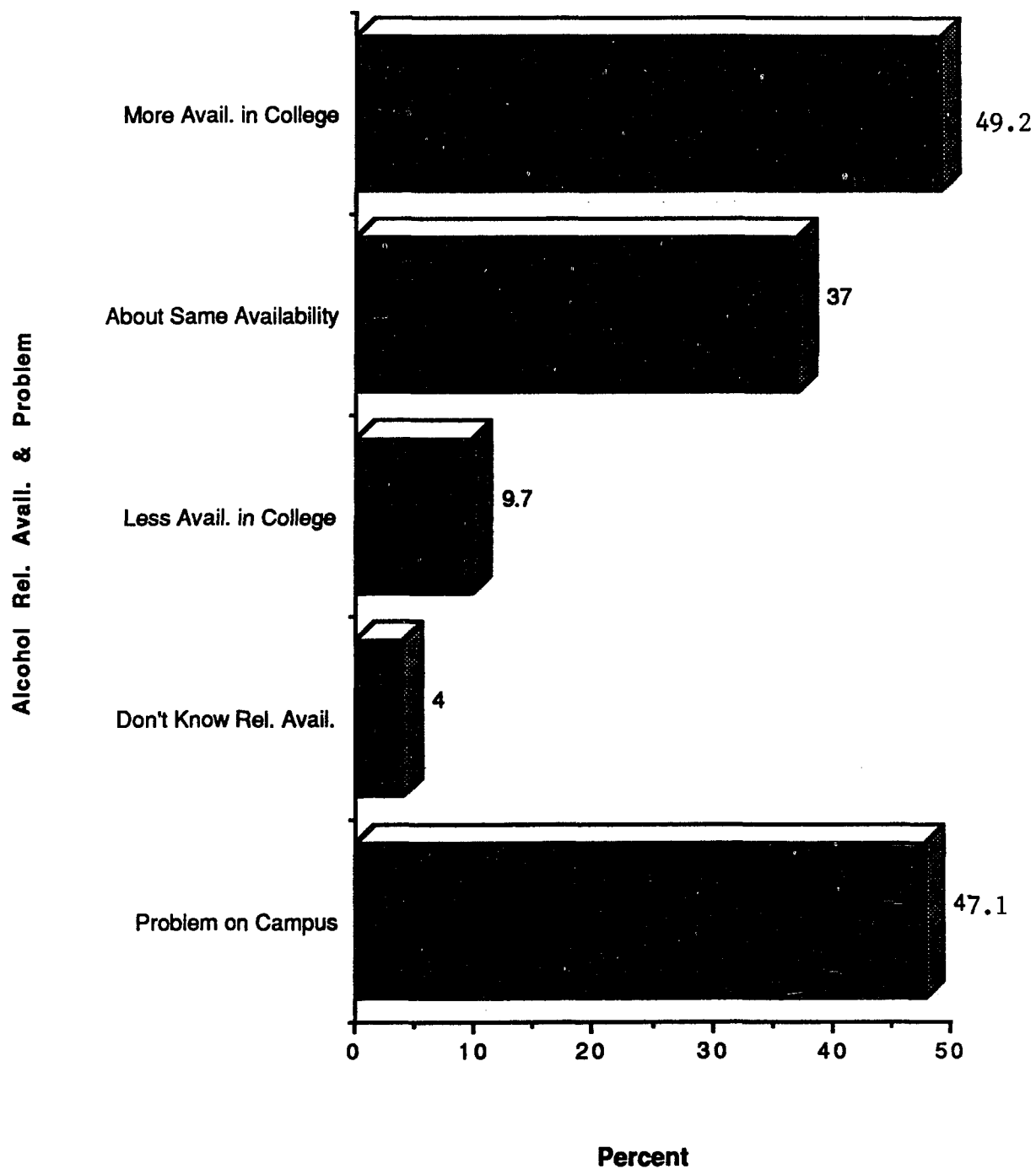
respondents reported that they are completely unaware of their campus drug policies. Consequently, it would seem that dissemination of information on campus drug policies is not sufficient to curtail the use of alcohol.

Nearly half the responding students (49.2%) reported that alcohol is more readily available to them in their college than it had been prior to their enrollment in college and that alcoholic consumption was a "problem on their campus." These data, summarized in Figure 51, suggest that students enrolled in the MIRM colleges recognize the problems attendant to the consumption of alcohol on their campuses, and desire to have consumption of alcohol addressed as a problem by their institutions.

Marijuana

Among recent marijuana users, 71.5% reported that they are familiar with their campus drug policy, while 25.9% reported a lack of familiarity with their campus drug policy. The remaining students responded "don't know." Regardless of what the campus policies state about drug use, 48.3% of MIRM marijuana users perceive an attitude of acceptance of drug use on their campus compared to 22% who did not perceive drug use as accepted behavior on their campus. Again, the remaining students reported a response of "don't know." One might therefore extrapolate from these data that colleges and universities, either

Figure 51. Distribution of availability of alcohol and perceptions of campus alcohol problem; all drinking respondents.



intentionally or unintentionally, are conveying mixed messages to their students concerning the tolerance of drugs on their campuses.

Although 53.9% of MIRM recent marijuana users reported using the substance only on special occasions, 42.1% of recent marijuana users have tried to stop using drugs. Further, 36.4 percent would like to use drugs less than they do now. With little doubt, these data suggest a potentially serious drug problem for MIRM students. Although recent marijuana users desire to decrease their drug use, and/or have tried to decrease their drug use, drug use continues. These behaviors are symbolic of addictive drug use.

Almost equally as many recent marijuana users reported they would attend a student sponsored program as would not (49.4 % for the former and 50.6% for the latter). However, only 27.5% of recent marijuana users were willing to attend a church-sponsored drug program, while 45.6% were willing to attend a school-sponsored program. Among recent users of marijuana, 20.9% felt their campus drug policy was too strigent; 11.8% felt their campus drug policy was too lenient; and 38.2 percent reported that their campus drug policy was adequate. The remaining students were undecided.

Cocaine

Among cocaine users, 65.7% reported that they are familiar with their campus drug policies, 23.9% responded "don't know" and only 10.4% were reported to be unfamiliar with drug policies on their campus. Yet, knowledge about campus drug policies failed to deter the use of drugs. Further, 54.5% of cocaine users reported that school policies are sufficient reason not to use cocaine. This lack of congruency between cocaine users cognitions and behavior paints a bleak future for curtailing the use of cocaine. The prognosis for reducing cocaine use is further complicated by students' perception that drug use is accepted behavior for campus. Fifty-three percent of MIRM recent cocaine users reported that drugs are accepted on their campus. Consequently, students may interpret lack of reporting drug use by peers, and residential life staff (Boyer, 1987), coupled with perceived lenient punishment for offenders (e.g. athletes) as contradicting campus drug policies. Therefore, it is no surprise that 47% of cocaine users agree that their campus drug policies are adequate while only 10.6% disagree. The remaining respondents were undecided.

The majority of recent cocaine users (51.6%) expressed a desire to stop using drugs, and 82.4% of recent cocaine users reported that the addictive potential of drugs is sufficient reason not to use drugs. Other sufficient

reasons frequently reported by recent cocaine users for reframing from drug use include: possible health damage (83.8%) drug use interferes with relationships (71.2%) and parents object to drug use (68.3%).

Others' Prescription Drugs

Among students who reported using someone else's prescriptions, 73.7% are familiar with their campus drug policy, compared to 6.9% who are unfamiliar with their campus drug policy. The remaining students responded "don't know" when asked about their familiarity or lack of familiarity with their campus drug policy. However, 40.7% of fraudulent prescription users perceive the use of drugs as accepted behavior on their campus; 32.5% perceive drug use as unaccepted behavior on their campus, and 25.9% were undecided. Forty-eight percent of MIRM students who recently used someone else's prescription drugs reported their campus drug policies are adequate, 14% indicated that their campus policies are too lenient, 13.8% indicated their policies are too strigent, and the remaining were undecided. It is unknown whether MIRM students who consume others prescription drugs consider their behavior to be independent of drug use in its most typical form which generally refers to illegal or illicit substances. It is reasonable, however, to assume that students using prescriptions intended for another

individual perceive their behavior as problematic. Support for this supposition may be gleaned from the data which reported that approximately 59.4% of MIRM students using someone else's prescription indicated a desire to stop using drugs, and 31.5% would like to reduce their drug use.

The most frequently reported reasons not to use drugs as indicated by recent users of someone else's prescription include potential health damage (87.8%) and the effect drug use has on relationships (78%). In addition, 41.7% of students who recently used another's prescription reported that they would participate in a student sponsored drug program, 23.3% are undecided, and 35% indicate that they would not participate in a student sponsored program. Among the same population, 27% indicated that they would participate in a church-sponsored drug program, 55.5% indicated that they would not participate in a church sponsored program, and 17.5% are undecided.

Uppers.

At least a third of recent users of uppers may be motivated to participate in drug programs as a result of their desire to use less drugs than they presently use. Similarly, recent users of uppers who have tried to stop using drugs may also require less coercing to participate

in campus drug programs. Forty-eight and six tenths percent of MIRM institutions' students recent users of uppers have attempted to stop using drugs.

Generally, 70.3% of MIRM institutions' users of uppers indicated they are familiar with their campus drug policy, while approximately 9.6% indicated they are unfamiliar with their campus drug policy. The remaining students reported "don't know." Overall, MIRM respondents who have at least experimented with uppers perceive their campus drug policy to be adequate (35.8%). Fifteen percent of users of uppers reported their campus drug policy is too lenient and 15.8% reported their campus drug policy is too stringent.

Nearly 28.6% of recent users of uppers reported they would attend a student-sponsored drug program. Nearly 15% (14.6%) reported a willingness to attend a church-sponsored program, while 26.8% report a willingness to attend a college-sponsored program. Although few students indicated an interest in a church-sponsored program, MIRM schools could potentially administer a student-sponsored or college-sponsored drug program to more than a fourth of their recent users of uppers.

Hallucinogens

Among MIRM institutions' students who reported the use of hallucinogens within thirty days prior to the

administration of the survey, 35.1% have attempted to stop using drugs and 27% would like to use less drugs they they presently use. These statistics may be suggestive of an already existing catalyst for change in drug use among students. Further, among recent users of hallucinogens, 29.7% would attend a student-sponsored drug program. Approximately 2.7% of recent users of hallucinogens would attend a church-sponsored drug program, significantly less than reportedly would attend a student-sponsored or college-sponsored program (24.3% would attend the latter).

Of hallucinogen users, 65.9% are familiar with their campus drug policy, 36.3% consider their campus policy to be adequate, 22.4% consider their campus policy to be too stringent, and 13% consider their campus policy to be too lenient.

Downers

Approximately 70.4% of MIRM institution's students who recently used downers reported they have attempted to stop their use of drugs. In addition, in spite of or as a consequence of their drug use, 44.2% of recent users of downers reported a desire to use less drugs than they presently use. These statistics strongly suggest that many MIRM institution students who recently used downers may be addicted to the drugs.

MIRM institutions' students who use downers are familiar with their campus drug policies (68% vs 9% who are unfamiliar with their school's policy) and consider the policy to be adequate (33.7%). Approximately 21.8% perceive their campus policy to be too strigent and 12.6% consider their campus policy to be too lenient.

Of recent users of downers, 37.2% would attend a student-sponsored drug program, 35.6% are receptive to a drug program sponsored by a college, and 22.2% would attend a church-sponsored drug program. Regardless of their institutions' affiliation with the church, MIRM students are able to separate the institution from its church affiliation and consequently express a willingness to attend a college-sponsored drug program.

College-Sponsored Drug Program

Over two-fifths (41.8%) of all MIRM respondents reported a willingness to attend a college-sponsored drug program. Significantly more females (44.7%) than males (32.7%) indicated they would attend a college-sponsored drug program. An analysis of these respondents include the following: 24.5% of potential participants were freshman, 26.1% are sophomores, 24.5% are juniors, 23% are seniors, and 1% is some other classification. These statistics closely approximate the percentage of freshman,

sophomore, junior, and senior participants in the overall survey population (see Figure 2).

Although a smaller percentage of MIRM black respondents reported using drugs than their white (non-Hispanic) colleges, a higher percentage of black students reported a willingness to attend a college-sponsored drug program (65.1% vs 37.4%, respectively).

Approximately 3.4% of students reporting they would attend a college-sponsored drug program live off-campus, 8.4% live with parents, 69.7% live on campus, 13.8% live with a roommate off-campus, and 4.7% have some other living arrangements other than those previously described. Other descriptions of students who would attend a college drug program suggest that approximately 55.1% have tried to stop using drugs.

The drug of choice for respondents who potentially would attend a college-sponsored drug program is alcohol. However, most potential participants did not use marijuana, cocaine, or uppers during the 30 days prior. Nor did they smoke tobacco, use over-the-counter substances with high alcohol content for nonmedical purposes, use downers, inhalants, crack, designer drugs, or hallucinogens, opiates, or prescription drugs intended for someone else. Of those who used drugs other than alcohol, the drug used most prevalently during the 30 days prior to administration of the survey was smoking tobacco.

This statistic is a reflection of the higher percentage of females than males who reported a willingness to attend a college-sponsored drug program. Other drugs used during the 30 days prior to the administration of the survey by potential participants in a college-sponsored drug program are as follows: 16.7% used marijuana, 7.9% used smokeless tobacco, 3.5% used someone's prescription, 3.1% used cocaine, 2.3% used downers, 1.6% used uppers, 1.3% used hallucinogens, and 1.0% used designer drugs. Less than 1.0% of respondents reporting a willingness to attend a college-sponsored drug program used any of the other substances described in the survey.

Student-Sponsored Drug Program

Overall, 41.4% of MIRM institutions' respondents reported a willingness to attend a student-sponsored drug program. Again, however, a higher percentage of MIRM responding females indicated they would attend a student-sponsored program than did MIRM responding males (45.3% and 29.5% respectively). A higher percentage of MIRM institutions' sophomores (29.3%) reported a willingness to attend a student-sponsored drug program than any other classification.

Ethnically, 63% of blacks reported a willingness to attend a student-sponsored program. In contrast, significantly fewer white (non-Hispanic) respondents (37%)

reported the likelihood of attending a student-sponsored program. Respondents willing to attend a student-sponsored program are most likely to reside on campus. However, as was true for MIRM institutions' respondents in general, student-sponsored drug program participants use drugs primarily off campus (61.3%). Approximately 18.1% of students reporting a willingness to participate in a student-sponsored drug program use drugs primarily on campus.

The vast majority of students who report an interest in student-sponsored programs were primarily users of alcohol and abstainers from other drugs. Yet, 53.1% have attempted to stop their use of drugs. Approximately 75.0% of interested respondents identified themselves as current users of alcohol. Further, 18.2% used marijuana during the thirty days prior to administration of the survey, 3.6% used cocaine, 23.3% used smoking tobacco, 7.6% used smokeless tobacco, 3.7% used prescription drugs intended for someone else, 1.6% used hallucinogens, 1.8% used uppers, and 2.4% used downers. The remaining drugs were used by less than one percent of all MIRM institution respondents who indicated a willingness to attend a student-sponsored program.

Accuracy of Responses

The last two items, included on the survey asked, "Do you feel confident that the answers you have given accurately reflect your feelings and behavior?" and "If you answered "no" [to this question], please explain why you feel your answers do not reflect your feelings and behavior in the blank space below".

An analysis of the alcohol, marijuana, cocaine, and cigarette data (the drugs used most frequently by MIRM institutions' students) resulted in no significant difference between the total population of respondents and the population of respondents who reported their responses on the questionnaire accurately reflect their drug use behavior. For the total sample of students who reported their responses failed to accurately describe their use of drugs (approximately 6% of the total sample of respondents), the most frequently reported explanations for the lack of accuracy were (1) the survey made students appear to be drug addicts, (2) they could stop using drugs anytime they wanted and the survey did not present this response as an item, (3) during the last few weeks they stopped using drugs, and (4) their drug use was under the care of a physician.

Drug Use by College

A comparison of drug use across the seven participating schools indicated that there is a significant difference ($p < .01$) in the percentage of students who use alcohol, marijuana, cocaine, and uppers (the most frequently used substances among MIRM respondents). Results are not reported for individual institutions in an effort to conceal the identity of the six participating colleges and one university.

CHAPTER V

CONCLUSIONS, DISCUSSION, AND SUMMARY

Overall, 93% of MIRM institutions' students have used one or more potentially abusive drugs. Although experimentation with drugs does not necessarily predispose individuals to drug abuse, there appears to be physiological and sociological evidence that drug use can and does alter the normal functioning of users. Many of these alterations result initially in desired changes which reinforce the continued use of the substance or substances in question. When continued use results in social, occupational, psychological, or physical problems, drug use becomes drug abuse.

As reported in previous chapters, drug use among respondents enrolled in the seven MIRM institutions differs from campus to campus. These data are consistent with recent research which suggests that drug problems may be uniquely different in different settings, and consequently, schools should assess their individual populations and develop drug programs accordingly. Extensive analyses of individual schools is beyond the scope of this study.

Critique of the Study

Three significant limitations exist in the present study: a) no reliability analyses, (b) no direct evidence of the validity of responses, and (c) incomplete data on response rate. Additional, but less critical problems include (d) the length of time required to complete the survey, (e) the grouping of ages 20 and 21, and (f) the grouping of wine and wine coolers.

Reliability of the Survey

There were no redundant questions on the questionnaire, nor was there an opportunity to re-assess the population on which the study was completed.

Validity of the Survey

The present study was designed to maximize the validity of self-reported data. Precautions were employed to assure confidentiality, to establish rapport, to inform subjects of intent, to concentrate on recent events, and to make questions less specific. However, social pressures, psychological pressures, as well as other factors might have influenced in reporting of illegal drug use.

Response Rate

The sample might not be representative of the overall population. By necessity, the sample consisted of

students enrolled in classes which meet at a given hour on a given day. This procedure was employed to maximize the number of participants in the study.

Length of Time for the Survey

The time allotted for students to complete the survey (30 minutes) resulted in several problems. Instructors whose classes were to participate in the study were informed that the survey process included 30 minutes for completing the survey and five minutes to give instructions. Several instructors chose to lecture during the first 15 minutes of their 50-minute class. Unfortunately, in at least four cases, the instructor used 20 or more minutes of class time, thereby significantly decreasing the time available to complete the survey.

Grouping of Ages 20 and 21

The state in which the seven MIRM institutions are located has a legal drinking age of 21 years. Because ages 20 and 21 were grouped together, data are not available on the percentage of students who illegally consume alcoholic beverages.

Grouping of Wine and Wine Coolers

The grouping of wine and wine coolers into one item might result in data which inaccurately suggest a more serious drinking problem than actually exists on MIRM

campuses. Because there is a considerable difference in alcohol content in the two substances (17%-24% for the former and 5%-17% for the latter) the results for wine consumption might be misleading.

Results and Implications

The college milieu is generally perceived as an appropriate environment for furthering the maturational, intellectual, and political changes which frequently occur in individuals during adolescence and young adulthood. The use of alcohol and other drugs has been associated with this developmental period, which is characterized by experimentation and exerted independence among students. Although the majority of MIRM respondents initiated their use of abusive substances prior to enrolling in college, many perceive their campuses as accepting drug use. Only 37.2% of the students included in the present study perceive drug use as unaccepted behavior on their college campus. Limited supervision coupled with reluctance to report offenders further strengthen these perceptions.

Use of drugs among collegiates can be attributed, in part, to external environmental influences such as the work environment. However, 60% of MIRM institutions' students are unemployed, and of those employed, 46% work exclusively on campus. It therefore is safe to conclude that college, rather than a work setting, is the major

influence on the drug attitudes and habits of most responding students.

If the historical trends of the past continue, the drug problems of college students will soon become the drug problems of society at large. The drug-using behavior of college students during the late 1960's and early 1970's were suggestive of the type of drug behavior that infiltrated the general population. Consequently, what is learned about the drug-using behaviors of today's college students may result in the development of solutions to future drug-related problems.

There is a paucity of recent information available on the role of the college environment in students' drug use; and this study does not attempt to identify specific variables associated with college campuses which directly influence students' use of drugs. However, it does attempt to address students' perceptions of drug issues on their college campuses.

Alcoholic Beverages

Different drugs are used to varying degrees by MIRM institutions' students. Yet, unquestionably, alcoholic beverages are the drugs of choice among MIRM respondents. Alcohol is used by more MIRM students more frequently than any other drug examined in this study. A fourth of all responding students consume alcohol at least several times

a week, and substantial proportions of students who consume alcohol use it as a psychological crutch and experience serious psychological consequences. Specifically, beer is currently consumed by 85% of MIRM respondents, liquor is consumed by 78% of students, and wine or wine coolers are consumed by 73.4% of respondents. Because respondents' use of alcoholic beverages is diverse, MIRM colleges wishing to reduce their students' use of alcohol cannot accomplish that end by focusing their alcohol education on a single type of beverage.

Overall, male respondents tend to drink alcoholic beverages more frequently than do female respondents. However, females consume more wine or wine coolers. Consumption of alcohol increased from students' freshman year through their senior year. Other results on students' use of alcoholic beverages suggest that the higher the grade point average the less likely the respondent is to currently use alcohol. Further, the results of the study indicate that students who meet with a religious group at least occasionally consume alcoholic beverages less frequently.

Although some might consider alcohol to be the least harmful of drugs available to college students, recent laws which changed the legal drinking age from 18- to 21-years-old suggest increased concern about the problems associated with drinking. Despite this change in law, a

minimum of 49% of MIRM drinking respondents are age 19 or younger. Another 41% of MIRM drinkers reported they were between 20- and 21-years-old. This latter figure could potentially increase the known percentage of MIRM students who illegally consume alcohol beyond the previously reported 49% if the two ages (20 and 21) were reported separately. From these data it can be concluded that laws, whether established by federal or state judicial systems or by campus judicial systems, are not likely to significantly abate the use of alcohol among MIRM institutions' students. In addition, since only 14% of MIRM's drinking respondents began using alcohol in college, it would seem that programs designed to prevent or reduce alcohol use among established users might be more essential than would programs to prevent initial use of alcohol.

Tobacco Products

Use of smoking tobacco by MIRM students is far more prevalent than among college students nationally; the rate is almost twice as high among MIRM students even though they clearly expect to experience consequent health damage. Further, among MIRM smoking respondents, females were more likely to smoke than males. The opposite is true for the use of smokeless tobacco. Approximately a fourth of MIRM's smoking respondents began using tobacco products

while in college. Consequently, these data suggests a need for smoking cessation programs as well as smoking prevention programs on the MIRM campuses.

The seven schools involved in this study are located in the tobacco belt of the United States. Each of the schools has benefited in some way from the tobacco market. It is likely that special attention must be paid and a concerted effort must be made by all involved on the campuses if tobacco use is to be curtailed.

Marijuana

Recent use of marijuana among MIRM institutions' students is 13% higher than the national average for college students, as reported by Johnston, et al. (1988). The propensity of MIRM students to use marijuana may be influenced by several factors, one of which may be a general acceptance of marijuana as a somewhat benign substance compared to other illegal drugs.

Although, there is extensive use of marijuana among MIRM respondents, current marijuana use occurs more frequently among college freshmen (over 40%) than among students who have been in college more than one year, and the smallest prevalence is associated with seniors (less than a fourth). Perhaps the zealous drug testing recently implemented by employers influenced senior students' use of marijuana. These data suggest that programs designed

to reduce the use of marijuana might be most effective if they are designed for students who are just beginning their college careers.

Other Drugs

Overall, the data seem to suggest that MIRM institutions' students initiated their use of uppers, hallucinogens, inhalants, and over-the-counter products with high alcohol content prior to enrolling in college. Therefore drug programs related to students' use of these substances should focus on decreasing or eliminating students' use of these substances, as opposed to preventing their initial use. Conversely, drug programs intended for MIRM institutions' students use of cocaine and designer drugs should focus more on prevention and much less on cessation. It is worth noting that, although the majority of students initiate use of downers prior to entering college, nearly a third of students who report the use of downers initiated their use while in college. For this reason it would be equally important to include downers in drug prevention and drug cessation programs.

The vast majority of drug-experienced respondents reported an on-campus living arrangement, although 60% reported that they use drugs almost exclusively off campus. These data suggest that students' drug use might be marginally reduced through more stringent enforcement of

rules prohibiting drug use on campus, but that other means of affecting students' behavior, such as drug counseling and education, will be essential, if major reductions in drug use are to be realized.

Attitudes and Beliefs

Half the drug-experienced respondents to this survey reported a desire to stop using drugs, and more than 30 percent reported a desire to reduce their drug use. Almost half of these students expect drug use to damage their health. These statistics carry both positive and negative messages. That at least half the drug-experienced students in MIRM institutions want to reduce or eliminate their drug use provides hope that appropriate drug counseling programs might be effective. However, these statistics also suggest a high rate of drug addictive behavior among MIRM institutions' drug-experienced students, since these students continue to use drugs despite their desire to quit. It would therefore be beneficial for MIRM institutions to acquire background information on students past failures at curtailing drug use- the kinds of programs participated in, if the program was completed, etc. Such information might increase the success of present drug counseling efforts and thereby increase the credibility of the colleges' anti-drug programs.

Students in MIRM institutions endorse a wide variety of reasons to avoid the use of drugs. More than 9 in 10 cited potential health risks and potential addiction as reasons for avoidance, and almost as many recognized the threat to social relationships associated with drug use. Illegality was cited as a reason for avoiding drugs by more than eight in ten respondents, and objections of parents by almost as many. School policies were cited as drug avoidance motivators far less frequently than were addictive and health risks.

These results suggest that creation of stringent campus drug policies will likely be an insufficient response to the use of illegal and illicit drugs by students in MIRM institutions.

Almost a third of the respondents to this survey reported that drug use is "accepted" on their campus, and one in five respondents reported that there is "no drug problem" on their campus. The seemingly conflicting messages conveyed by these data might be interpreted in several ways. First, it might be the case that different subpopulations of MIRM students view drug use on their campuses as "accepted" and problematic. Second, it might be the case that a large percentage of MIRM students do not regard acceptance of drug activity on their campus as problematic.

Although a third of the respondents regarded their campus drug policies as "adequate," an almost equal number feel that the policies are either "too lenient" (19%) or "too stringent" (10%). More than a fourth of the responding students feel that their campus drug policies are insufficiently enforced, and less than ten percent feel that campus drug policies are too strictly enforced. Although students' judgments on the strictness and enforcement of their campus drug policies vary, far more of those who are not satisfied with current policies opt for stricter policies that are more strictly enforced than for greater lenience in any form.

Making drug education available on their campus is endorsed by more than two-thirds of the respondents to this survey. More than a third would have drug education required on their campus, and nearly 80% would require drug education for drug users. Only 30% of MIRM institutions' students regard drug education as ineffective. Clear policy guidance is provided by these data, particularly in the context of responses concerning campus drug policies. Students regard drug education as a far more potent weapon than strict drug policies in the fight against campus drug use.

The latter finding is further supported by data on students' willingness to participate in drug education programs. Between 32% and 56% of responding students

expressed willingness to engage in some form of drug education, depending on its sponsorship. Over a fourth would join a student organization that sought to reduce or eliminate drug use at MIRM institutions.

More than four in five endorse provision of peer counseling, and only 13% express opposition to the provision of professional drug counseling. It is noteworthy that over a fourth of the respondents endorse the use of at least limited drug screening on their campuses.

Drug education and drug counseling are regarded by responding students as most likely to be effective and valued in the fight against drug use. Although a number of respondents suggested the imposition of stricter campus drug policies, together with stricter enforcement of existing policies, these measures alone are unlikely to produce significant reductions in students' drug use.

Recommendations for Drug Programs

Several suggestions are made for those involved with the development and implementation of drug programs on college campuses. Foremost in importance is the termination of present intentional or unintentional messages of acceptance of drug-using behavior. Ads in student newspapers and on student bulletin boards facilitate drinking. It is further suggested that the rules of drug

use be conveyed to students very explicitly. Although policies alone might not significantly deter drug use, policies combined with drug education and counseling may prove beneficial in reducing students' drug-using behavior.

Drug programs should be developed which address the needs of a school's population based on an assessment of that population. National statistics can then be used for comparisons of the populations but not as a basis for the school's drug program. These programs should then be evaluated regularly and modified accordingly.

Upon students' enrollment in the campus drug program, counselors should acquire background information concerning the student's past attempts to terminate drug use. This information might help prevent students from failing with their next effort to cease using drugs and further provide credibility to the college drug program. In addition, drug programs should focus on the three major drugs used by students willing to participate in a college-sponsored drug program -- alcohol, marijuana, and smoking tobacco (although not to the exclusion of other drugs used by their students).

It is also recommended that advertisements about college drug programs stress confidentiality and that counselors trained in drug abuse intervention be employed for drug programs. Further, a campus policy which

provides that no punitive actions will be taken against students seeking treatment for substance abuse, and that information acquired during treatment may not be used against the student in the future, is strongly suggested.

Independent vs Public Institutions

Results from the present study not only indicate that drug use in independent colleges and universities differs from drug use among college students overall, but further indicate that drug use among students in different independent institutions differ significantly ($p < .05$). MIRM institutions students' use of alcoholic beverages, tobacco, and marijuana differ from institution to institution. In addition, MIRM respondents differ in their use of these substances from general combined public and independent college students' use of these substances. These results suggest that data must be acquired exclusively from students enrolled in independent colleges and universities to accurately report drug use among this population.

Instrument

Because the survey instrument appears to be valid (93% of respondents reported that their responses on the survey accurately reflected their feelings and behaviors) other independent postsecondary institutions have a readily available instrument with which to assess their campus

drug problems. However, the reliability of the instrument is not known. Assessment of reliability will have to be deferred to future replications of this study.

The methodology used in collecting and analyzing the present data can be replicated by other postsecondary institutions. Data from those studies can then be used as baseline data for future evaluations of individual campus drug programs. In addition, institutions similar to those included in the present study will have the option of comparing their results to those contained in this report.

Concluding Comments

In conclusion, parents, students, administrators, and society at large must be resigned to the fact that drug use is a manifestation of other problems. The data in this study provide evidence that many students use drugs to help combat emotional pain, to ease inhibitions, to be sociable, to relax, to feel good, and to celebrate. Western society's philosophy of a "quick fix" has contributed to extensive drug use among college students. However, just as there are no panaceas for personal and interpersonal problems, there are no panaceas for college students' drug problems. Recent governmental regulations which require postsecondary schools receiving governmental funding to have substance abuse programs have provided a

fresh catalyst for colleges and universities to assess their campus drug issues. However, only through appropriate, monitored interventions can we hope to curtail and eventually eradicate drug use among college students.

Even though percentage of use for some of the more serious drugs appears statistically small, nevertheless, use is a problem. The extent to which the abuse of a substance occurs on a campus is a serious problem remains an open question.

Recommendations for Future Research

The first major recommendation for future studies is an evaluation of the influence of the college milieu on college students' use of drugs.

Second, in future assessments of drug use and attitudes of college students, it would be helpful to identify students who have participated in drug programs in the past. These students can contribute information based on experienced participation in drug programs. These data may be significantly different from those acquired from students who have never participated in a drug intervention program.

Greater use of positive response alternatives to questionnaire items should be considered. These data may

provide valuable information on needs students perceive to be met from their use of drugs.

Finally, it is recommended that a national survey of independent colleges and universities be conducted to assess drug use among this population.

Summary

The present study was intended to provide data which will be used to evaluate and implement substance abuse programs on the MIRM institutions' campuses.

Although use of illegal or illicit drugs by students in MIRM institutions occurs far less frequently than use of alcohol, the use of marijuana during the 30 days preceding the survey was reported by more than a third of the respondents. Drug-experienced students' reports of their reasons for drug use and their reports of consequential psychological effects suggest potential addiction by as many as one in five of these students, and interference with the principal missions of the colleges they attend for about 30% of these students.

Several of the results found were consistent with prior literature on drug use. More than a third of drinking respondents had a family member who had a problem with alcohol. Further, students who currently use drugs are less likely to regularly meet with a religious group (Hawkins, Lisner, & Catalano, 1985) and have lower

grade-point-averages (Spivack, 1983) than students who do not currently use drugs.

The three major drugs used by students willing to participate in a college-sponsored drug program, in order of prevalence, are alcohol, marijuana, and smoking tobacco. As indicated earlier, a general profile of students who report willingness to participate in a college-sponsored drug program suggest that nearly 70% live on campus and most have tried to stop using drugs or desire to reduce their present use of drugs. Therefore, it would seem that these students have ready access to a campus drug program and are motivated to change their drug-using behavior.

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Washington, DC.

APPENDIX A
QUESTIONNAIRE & ANSWER SHEET

INSTRUCTIONS: A Research Assistant will hand you a large envelope containing a Survey Questionnaire, a computer-scoreable Answer Sheet, and a Number 2 Pencil.

When you are told to begin, please answer each question on the Survey Questionnaire by completely darkening the corresponding bubble on the Answer Sheet with the Number 2 Pencil. Find the response bubbles for Question 1 before you begin, and make sure you are marking the correct section of the Answer Sheet as you work through the Survey Questionnaire. When you have completed the Survey Questionnaire, return it to the large envelope, together with your Answer Sheet.

The following questions ask for information about you. The information you provide will be used only for purposes of statistical analysis, and will be held in strict confidence. Completely darken the bubble on the Answer Sheet corresponding to your response to each question.

1. What was your age on your last birthday?
 - A. Under 18
 - B. 18-19
 - C. 20-21
 - D. 22-25
 - E. 26 or older

2. What is your gender?
 - A. Male
 - B. Female

3. What is your current academic classification in college?
 - A. Freshman
 - B. Sophomore
 - C. Junior
 - D. Senior
 - E. Other

4. Which of the following racial/ethnic groups best describes your origin?
 - A. American Indian
 - B. Asian or Pacific Islander
 - C. Black or Afro-American
 - D. Hispanic
 - E. White or Caucasian, non-Hispanic

5. **What is your current marital status?**
 - A. Single, never married
 - B. Married
 - C. Separated
 - D. Divorced
 - E. Widowed

6. **What are your current living arrangements?**
 - A. Alone off campus
 - B. With parent(s)
 - C. Dormitory
 - D. With roommates
 - E. Other

7. **What is your current employment status?**
 - A. Not employed
 - B. Employed part-time (less than 30 hours per week)
 - C. Employed full-time (at least 30 hours per week)

8. **Where are you employed?**
 - A. Not employed
 - B. On campus
 - C. Off campus
 - D. Both on and off campus

9. **Have you lived in North Carolina for at least three of the five years prior to entering your current college?**
 - A. Yes
 - B. No

10. **In which region of the country have you lived for most of the five years prior to entering your current college?**
 - A. Northeast
 - B. Southeast
 - C. Midwest (Central)
 - D. West
 - E. Other

11. **What is the population of the town/city where you lived for at least three of the five years prior to entering your current college?**
 - A. 100,000 or more
 - B. 50,000 to 99,999
 - C. 15,000 to 49,999
 - D. 5,000 to 14,999
 - E. Less than 5,000

The following questions ask for information about use of tobacco. The information you provide will be used only for purposes of statistical analysis, and will be held in strict confidence. Completely darken the bubble on the Answer Sheet corresponding to each question.

12. **Do you smoke tobacco (cigarettes, cigars, pipe)?**
A. Yes
B. No
13. **Do you use smokeless tobacco (snuff, chewing tobacco)?**
A. Yes
B. No
14. **When did you begin smoking tobacco?**
A. I have never smoked tobacco.
B. Elementary School
C. Junior High
D. Senior High
E. College
15. **When did you first use smokeless tobacco?**
A. I have never used smokeless tobacco.
B. Elementary School
C. Junior High
D. Senior High
E. College

IF YOU ANSWERED "NEVER" (A) TO BOTH QUESTIONS 14 AND 15, SKIP TO QUESTION 21. OTHERWISE, CONTINUE WITH QUESTION 16.

16. **How many cigarettes did you smoke yesterday?**
A. None
B. 1 to 10
C. 11 to 20
D. 21 to 40
E. More than 40
17. **How many times did you use smokeless tobacco yesterday?**
A. None
B. Once
C. 2 to 3 times
D. More than 3 times
18. **Do you consider or expect tobacco use to be damaging to your health?**
A. No
B. Yes, in the long run
C. Yes, I have already experienced some health effects.

19. Which of the following BEST describes your use of tobacco?
- A. I use tobacco whenever I want to.
 - B. I sometimes do not use tobacco because others dislike it.
 - C. I never use tobacco when I am aware that others are disturbed by it.
 - D. I do not use tobacco
20. Would you like to stop using tobacco?
- A. Yes
 - B. No

The following questions ask for information about consumption of alcohol. The information you provide will be used only for purposes of statistical analysis and will be held in strict confidence. Completely darken the bubble on the Answer Sheet corresponding to your response to each question.

21. Have you ever consumed alcoholic beverages?
- A. Yes
 - B. No
22. Do you currently drink alcoholic beverages?
- A. Yes
 - B. No

IF YOU ANSWERED "NO" (B) TO BOTH QUESTIONS 21 AND 22, SKIP TO QUESTION 82. OTHERWISE, CONTINUE WITH QUESTION 23.

23. When did you first begin drinking alcoholic beverages?
- A. I have never had an alcoholic beverage.
 - B. Elementary School
 - C. Junior High School
 - D. Senior High School
 - E. College
24. Do you ever drink beer?
- A. Yes
 - B. No

IF YOU ANSWERED "NO" (B) TO QUESTION 24, SKIP TO QUESTION 28. OTHERWISE, CONTINUE WITH QUESTION 25.

25. Have you consumed any beer within the last month?
- A. Yes
 - B. No

IF YOU ANSWERED "NO" (B) TO QUESTION 25, SKIP TO QUESTION 28. OTHERWISE, CONTINUE WITH QUESTION 26.

26. On how many separate occasions during the past WEEK did you consume beer?
- A. None
 - B. 1 or 2
 - C. 3 or 4
 - D. 5 or 6
 - E. More than 6
27. How many beers do you usually drink AT ONE TIME? (12 oz. = 1 beer)
- A. 1 or 2
 - B. 3 or 4
 - C. 5 or 6
 - D. More than 6
28. Do you drink wine or wine coolers?
- A. Yes
 - B. No

IF YOU ANSWERED "NO" (B) TO QUESTION 28, SKIP TO QUESTION 31. OTHERWISE, CONTINUE WITH QUESTION 29.

29. On how many separate occasions during the past WEEK did you drink wine or wine coolers?
- A. None
 - B. 1 or 2
 - C. 3 or 4
 - D. 5 or 6
 - E. More than 6
30. How many glasses of wine or wine cooler do you usually drink AT ONE TIME? (6 oz. = 1 glass)
- A. 1 or 2
 - B. 3 or 4
 - C. 5 or 6
 - D. More than 6
31. Do you drink liquor?
- A. Yes
 - B. No

**IF YOU ANSWERED "NO" (B) TO QUESTION 31, SKIP TO QUESTION 34.
OTHERWISE CONTINUE WITH QUESTION 32.**

32. **On how many separate occasions during the past WEEK did you consume liquor?**
- A. None
 - B. 1 or 2
 - C. 3 or 4
 - D. 5 or 6
 - E. More than 6
33. **How many drinks containing liquor do you usually drink AT ONE TIME?**
(1 oz. of liquor = 1 drink)
- A. 1 or 2
 - B. 3 or 4
 - C. 5 or 6
 - D. More than 6
34. **Which of the following BEST describes your drinking of alcoholic beverages?
(MARK ONLY ONE)**
- A. I drink alcohol only on special occasions.
 - B. I drink alcohol only on weekends.
 - C. I drink alcohol several times during a typical week.
 - D. I drink alcohol almost every day.
 - E. I drink alcohol daily.
35. **Which of the following BEST describes the people with whom you drink
alcoholic beverages? (MARK ONLY ONE)**
- A. I drink only when I am alone.
 - B. I drink mainly when I am alone.
 - C. I drink only when I am with others.
 - D. I drink mainly when I am with others.
36. **Typically, where do you consume the most alcohol?**
- A. At my place of residence
 - B. In restaurants
 - C. In bars
 - D. At social gatherings
 - E. At other places
37. **In general, where would you say you consume more alcohol?**
- A. On campus
 - B. Off campus
 - C. Equally, on and off campus

It is generally recognized that people drink alcohol for a variety of reasons. Please fill in bubble A on your Answer Sheet for "never", bubble B for "occasionally", bubble C for "regularly", bubble D for "often" and bubble E for "very often" for each of the following statements, as they apply to you.

38. I drink alcohol to sharpen my senses. (e.g. sight, touch)
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very Often (4 or more times a week)
39. I drink alcohol to think better.
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
40. I drink alcohol to be sociable.
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
41. I drink alcohol to sleep better.
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
42. I drink alcohol to get "high."
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
43. I drink alcohol to feel good.
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)

44. **I drink alcohol to enjoy the taste.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
45. **I drink alcohol to relax.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
46. **I drink alcohol to relieve boredom.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
47. **I drink alcohol to "fit in" with others.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
48. **I drink alcohol to improve my sex life.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
49. **I drink alcohol to ease inhibitions.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
50. **I drink alcohol to celebrate.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)

51. **I drink alcohol to ease emotional pain.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
52. **I drink alcohol to keep going.**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)

The following situations are often experienced by persons who consume alcohol. Please fill in bubble A on your answer sheet for "never," B for "only once," C for "2 or 3 times" and D for "4 or more times" for each of the following questions as they apply to you.

53. **Have you ever had conflicts with family members as a result of your alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
54. **Have you ever had conflicts with friends as a result of your alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
55. **Have you ever had conflicts with a significant other (boyfriend/girlfriend, spouse) as a result of your alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
56. **Have you ever had conflicts with teachers, professors, or other educational personnel as a result of your alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times

57. **Have you ever attended class under the influence of alcohol?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
58. **Have you ever missed a class as a result of your alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
59. **Have you ever earned falling/failing grades as a result of your alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
60. **Have you ever had a vehicle-related incident while under the influence of alcohol?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
61. **Have you ever experienced legal difficulties related to damage to property as a result of alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
62. **Have you ever experienced other legal difficulties as a result of alcohol use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
63. **Have you ever engaged in sexual activity that you would not have engaged in, had you not been drinking?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times

 Use of alcohol produces a variety of physical and psychological effects for different people. Please fill in bubble A on your Answer Sheet for "yes" or bubble B for "no" or bubble C for "don't know" for each of the following questions as they apply to you.

As a result of your alcohol use have you ever experienced:

- | | | | |
|---|--------|-------|---------------|
| 64. Diarrhea? | A. Yes | B. No | C. Don't know |
| 65. A hangover? | A. Yes | B. No | C. Don't know |
| 66. Loss of memory? | A. Yes | B. No | C. Don't know |
| 67. A change in appetite
(increase or decrease)? | A. Yes | B. No | C. Don't know |
| 68. The "shakes"? | A. Yes | B. No | C. Don't know |
| 69. Vomiting? | A. Yes | B. No | C. Don't know |
| 70. Sleep disturbance
(too little or too much)? | A. Yes | B. No | C. Don't know |
| 71. Blackouts? | A. Yes | B. No | C. Don't know |
| 72. A loss of sexual
performance? | A. Yes | B. No | C. Don't know |
| 73. Periods of mental
sharpness? | A. Yes | B. No | C. Don't know |
| 74. Periods of increased
nervousness? | A. Yes | B. No | C. Don't know |
| 75. Periods of depression? | A. Yes | B. No | C. Don't know |
| 76. Periods of being
withdrawn? | A. Yes | B. No | C. Don't know |
| 77. Difficulty
concentrating
in class? | A. Yes | B. No | C. Don't know |
| 78. Difficulty
remembering
information? | A. Yes | B. No | C. Don't know |

Your opinions about alcohol use are important. The information you provide will be used **only** for purposes of statistical analysis, and will be held in strict confidence. Completely darken the bubble on the Answer Sheet corresponding to your response to each question.

79. Do you consider or expect your alcohol use to be damaging to your health?
- A. No
 - B. Yes, in the long run
 - C. Yes, I have already experienced some effects.
80. Would you like to consume **LESS** alcohol than you are currently using?
- A. Yes
 - B. No
81. Have you ever attempted to **STOP** consuming alcohol?
- A. Yes
 - B. No
82. Do you believe students' alcohol use on your college campus is a cause for concern?
- A. Yes
 - B. No
83. Is alcohol more or less available to you now than it was before you came to college?
- A. More available
 - B. Less available
 - C. About the same
 - D. Don't know
84. Has any member of your family ever had any kind of difficulties related to his/her alcohol consumption?
- A. Yes
 - B. No
 - C. Don't know

 The following questions ask for information about use of other drugs: marijuana, cocaine, hallucinogens, uppers, downers, inhalants, opiates, designer drugs, prescription drugs, and over-the-counter substances with a high alcohol content. The information that you provide will be used **only** for purposes of statistical analysis, and will be held in strict confidence. Please fill in bubble **A** on your Answer Sheet for "yes" or bubble **B** for "no" for each of the following statements as they apply to you.

Have you EVER used:

- | | | |
|---|--------|-------|
| 85. Marijuana (hash, hashish)? | A. Yes | B. No |
| 86. Cocaine? | A. Yes | B. No |
| 87. Crack? | A. Yes | B. No |
| 88. Hallucinogens (LSD, mushrooms, PCP)? | A. Yes | B. No |
| 89. Uppers (amphetamines, speed)? | A. Yes | B. No |
| 90. Downers (xanax, valium, barbiturates, tranquilizers)? | A. Yes | B. No |
| 91. Inhalants (glue, paint thinner)? | A. Yes | B. No |
| 92. Opiates (heroin, morphine)? | A. Yes | B. No |
| 93. Designer Drugs (fentanyl)? | A. Yes | B. No |
| 94. Prescription drugs prescribed for someone else? | A. Yes | B. No |
| 95. Over-the-counter substances with high alcohol content for nonmedical reasons? | A. Yes | B. No |

IF YOU ANSWERED "NO" (B) TO EVERY QUESTION BETWEEN 85-95, SKIP TO QUESTION 165. OTHERWISE, CONTINUE WITH QUESTION 96.

Have you used any of the following in the PAST MONTH?

- | | | |
|-------------------------------|--------|-------|
| 96. Marijuana (hash, hashish) | A. Yes | B. No |
| 97. Cocaine | A. Yes | B. No |
| 98. Crack | A. Yes | B. No |

- | | | |
|---|--------|-------|
| 99. Hallucinogens
(LSD, mushrooms, PCP) | A. Yes | B. No |
| 100. Uppers (amphetamines,
speed) | A. Yes | B. No |
| 101. Downers (xanax, valium,
barbiturates, tranquilizers) | A. Yes | B. No |
| 102. Inhalants (glue,
paint thinner) | A. Yes | B. No |
| 103. Opiates (heroin, morphine) | A. Yes | B. No |
| 104. Designer Drugs (fentanyl) | A. Yes | B. No |
| 105. Prescription drugs
prescribed for someone else | A. Yes | B. No |
| 106. Over-the-counter substances
with high alcohol content
for nonmedical reasons? | A. Yes | B. No |

When did you FIRST use the following drugs?

107. **Marijuana (hash, hashish)**
 A. I have never used marijuana (hash, hashish).
 B. Elementary School
 C. Junior High
 D. Senior High
 E. College
108. **Cocaine**
 A. I have never used cocaine.
 B. Elementary School
 C. Junior High
 D. Senior High
 E. College
109. **Crack**
 A. I have never used crack.
 B. Elementary School
 C. Junior High
 D. Senior High
 E. College
110. **Hallucinogens (LSD, mushrooms, PCP)**
 A. I have never used hallucinogens (LSD, mushrooms, PCP).
 B. Elementary School
 C. Junior High
 D. Senior High
 E. College

111. **Uppers (amphetamines, speed)**
A. I have never used uppers (amphetamines, speed).
B. Elementary School
C. Junior High
D. Senior High
E. College
112. **Downers (xanax, valium, barbiturates, tranquilizers)**
A. I have never used downers (xanax, valium, barbiturates, tranquilizers.)
B. Elementary School
C. Junior High
D. Senior High
E. College
113. **Inhalants (glue, paint thinner)**
A. I have never used inhalants (glue, paint thinner).
B. Elementary School
C. Junior High
D. Senior High
E. College
114. **Opiates (heroin, morphine)**
A. I have never used opiates (heroin, morphine).
B. Elementary School
C. Junior High
D. Senior High
E. College
115. **Designer Drugs (fentanyl)**
A. I have never used designer drugs (fentanyl).
B. Elementary School
C. Junior High
D. Senior High
E. College
116. **Prescription drugs prescribed for someone else**
A. I have never used prescription drugs prescribed for someone else.
B. Elementary School
C. Junior High
D. Senior High
E. College
117. **Over-the-counter substances with high alcohol content for nonmedical reasons**
A. I have never used over-the-counter substances with high alcohol content for nonmedical reasons.
B. Elementary School
C. Junior High
D. Senior High

E. College

 It is generally recognized that people use drugs identified in the above lists for a variety of reasons. Please fill in bubble A on your Answer Sheet for "never," bubble B for "occasionally," bubble C for "regularly," bubble D for "often" and bubble E for "very often" for each of the following questions as they apply to you.

I use drugs to:**118. Sharpen my senses? (e.g. sight, touch)**

- A. Never
- B. Occasionally (less than once every two weeks)
- C. Regularly (between once every two weeks and once a week)
- D. Often (2 or 3 times a week)
- E. Very often (4 or more times a week)

119. Think better?

- A. Never
- B. Occasionally (less than once every two weeks)
- C. Regularly (between once every two weeks and once a week)
- D. Often (2 or 3 times a week)
- E. Very often (4 or more times a week)

120. Be sociable?

- A. Never
- B. Occasionally (less than once every two weeks)
- C. Regularly (between once every two weeks and once a week)
- D. Often (2 or 3 times a week)
- E. Very often (4 or more times a week)

121. Sleep better?

- A. Never
- B. Occasionally (less than once every two weeks)
- C. Regularly (between once every two weeks and once a week)
- D. Often (2 or 3 times a week)
- E. Very often (4 or more times a week)

122. Get "high"?

- A. Never
- B. Occasionally (less than once every two weeks)
- C. Regularly (between once every two weeks and once a week)
- D. Often (2 or 3 times a week)
- E. Very often (4 or more times a week)

123. Feel good?

- A. Never
- B. Occasionally (less than once every two weeks)
- C. Regularly (between once every two weeks and once a week)
- D. Often (2 or 3 times a week)

- E. Very often (4 or more times a week)
124. **Enjoy the taste?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
125. **Relax?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
126. **Relieve boredom?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
127. **"Fit in" with others?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
128. **Improve my sex life?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
129. **Ease inhibitions?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
130. **Celebrate?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)

131. **Ease emotional pain?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)
132. **Keep going?**
- A. Never
 - B. Occasionally (less than once every two weeks)
 - C. Regularly (between once every two weeks and once a week)
 - D. Often (2 or 3 times a week)
 - E. Very often (4 or more times a week)

The following situations are often experienced by persons who use drugs identified in the above lists. Please fill in bubble A on your Answer Sheet for "never," B for "only once," C for "2 or 3 times" and D for "4 or more times" for each of the following questions as they apply to you.

133. **Have you ever had conflicts with family members as a result of your drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
134. **Have you ever had conflicts with friends as a result of your drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
135. **Have you ever had conflicts with a significant other (boyfriend/girlfriend, spouse) as a result of your drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
136. **Have you ever had conflicts with teachers, professors, or other educational personnel as a result of your drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times

137. **Have you ever attended class under the influence of drugs?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
138. **Have you ever missed a class as a result of drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
139. **Have you ever earned falling/failing grades as a result of drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
140. **Have you ever had a vehicle-related incident while under the influence of drugs?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
141. **Have you ever done damage to property as a result of drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
142. **Have you ever experienced legal difficulties as a result of drug use?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times
143. **Have you ever engaged in sexual activity as a result of your drug use that you would not have engaged in had you not been using drugs?**
- A. Never
 - B. Yes, only once
 - C. Yes, 2 or 3 times
 - D. Yes, 4 or more times

 There are many physical and psychological results of drug use. Please fill in bubble A on your Answer Sheet for "yes" or B for "no" or C for "don't know" for each of the following questions as they apply to you.

As a result of your drug use, have you experienced:

- | | | | |
|---|--------|-------|---------------|
| 144. Diarrhea? | A. Yes | B. No | C. Don't know |
| 145. A hangover? | A. Yes | B. No | C. Don't know |
| 146. Loss of memory? | A. Yes | B. No | C. Don't know |
| 147. A change in appetite
(increase or decrease)? | A. Yes | B. No | C. Don't know |
| 148. The shakes? | A. Yes | B. No | C. Don't know |
| 149. Vomiting? | A. Yes | B. No | C. Don't know |
| 150. Sleep disturbance
(too little or too much)? | A. Yes | B. No | C. Don't know |
| 151. Blackouts? | A. Yes | B. No | C. Don't know |
| 152. A loss of sexual
performance? | A. Yes | B. No | C. Don't know |
| 153. Periods of mental
sharpness? | A. Yes | B. No | C. Don't know |
| 154. Periods of depression | A. Yes | B. No | C. Don't know |
| 155. Periods of being withdrawn? | A. Yes | B. No | C. Don't know |
| 156. Difficulty concentrating
in class? | A. Yes | B. No | C. Don't know |
| 157. Difficulty remembering
information? | A. Yes | B. No | C. Don't know |
| 158. Which of the following BEST describes your use of drugs? (MARK ONLY ONE) | | | |
| A. I use drugs only on special occasions. | | | |
| B. I use drugs mostly on weekends. | | | |
| C. I use drugs several times during a typical week. | | | |
| D. I use drugs almost every day. | | | |
| E. I use drugs daily. | | | |

159. Which of the following BEST describes the people with whom you use drugs?
(MARK ONLY ONE)
- A. I use drugs only when I am alone.
 - B. I use drugs mainly when I am alone.
 - C. I use drugs only when I am with others.
 - D. I use drugs mainly when I am with others.
160. Typically, where do you use the most drugs?
- A. At my place of residence
 - B. In restaurants
 - C. In bars
 - D. At social gatherings
 - E. At other places
161. In general, where would you say you use more drugs?
- A. On campus
 - B. Off campus
 - C. Equally on and off campus
162. Do you consider or expect your drug use to be damaging to your health?
- A. No
 - B. Yes, in the long run
 - C. Yes, I have already experienced some effects
163. Would you like to use drugs less frequently than you are currently using them?
- A. Yes
 - B. No
164. Have you ever tried to STOP using drugs?
- A. Yes
 - B. No

 People do not use drugs for a variety of reasons. Please fill in bubble A on your Answer Sheet for "yes" or bubble B for "no" for each of the following questions as they apply to you.

Do you believe any of the following are sufficient reasons NOT to use drugs?

- | | | |
|--|--------|-------|
| 165. You might become addicted. | A. Yes | B. No |
| 166. Drugs are illegal. | A. Yes | B. No |
| 167. Drugs are harmful to your health. | A. Yes | B. No |
| 168. Drug use interferes with relationships. | A. Yes | B. No |
| 169. Your parents object to your drug use. | A. Yes | B. No |

179. **Drug education should be available on campus but should not be required.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

180. **Current campus drug policy is adequate to meet the needs of the campus.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

181. **Current drug policies on my campus are too stringent.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

182. **Current drug policies on my campus are too lenient.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

183. **Current drug policies on my campus are too strictly enforced.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

184. **Current drug policies on my campus are not enforced enough.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

185. **Drug education is not effective in curtailing drug use among students.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

186. **A college drug program should not include professional drug counseling.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

187. **Drug policies on my campus should be revised to include drug screening in some cases.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

188. **Drug use on my campus is a problem.**

A	B	C	D	E
Strongly Agree	Agree	Don't know	Disagree	Strongly Disagree

Use of tobacco, alcohol, and drugs is an individual decision and each person must decide for him/herself. The information you provide will be used only for purposes of statistical analysis, and will be held in strict confidence. Completely darken the bubble on the Answer Sheet corresponding to your response to each question.

189. **Would you join a student organization whose purpose was to reduce drug use on your campus?**
A. Yes
B. No
C. Undecided
190. **Would you attend a student-sponsored program on drug use?**
A. Yes
B. No
C. Undecided
191. **Would you attend a church-sponsored program on drug use?**
A. Yes
B. No
C. Undecided
192. **Would you attend a college-sponsored program on drug use?**
A. Yes
B. No
C. Undecided
193. **Would you take a for-credit course on drugs?**
A. Yes
B. No
C. Undecided
194. **Do you meet with a religious group?**
A. Yes, once a week
B. Yes, several times a month
C. Yes, occasionally
D. No, not as a rule
E. No, never
195. **What is your grade point average (GPA)?**
A. 3.5-4.0 (A or A-)
B. 2.5-3.4 (B+ to B-)
C. 1.5-2.4 (C+ to C-)
D. 0.5-1.4 (D+ to D-)
E. 0.5 (F)
196. **Do you feel confident that the answers you have given accurately reflect your feelings and behaviors?**
A. Yes
B. No

197. IF YOU ANSWERED "NO" (B) TO QUESTION 196, PLEASE EXPLAIN WHY YOU FEEL YOUR ANSWERS DO NOT REFLECT YOUR FEELINGS AND BEHAVIORS IN THE BLANK SPACE BELOW.

PLACE THE QUESTIONNAIRE AND YOUR ANSWER SHEET IN THE LARGE ENVELOPE WITH THE ANSWER SHEET ON TOP OF THE QUESTIONNAIRE. PLEASE BE CAREFUL NOT TO FOLD OR BEND THE ANSWER SHEET.

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

**DO
NOT
WRITE
IN
SHADED
AREA**

101	A	B	C	D	E	111	A	B	C	D	E
102	A	B	C	D	E	112	A	B	C	D	E
103	A	B	C	D	E	113	A	B	C	D	E
104	A	B	C	D	E	114	A	B	C	D	E
105	A	B	C	D	E	115	A	B	C	D	E
106	A	B	C	D	E	116	A	B	C	D	E
107	A	B	C	D	E	117	A	B	C	D	E
108	A	B	C	D	E	118	A	B	C	D	E
109	A	B	C	D	E	119	A	B	C	D	E
110	A	B	C	D	E	120	A	B	C	D	E
111	A	B	C	D	E	121	A	B	C	D	E
112	A	B	C	D	E	122	A	B	C	D	E
113	A	B	C	D	E	123	A	B	C	D	E
114	A	B	C	D	E	124	A	B	C	D	E
115	A	B	C	D	E	125	A	B	C	D	E
116	A	B	C	D	E	126	A	B	C	D	E
117	A	B	C	D	E	127	A	B	C	D	E
118	A	B	C	D	E	128	A	B	C	D	E
119	A	B	C	D	E	129	A	B	C	D	E
120	A	B	C	D	E	130	A	B	C	D	E
121	A	B	C	D	E	131	A	B	C	D	E
122	A	B	C	D	E	132	A	B	C	D	E
123	A	B	C	D	E	133	A	B	C	D	E
124	A	B	C	D	E	134	A	B	C	D	E
125	A	B	C	D	E	135	A	B	C	D	E
126	A	B	C	D	E	136	A	B	C	D	E
127	A	B	C	D	E	137	A	B	C	D	E
128	A	B	C	D	E	138	A	B	C	D	E
129	A	B	C	D	E	139	A	B	C	D	E
130	A	B	C	D	E	140	A	B	C	D	E
131	A	B	C	D	E	141	A	B	C	D	E
132	A	B	C	D	E	142	A	B	C	D	E
133	A	B	C	D	E	143	A	B	C	D	E
134	A	B	C	D	E	144	A	B	C	D	E
135	A	B	C	D	E	145	A	B	C	D	E
136	A	B	C	D	E	146	A	B	C	D	E
137	A	B	C	D	E	147	A	B	C	D	E
138	A	B	C	D	E	148	A	B	C	D	E
139	A	B	C	D	E	149	A	B	C	D	E
140	A	B	C	D	E	150	A	B	C	D	E
141	A	B	C	D	E	151	A	B	C	D	E
142	A	B	C	D	E	152	A	B	C	D	E
143	A	B	C	D	E	153	A	B	C	D	E
144	A	B	C	D	E	154	A	B	C	D	E
145	A	B	C	D	E	155	A	B	C	D	E
146	A	B	C	D	E	156	A	B	C	D	E
147	A	B	C	D	E	157	A	B	C	D	E
148	A	B	C	D	E	158	A	B	C	D	E
149	A	B	C	D	E	159	A	B	C	D	E
150	A	B	C	D	E	160	A	B	C	D	E

200 ITEM ANSWER SHEET
 SIDE 2
 PLEASE USE A NO. 2 PENCIL ONLY.
 MAKE HEAVY BLACK MARKS THAT FILL THE CIRCLE COMPLETELY.
 DO NOT MAKE ANY STRAY MARKS ON THIS ANSWER SHEET.
 MAKE ALL ERASURES CLEANLY.
 EXAMPLES: PROPER MARK ● IMPROPER MARKS ○

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40	A	B	C	D	E	50	A	B	C	D	E

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APPENDIX B
LETTER TO FACULTY

Dear

As a member of the Independent College Association, College is participating in an important research study sponsored by the United States Department of Education. The study will provide crucial information about college students' use of and opinions about tobacco, alcohol and drugs. The results of the study will be used to evaluate and design more effective drug policies and programs at colleges throughout the region. It is very important that we test the instrument before the census survey is administered in the fall. Consequently, an initial survey will be conducted during the week of April 18th.

Your class has been randomly selected to take the questionnaire during the 11 o'clock period on Monday, April 18th. A doctoral student from the University of North Carolina at Greensboro will administer the questionnaire to your class. It will take approximately 45 minutes for students to complete the survey instrument and to answer a "follow-up" sheet. You will need to be absent from the classroom while the students answer the questionnaire.

We realize that participating in this survey entails the loss of class time. We hope, however, that the information acquired from this initial survey will provide the premise for support programs for students experiencing drug-related problems. Please contact my office to confirm your willingness to participate in this survey.

Thank you for your assistance.

APPENDIX C
LETTER TO STUDENTS

April 14, 1988

&name&

&addl&

Dear &salutation&:

We are writing to seek your help with a project that is of major importance to students attending private colleges and universities. As a member of the Independent College Association (), College is participating in an important research study sponsored by the United States Department of Education. The study will provide crucial information about college students' use of, and opinions about, tobacco, alcohol, and drugs.

Your name was chosen randomly from the roster of seven private colleges and universities to participate in our survey. You can provide us with accurate, reliable information with complete anonymity. We are therefore asking you to invest the short time necessary to complete the questionnaire.

Your responses will be totally confidential and no identifying information will be requested during the survey. No one will interview you or ask your name. The process simply requires that you complete a questionnaire and place your results in a sealed envelope. No individual results will be reported to anyone on your campus. The results will be analyzed at the Center for Educational Research and Evaluation on the campus of the University of North Carolina at Greensboro (UNCG). Individual answer sheets will be taken directly to UNCG, and will be destroyed by the UNCG researchers, following their analysis of the data.

We cannot emphasize strongly enough the importance of your participation in this study for the development of college substance abuse programs. PICA has acquired federal funds to conduct this survey and to implement support programs where needed on private campuses.

We hope you will come to Auditorium at 5:00 p.m. on Wednesday, April 20, and complete the survey questionnaire. Refreshments will be served following the completion of the survey instrument, and a \$50 gift certificate will be given away. Thank you for your contribution.

Sincerely,

April 15, 1988

name
univ
addr
citystatezip

Dear (salutation):

We are writing to seek your help with a project that is of major importance to students attending private colleges and universities. As a member of the Independent College Association, College is participating in an important research study sponsored by the United States Department of Education. The study will provide crucial information about college students' use of, and opinions about, tobacco, alcohol, and drugs.

Your name was chosen randomly from the roster of seven private colleges and universities to participate in our survey. You can provide us with accurate, reliable information with complete anonymity. We are therefore asking you to invest the short time necessary to complete the questionnaire that accompanies this letter.

Your responses will be totally confidential and no identifying information will be requested during the survey. No one will interview you or ask your name. The process simply requires that you complete a questionnaire and place your results in the enclosed stamped, self-addressed envelope. No individual results will be reported to anyone on your campus. The results will be analyzed at the Center for Educational Research and Evaluation on the campus of the University of North Carolina at Greensboro (UNCG). Individual answer sheets will be taken directly to UNCG, and will be destroyed by the UNCG researchers, following their analysis of data.

We cannot emphasize strongly enough the importance of your participation in this study for the development of college substance abuse programs. has acquired federal funds to conduct this survey and to implement support programs where needed on private campuses.

We hope you will choose to participate in this essential research. Thank you for your contribution.

Sincerely,

(Coordinator)

APPENDIX D
LETTER OF CRITIQUE

APPENDIX E
PROCTOR LETTER OF INTRODUCTION

SAY: Hello, my name is _____ and I am here as a research assistant from UNCG. _____ College is participating in a survey of college students' use of and opinions about tobacco, alcohol, and other substances. The survey is sponsored by the U.S. Department of Education and the Independent College Association. _____ is one of seven colleges participating in the survey.

Your class was randomly selected from a roster of classes on your campus. You can provide us with accurate, reliable data with complete anonymity. Your responses will be totally confidential and no identifying information will be requested in the survey instrument. No one will interview you or ask you your name. The process simply requires that you complete a questionnaire. No individual results will be reported to anyone on your campus. The results will be analyzed at the Center for Educational Research and Evaluation on the campus of the University of North Carolina at Greensboro. Individual answer sheets will be taken directly to UNCG, and will be destroyed by the UNCG researchers, following their analysis of the data.

We cannot emphasize strongly enough the importance of your participation in this study. _____ has acquired federal funds to conduct this survey and to implement support programs where needed on private campuses. We hope you will choose to participate in this essential research.

HAND OUT THE PACKETS

SAY: Please open your packets. Check the contents of your packet.

You should have a pencil, an answer sheet, a plain sheet of paper, and a questionnaire booklet.

READ THE INSTRUCTIONS OF THE TEST BOOKLET

SAY: Please do not write your name or any other identifying information on your answer sheet. When you have completed the survey, please put all the contents back into your packets and seal the envelop. You may keep the pencil or you may return it to me.

APPENDIX F
PILOT STUDY RESULTS

Results and Conclusions

This chapter contains the results of a survey of undergraduate and continuing education students from three of seven MIRM institutions. The survey was designed to assess students' use of and opinions about tobacco, alcohol, and other drugs.

The results of this study are presented in three major sections. In the first is descriptive of the demographic composition of the respondents. The second section examines each of the following research questions: a) What drugs are used by MIRM students? (b). What quantity of drugs do MIRM students consume? (c). What is the history of drug use among MIRM students? (d). What are common characteristics shared by MIRM students who use drugs? (e). What rational do MIRM students give for using drugs? (f). Where do MIRM students use drugs? (g). With whom do MIRM students use drugs? (h). At what times do MIRM students use drugs? (i). What consequences have MIRM students experienced as a result of their drug use? (j). What attitudes and beliefs do MIRM students have about drug use? (k). How do MIRM students feel about the accuracy of responses they provided on the the survey instrument? The last section provides a summary and discussion of the the data results.

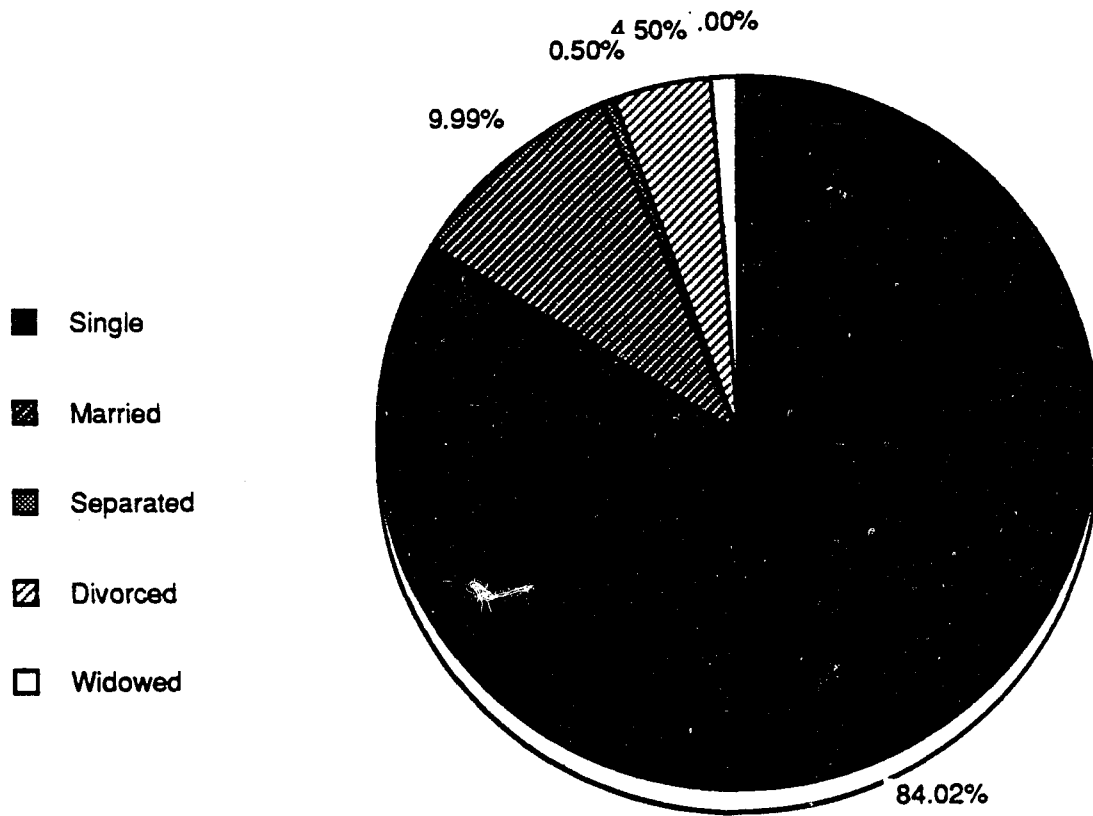
The single greatest limitation to the present study resulted from a very low response rate from students. Over 1500 students from seven institutions were extended invitations to complete the survey instrument. Of these, the final sample size was comprised of 200 students. Consequently, the results from these data may be very bias. Extreme caution should be exercised when interpreting these results.

Demographic Characteristics

Thirty percent of the survey participants were male and 70% were female. More than a third of the respondents were age 18-19; 30.7% were age 20-21; 16.9% were age 22-25; 14.9% were age 26 or older; and 3.5% were under 18 years of age. Approximately 67.8% of respondents identified themselves as white (non-Hispanic) and 31.7% identified themselves as black. Less than 1% identified themselves as Hispanic. No other racial/ethnic group was identified in the sample. The marital status of MIRM institutions' respondents are summarized in Figure 1. Most expectedly, the majority of MIRM respondents are single, never before married.

Of the survey sample, 33.3% were freshmen, 23.9% were sophomores. 17.9% were juniors, and 24.9% were seniors. Approximately 64.7% live on campus and the remaining 35.3% live off campus. Fifty-five percent of MIRM respondents

Figure 1. Distribution of marital status.



are from cities/towns with a population of 50,000 or more, while 45% have hometowns with a population less than 50,000. Geographically, 34.3% live in the Northeastern United States, 52.2% live in Southeastern United States, 4% live in the Midwest, 3.5% live in the West, and 6% live in an area other than those described above. Forty-eight percent of the survey respondents reported that they are unemployed (apart from being a student), and of those employed, over two-thirds worked part-time (less than 30 hours per week) rather than full time (see Figure 2). Further, 64.7% of respondents live on campus. Consequently, the college environment rather than the work environment is likely to influence students' drug habits and attitudes.

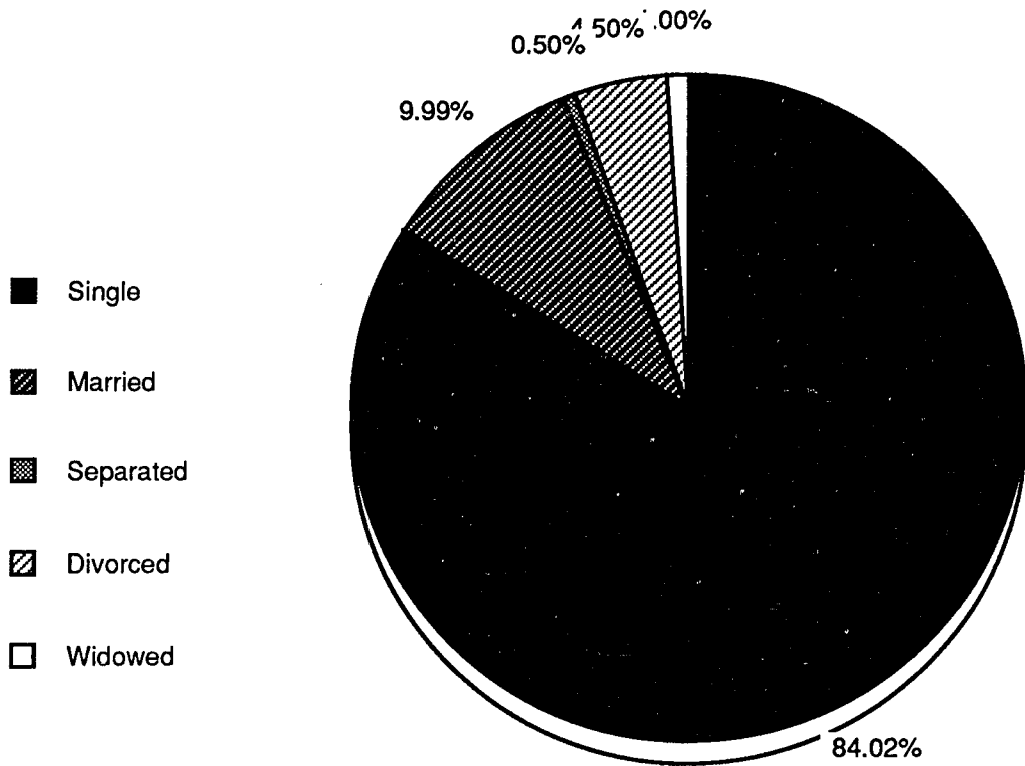
Drugs Used, Quantity Consumed, and History of Use

The information in this section summarizes the prevalence of drug use reported by MIRM institutions' students. Also included is data on initial use of each substance.

Tobacco Products

More than a fourth of responding students use some form of tobacco product (28.4% smoke and 11.9% use smokeless tobacco). Generally MIRM institutions' students who use tobacco products began using these substances while in high school, although 14.3% initiated use of

Figure 2. Distribution of marital status.



smokeless tobacco while in elementary school (see Figures 3 and 4). Because a fourth of MIRM respondents began smoking while enrolled in college, smoking cessation programs are recommended for MIRM drug prevention programs. Among smokers, 25.9% smoked between 1 and 10 cigarettes on the day preceding the administration of the survey; 11.1% smoked between 11 and 20 cigarettes; and 10.2% smoked between 20 and 40 cigarettes.

Among users of smokeless tobacco, 5.9% used smokeless tobacco once on the day preceding administration of the survey. Further, 6.9% used smokeless tobacco 2 to 3 times the day before the survey, and 5.9% used smokeless tobacco 3 or more times the day before the survey was administered.

Alcoholic Beverages.

Overwhelmingly, alcohol is the drug of choice among MIRM institutions' undergraduate and continuing education students in the sample. Of the total sample of MIRM respondents, 91.5% have consumed some form of alcoholic beverage at least once, and 76% currently consume alcoholic beverages. Among drinking respondents, beer was the most popular beverage with 72.7% having tried beer, and 63% consuming it the week before the survey (see Figure 5). Approximately 38.6% of beer drinkers usually consume 1 or 2 (12 ounces each) beers at one time; 29.7%

Figure 3. Initial use of smoking tobacco.

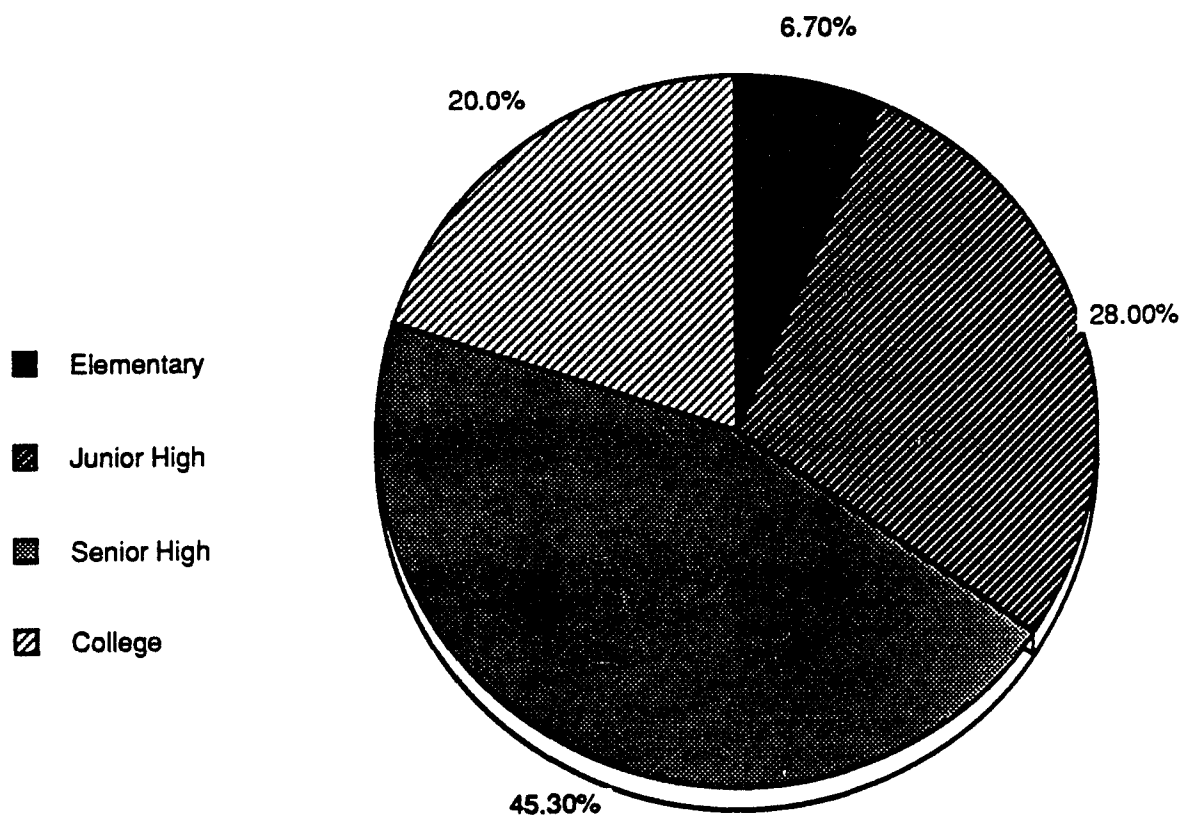


Figure 4. Initial use of smokeless tobacco.

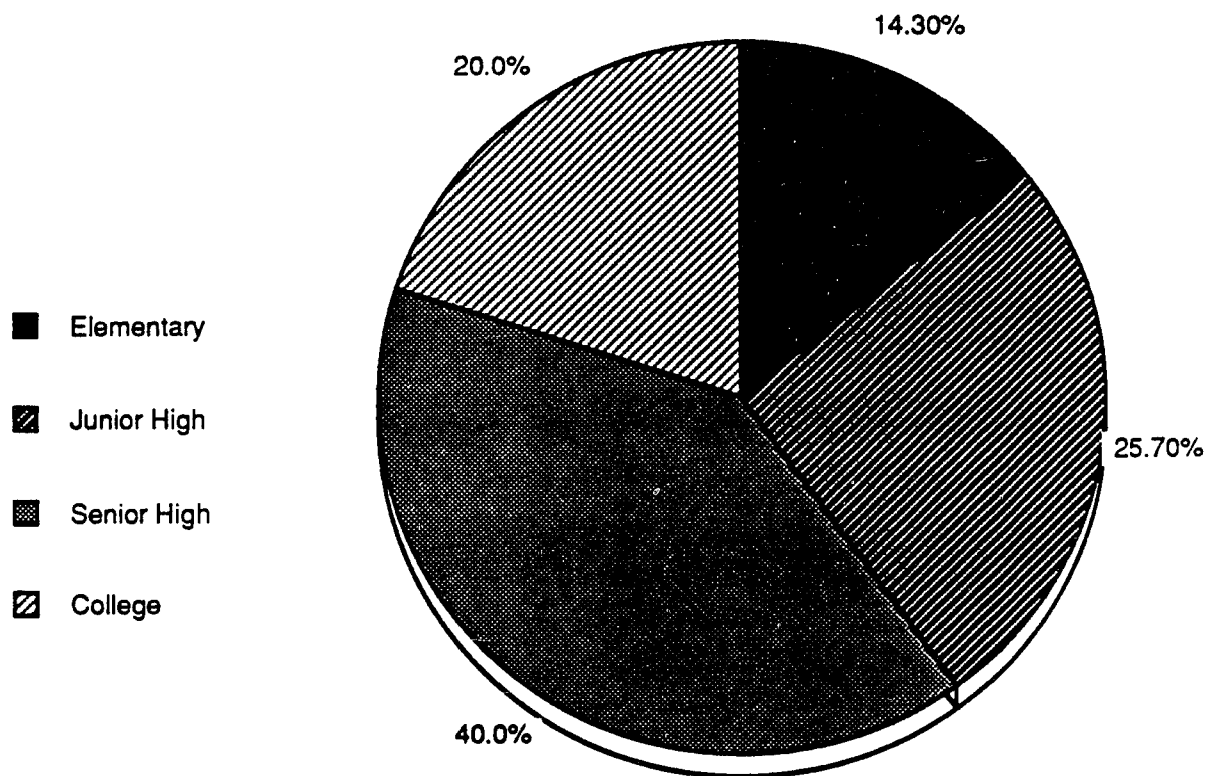
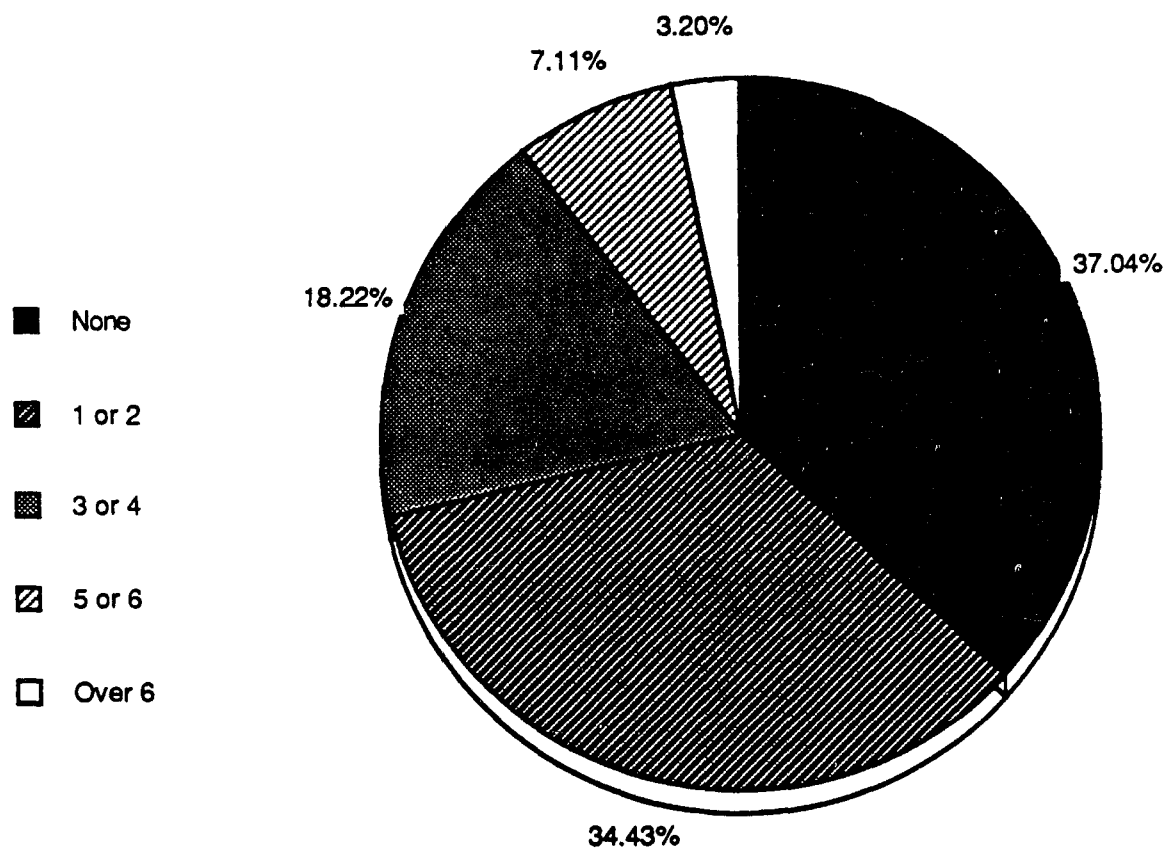


Figure 5. Distribution of beer consumed week before survey.



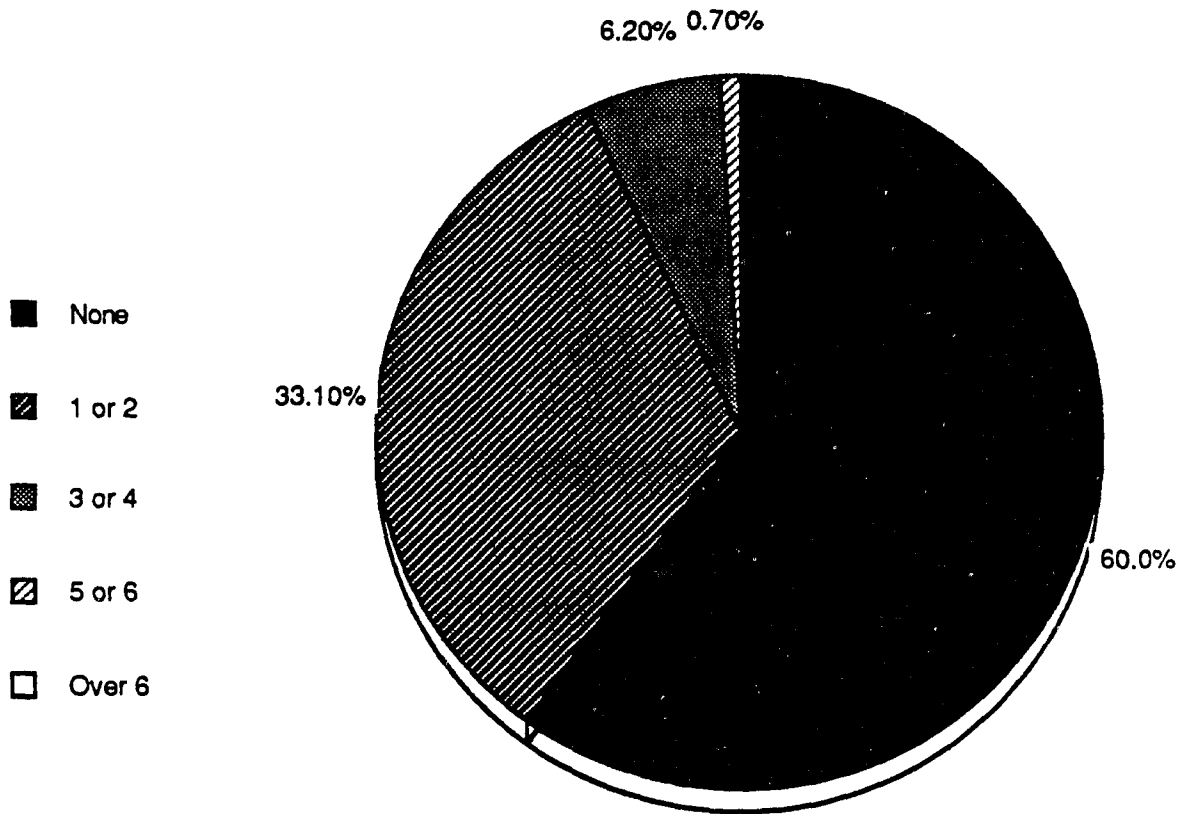
usually consume 3 or 4 beers; 17.9% usually consume 5 or 6 beers; and 13.6% usually consume over 6 beers at one time.

Liquor was the next most popular alcoholic beverage, followed by wine/wine coolers. Among MIRM drinking respondents, 71.8% have tried wine, and 33.8% consumed wine during the week before the survey was administered. Approximately 63.3% of MIRM drinking respondents who presently consume wine usually consumed 1 or 2 (6 ounces each) glasses of wine at one time; 30.2% usually consume 3 or 4 glasses; 4.3% usually consume 5 or 6 glasses; and 2.2% usually consume over 6 glasses of wine at one time.

Approximately 72.3% of drinking respondents have tried liquor. Of these, 40% consumed liquor during the week preceding administration of the survey (see Figure 6). Nearly half (48.6%) of MIRM drinking respondents usually consume 1 or 2 drinks (one ounce each) 36.6% usually consume 3 or 4 drinks, 7.7% usually consume 5 or 6 drinks, and 7% usually consume more than 6 drinks at one time. Approximately 30% of respondents who drink stated that they drank at least several times per week, suggesting the potential for serious alcohol addiction.

Because respondents' use of alcoholic beverages is diverse, MIRM colleges wishing to reduce their students' use of alcohol cannot focus their alcohol education and intervention programs on a single type of beverage.

Figure 6. Distribution of liquor consumed week before survey.



Marijuana

More than half (56.5%) the responding students reported the use marijuana during their lifetime, and more than a third (37.2%) reported use of marijuana during the month preceding administration of the survey. In addition, marijuana is the one illegal/illicit substance for which the percentage of initial use was greater before college than after beginning college (see Table 1).

The propensity of MIRM students to use marijuana may have been influenced by a general acceptance of marijuana as a somewhat benign substance compared to other illegal drugs. Subsequently, students use of marijuana may continue to increase to the extent marijuana use serves to allay fears that students are using "hard drugs" such as crack, other forms of cocaine, or PCP, for example.

Uppers

Over a fifth (22%) of MIRM respondents have used uppers (amphetamines, speed) at least once in their lifetime, and 8.4% have used uppers during the month preceding administration of the survey. Approximately a third (30.5%) of students who use uppers began using the substance prior to entering college. Consequently, the majority of these students initiated their use of uppers while enrolled in college.

Summarization of Illegal/Illicit Drug Use

Drug Used	Percentage Ever Used	Percentage Used 30 Days	Percentage of Users Who Used Before College
Marijuana	56.5	37.2	59.0
Cocaine	22.0	7.6	21.8
Hallucinogens	19.0	4.1	17.7
Uppers	31.5	8.4	30.5
Downers	19.0	3.5	15.6
Inhalants	6.5	1.4	4.3
Opiates	3.5	0.7	3.5
Designer	4.0	2.8	2.8
Others ¹ Prescriptions	22.5	9.9	24.1
OTC with High Alcohol	16.5	7.1	17.6

Cocaine.

Among MIRM institutions' respondents, cocaine is the fourth most frequently experienced illegal drugs, with an experience rate of 22%, and a monthly prevalence of 7.6%. Because the risk of initial cocaine use continues through age 24, a portion of the latter statistic may include first-time users. Specifically, only 21.8% of cocaine users report initial use of the substance before entering college.

Others Prescription Drugs

Nearly a fourth (22.5%) of all MIRM respondents have used prescription drugs prescribed for someone else during their life time. An examination of recent use indicates that 9.9% of MIRM students who used a prescription drug belonging to someone else did so during the thirty days preceding the survey.

Hallucinogens.

Nineteen percent of all MIRM respondents participating in the survey have experimented with hallucinogens (LSD, mushrooms, PCP). Among experimenters, 4.1% reported using hallucinogens during the thirty days prior to administration of the survey.

Downers.

Of the total sample of MIRM respondents, 19% have used

downers (xanax, valium, barbiturates, tranquilizers) at least once in their life-time and 3.5% used downers during the 30 days preceding administration of the survey.

Over-the-Counter Drugs

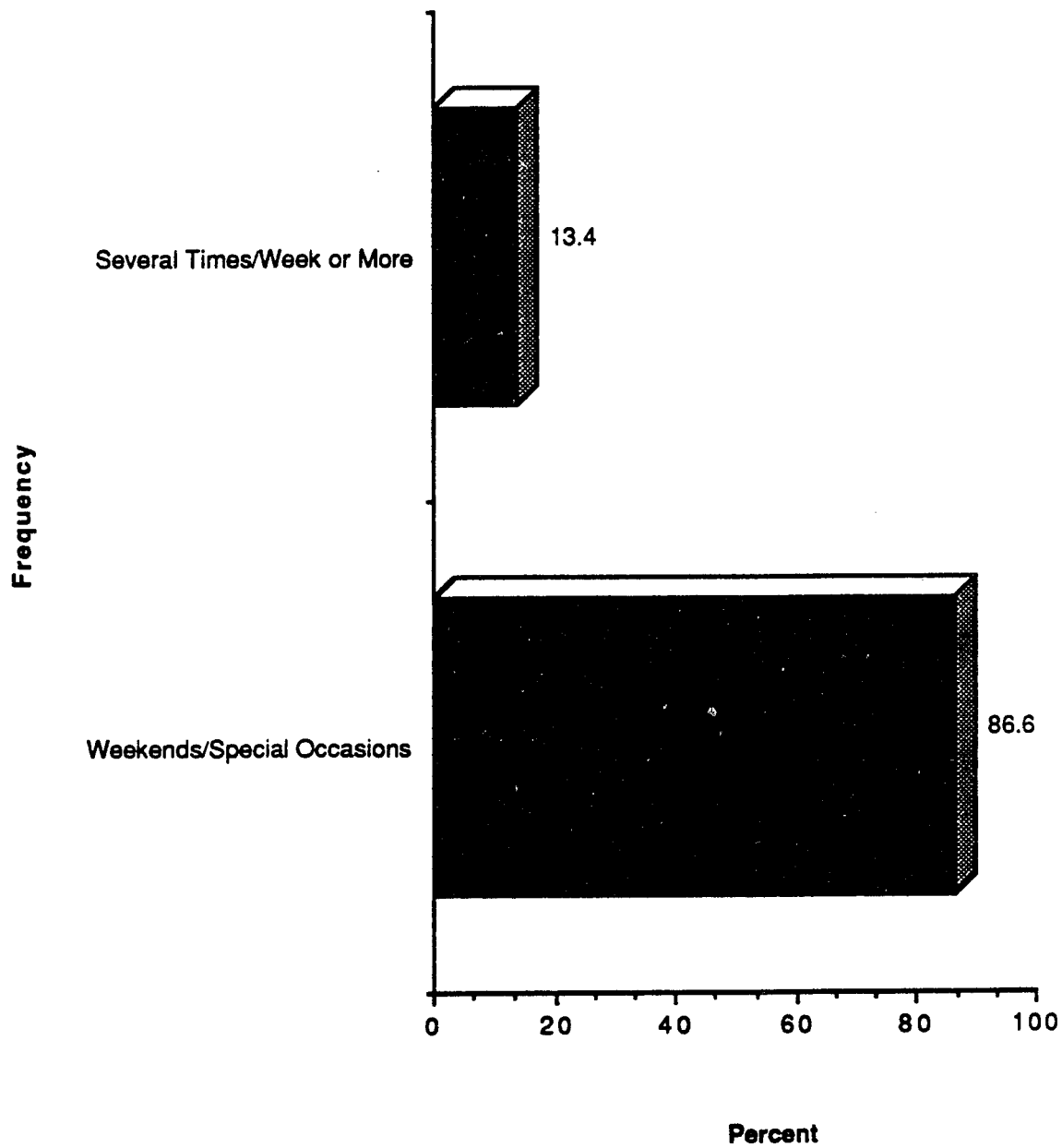
Over-the-counter products substances with high alcohol content were used by 16.5% of all MIRM institutions' respondents. Comparatively, 7.1% reported using these products during the month preceding administration of the survey.

Other Drugs.

Several drugs were used by a very small percentage (less than 10%) of the overall MIRM institutions' sample. Specifically, approximately 6.5% reported ever using inhalants, and 1.4% reported recent use of inhalants; 3.5% reported ever using opiates, and 0.7% reported recent use of opiates; and 4.0% reported having tried designer drugs, while 2.8% reported recent use of designer drugs. The literature on designer drugs suggest potential growth in the number of students who use these synthetic drugs. Generally, designer drugs are cheaper and frequently more potent than their nonsynthetic counterparts.

Approximately 13.4% of drug-experienced respondents report use of drugs at least several times per week (see Figure 7).

Figure 7. Frequency of drug use.



Common Characteristics of MIRM Drug Users

The following section reports students' classification, gender, living arrangement, grade point average, and the frequency with which they meet with a religious group as a function of the drugs they currently use.

Tobacco Products

By far, freshman constitute the greatest percentage of MIRM smokers (33.3%), sophomores account for 25.9% of smokers, juniors for 16.7%, and seniors for 24.1% of smokers. Smokers were more likely to be female (76.6%) than male (20.4%) and to live on campus. These statistics parallel the distinct sex difference in smoking rates reported in previous research (Johnston, et al., 1987; Wechsler & Gottlieb 1979; Roberts, 1980; Page & Gold, 1983; and Glover, et al., 1987).

Of the total group of students with a grade point average of 3.5-4.0, smokers comprised 23.8%; of students with a grade point average of 2.5-3.4, 25% were smokers; and of students with a grade point average of 1.5-2.4, 34.8% were smokers. Of smokers 60% either do not meet with a religious group as a rule or never meet with a religious group.

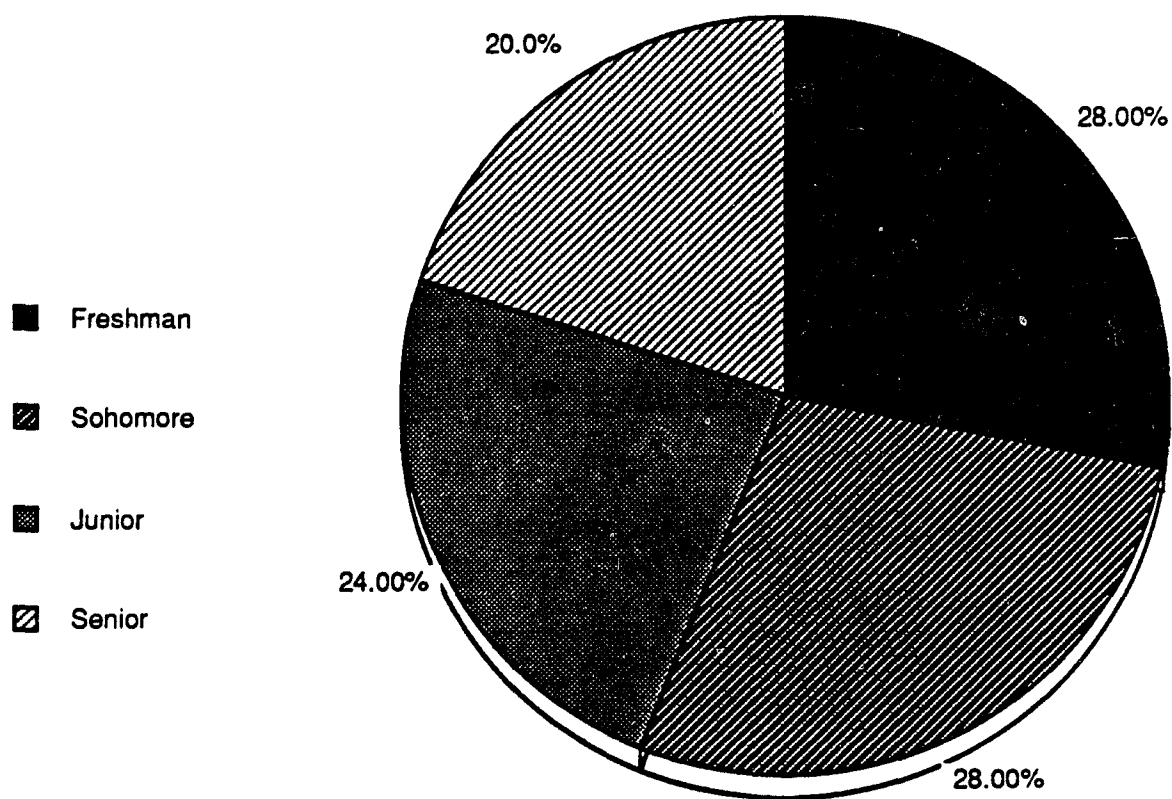
Users of smokeless tobacco tended to be male (91.7%) Similar results were reported by Glover, et al. (1987).

Seventy-two percent of users of smokeless tobacco live on campus. Approximately 41.7% of MIRM institutions' users of smokeless tobacco do not meet with a religious group as a rule. The higher the academic classification, the lower the percentage of users of smokeless tobacco (see Figure 8). A similar relationship was reported for users of smokeless tobacco and grade point average. Users of smokeless tobacco comprised 7.1% of all MIRM institutions' students with a grade point average of 3.5-4.0, 11.5% of all students with a grade point average of 2.5-3.4, and 15.2% of all students with a grade point average of 1.5-2.4.

Alcoholic Beverages.

Males and females differ significantly in their consumption of beer and wine. Of male respondents participating in the survey, 76.7% consume alcohol compared to 62.4% of female respondents. Further, a higher percentage of males reported consumption of liquor than did their female cohorts (76.7% for the former and 62.4% for the latter). Contrastly, 54.3% of females consume wine, while approximately, 43% of males consume wine. These results further substantiate similar conclusions reported by Engs and Hanson (1985) and Johnston, et al. (1987).

Figure 8. Distribution of academic classification of smokeless tobacco users.



As shown in Figure 9, use of alcohol tends to wax and wane as MIRM students progress through their undergraduate college years. Prevalence rates decrease from students' freshman to junior years in college, then increase during their senior year. These results are consistent with those reported by Engs and Hanson (1985).

The majority of drinking students as a rule do not meet with a religious group (see Figure 10), live on campus (66.4%), and are single -never before married. Ethnically, 52.4% of blacks and 83% of white (non-Hispanic) currently consume alcoholic beverages.

MIRM institutions' drinking respondents comprise 59.5% of students with a grade point average of 3.5-4.0, 63.5% of students with a grade point average of 2.5-3.4, and 80.4% of students with a grade point average of 1.5-2.4. Consequently, it would seem that there is an inverse relationship between students' grade point average and the percentage of students who consume alcoholic beverages.

Marijuana

Among MIRM freshman respondents, 34.3% used marijuana during the thirty days prior to the administration of the survey. During this same period, 20.8% of sophomores, 25% of juniors, and 26% of seniors used marijuana. Generally, these data do not suggest a relationship between academic classification and use of marijuana.

Figure 9. Distribution of academic classification: current consumers of alcohol.

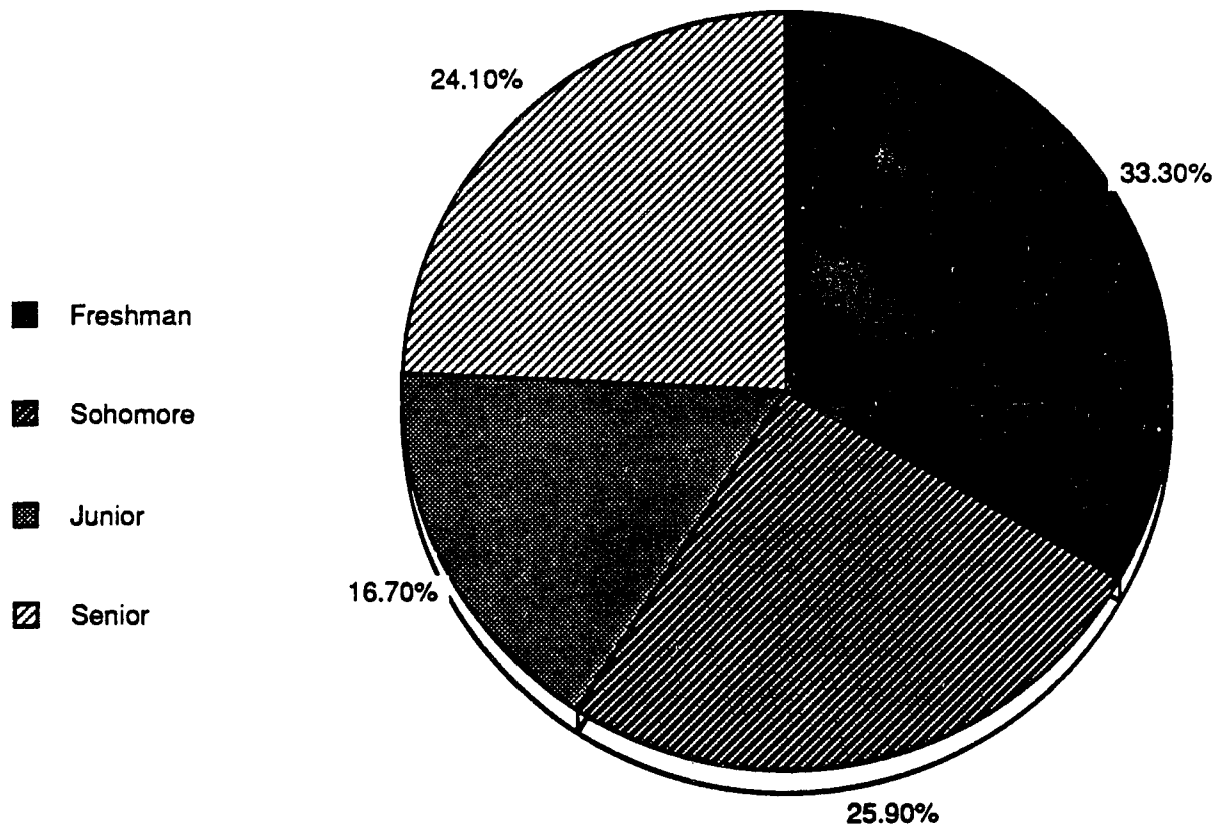
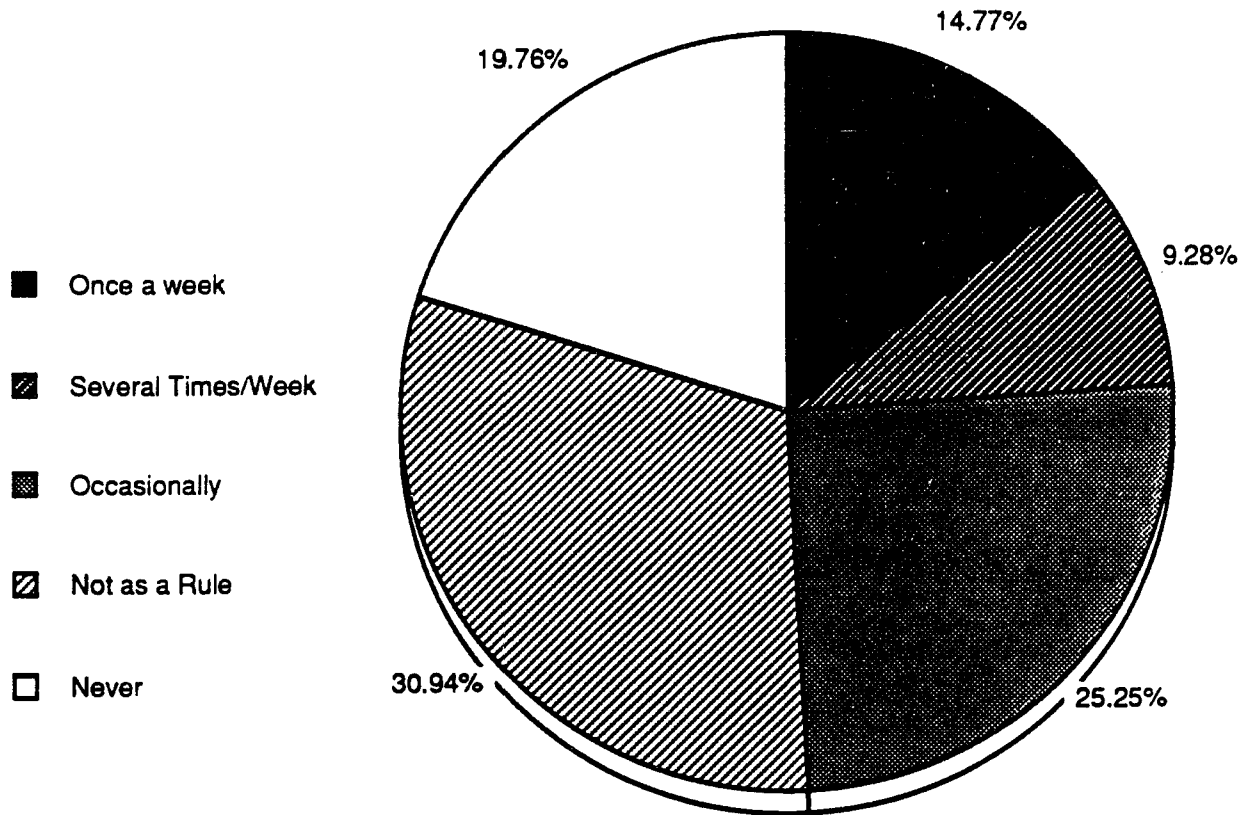


Figure 10. Distribution of attendance at religious meetings: drinking respondents.



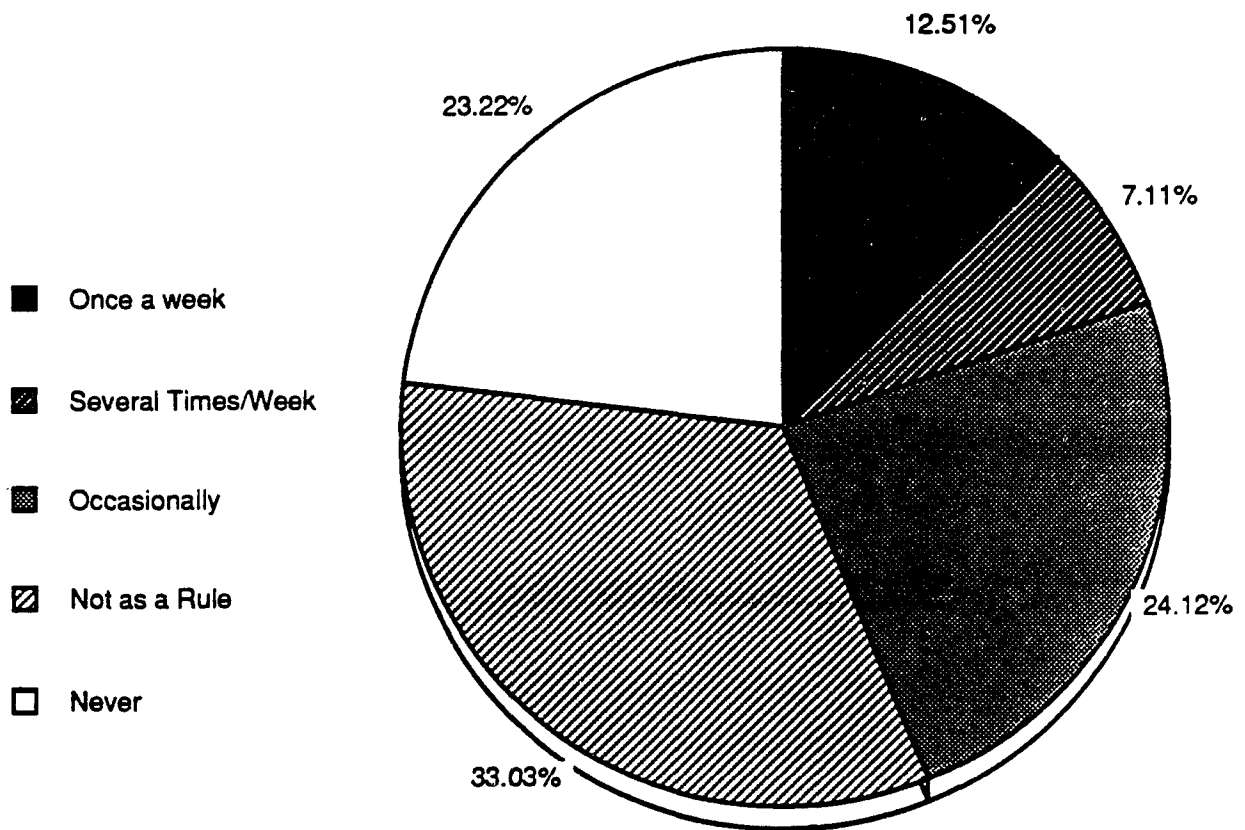
While 33.3% of male respondents reported using marijuana during the thirty days prior to the administration of the survey, 24.8% of female respondents reported using marijuana for the same time span.

Ethnically, 20.6% of MIRM black respondents reported use of marijuana compared to 49.6% of MIRM white (non Hispanic) respondents. The remaining ethnic/racial groups had sample sizes of twenty or less. Consequently, statistics were not computed on these populations because of the potential bias associated with such small populations.

There is an association between MIRM students living arrangements and their use of marijuana during the thirty days preceding administration of the survey. Approximately 29.6% of students living off campus reported recent use of marijuana and 25.4% of students living on campus reported recent use of marijuana.

Among students with a grade point average of 3.5-4.0, 21.4% use marijuana; of students with a grade point average of 2.5-3.4, 28.8% use marijuana; and of students with a grade point average of 1.5-2.4, 37% use marijuana. Consequently, these data suggest that users of marijuana are likely to have lower grade point averages than their nonuser cohorts. Current users of marijuana tend not to meet with a religious group (see Figure 11) and tend to be single -never before married.

Figur 11. Distribution of attendance at religious meetings: marijuana users.



Other Drugs.

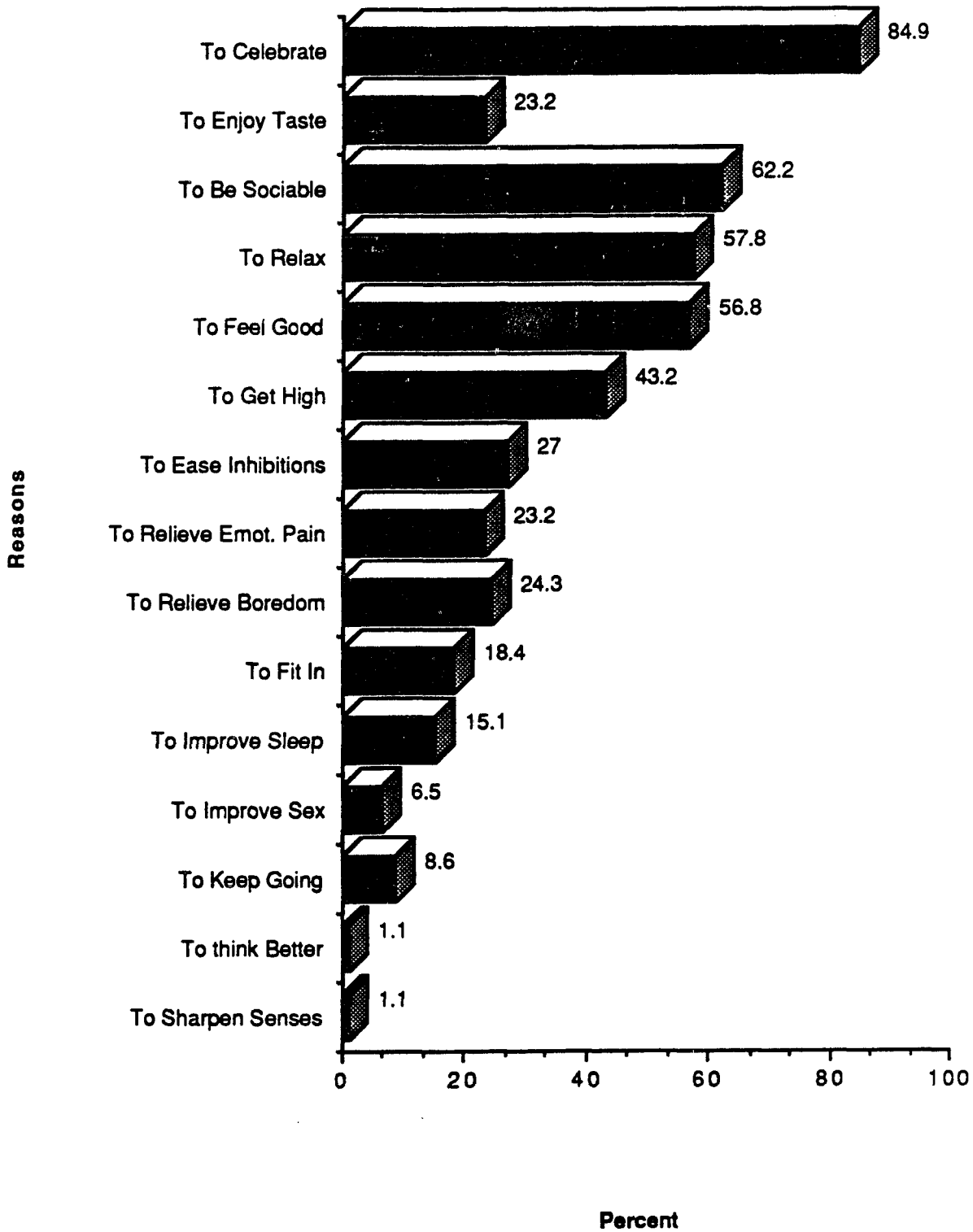
The sample of students who currently use any other illicit/illegal is very small (less than 10%) compared to the overall group, therefore no statistics will be computed due to the questionability of their validity. As indicated earlier, the frequency of current use of these substances is reported in Table 1.

Reasons for Drug Use

The following section discusses reasons students report for their use of drugs. An understanding of students' explanations for using drugs may prove helpful to campus administrators developing prevention and intervention programs for their campuses.

As shown in Figure 12, students who consume alcohol report a wide variety of motivating factors, the most frequent of which is "to celebrate." Enjoyment of the taste of alcohol and a desire to be sociable provide motivation for at least three out of five students who drink. More than half drink "to relax" or "to feel good." At least two in five report that they drink "to get high." Among the most disturbing statistics revealed by the data are the reports that almost a fourth of drinking students do so "to relieve emotional pain," and that 24.3% do so "to relieve boredom." These data strongly suggest

Figure 12. Distribution of reasons for consuming alcohol.



addictive drinking problems among these students, or the possibility of alcohol-related emotional problems.

It is generally recognized that people use drugs for a variety of reasons. MIRM institutions' students were provided a list of possible explanations for drug use. The response options and the percentage of MIRM respondents who selected each option is reported in Figure 13.

Almost two-thirds of drug-experienced respondents reported that they used drugs "to get high," and approximately 57.7% report drug use "to feel good." Celebration, and sociability were cited as drug use motivators by almost half of MIRM drug-experienced respondents. Other data summarized in Figure 13 reveal that a third of drug-experienced respondents use drugs "to relieve boredom," and more than a fourth use drugs "to ease emotional pain." These latter data are particularly troubling, since they are suggestive of addiction, or some form of drug-related emotional disturbance.

Where do Students Use Drugs

MIRM students report they consume alcohol more frequently off campus (54.1%) than on campus (23.5%). Approximately 22.4% report equal consumption on and off campus. Typically, Mirm students consume the most alcohol at social gatherings (see Figure 14).

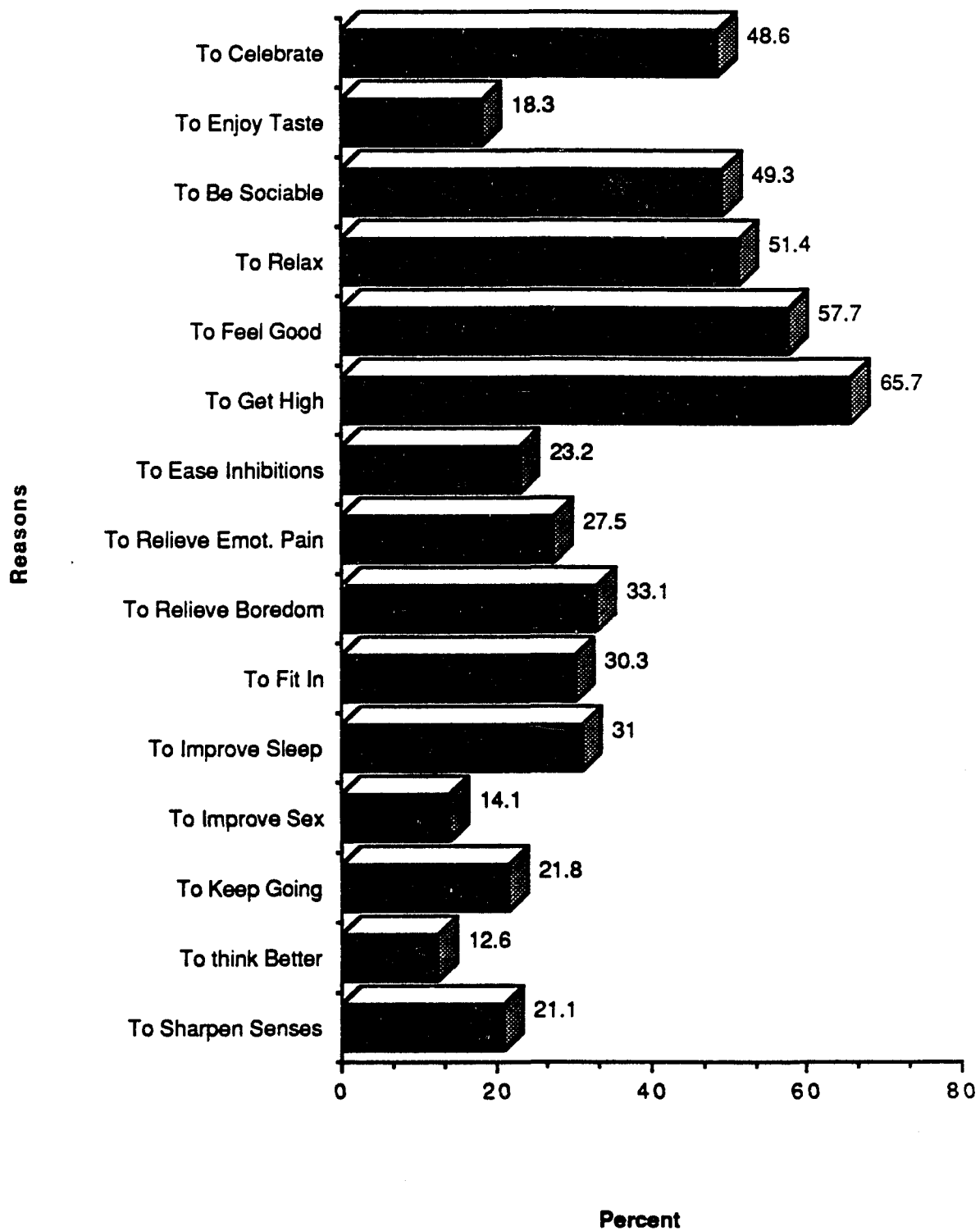
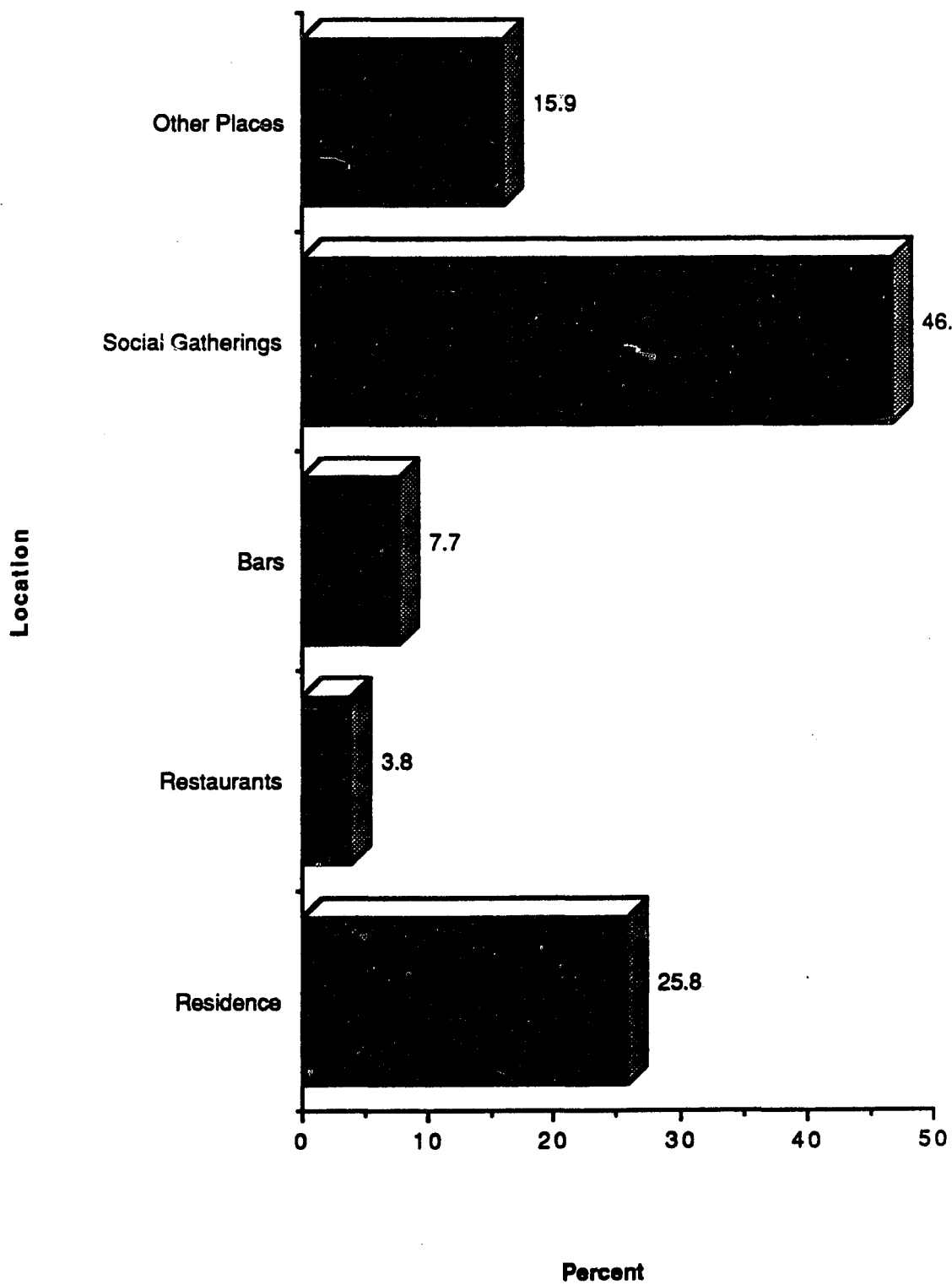
Figure 13. Distribution of reasons for consuming illegal/illicit drugs.

Figure 14. Distribution of location of alcohol.



Use of illegal/illicit drugs most often occur off campus (55.4%), although 25.9% consume more drugs on campus, and 18.8% consume drugs equally on campus and off campus. MIRM institutions' drug-experienced respondents report they use drugs most frequently in their place of residence. Less than 3% use drugs most frequently in restaurants, while 23.2% use drugs most frequently at social gatherings. Approximately 36.6% use drugs in places other than those previously described.

These data suggest that students' drug use might be marginally reduced through more stringent enforcement of rules prohibiting drug use on campus, but that other means of affecting students' behavior, such as drug counseling and education, will be essential, if major reductions in drug use are to be realized.

With Whom do Students Use Drugs

The vast majority (38.9%) of MIRM drug-experienced respondents use drugs mainly with 1 or 2 individuals; 33.6% use drugs only with 1 or 2 individuals. Similarly, 47.5% of drinking respondents indicate they use alcohol mainly with 1 or 2 individuals; 16.4% drink only with 1 or 2 individuals, 24% drink mainly with a group, 8.7% drink only with a group, and 3.3% only drink alone. These results suggest that students may have select groups with whom they use drugs.

At What Times do Students Use Drugs

Approximately 44.6% of MIRM drinking respondents use alcohol only on special occasions, and 34.2% use alcohol only on weekends (see Figure 15). Comparatively, 70.5% of drug-experienced respondents use drugs only on special occasions, and 16.1% use drugs mostly on weekends (see Figure 16).

Consequences of Drug Use

Alcoholic Beverages.

Students who drink reported a wide variety of consequential social and legal problems, as summarized in Figure 17. More than two in five (44.3%) respondents reported that they engaged in sexual activity that they would otherwise have avoided, as a result of alcohol consumption. Over a third (35.7%) of drinking students have missed classes as a result of their alcohol consumption, and 27% reported attending class while under the influence of alcohol. Clearly, consumption of alcohol interferes with achievement of the principal mission of the MIRM colleges for a large percentage of their students.

The physical and psychological effects of alcohol consumption reported by MIRM students with alcohol experience were frequent and of wide variety (see Figure 18). Not unexpectedly, the experience of a "hangover" was

Figure 15. Distribution of frequency of use of alcoholic beverages.

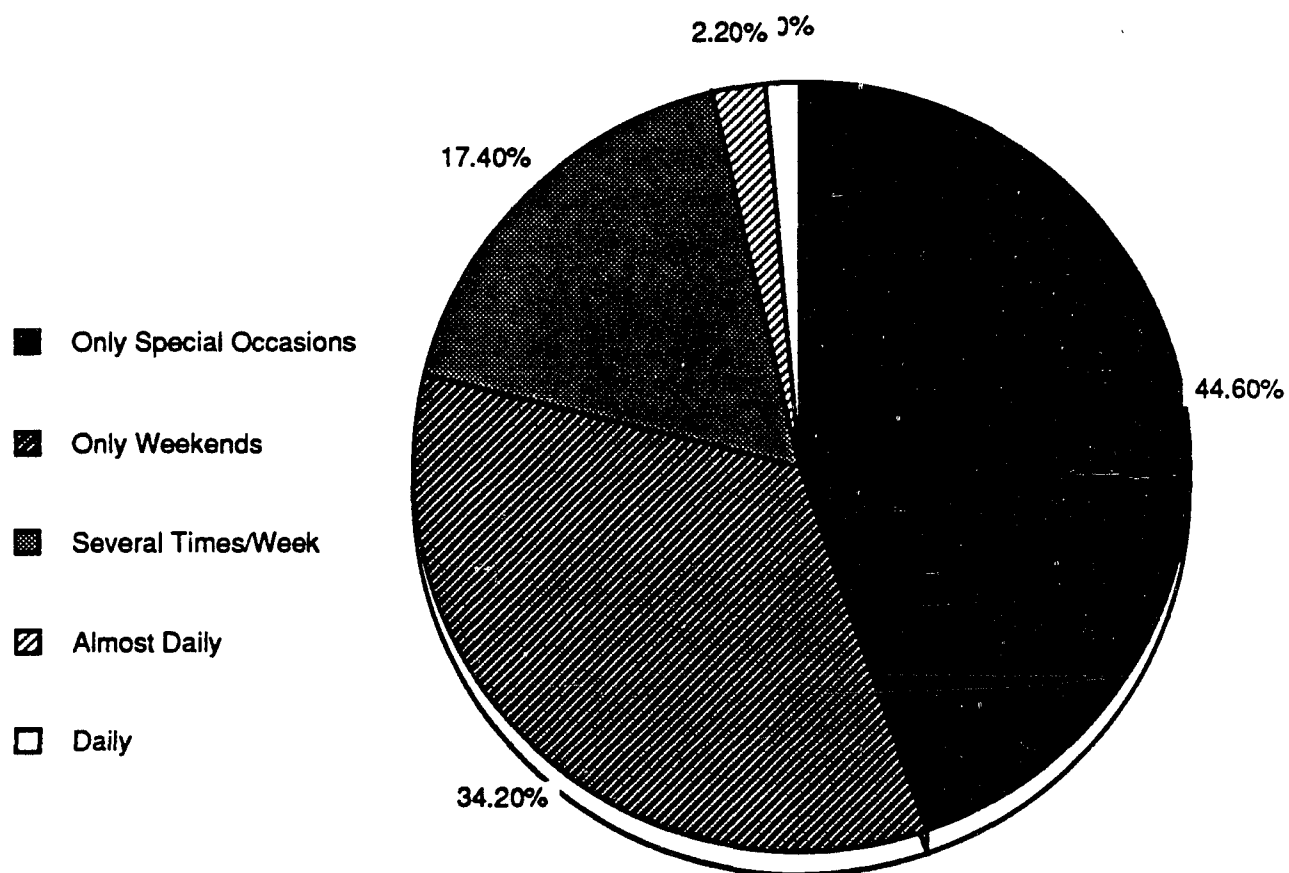


Figure 16. Distribution of frequency of use of illegal drugs.

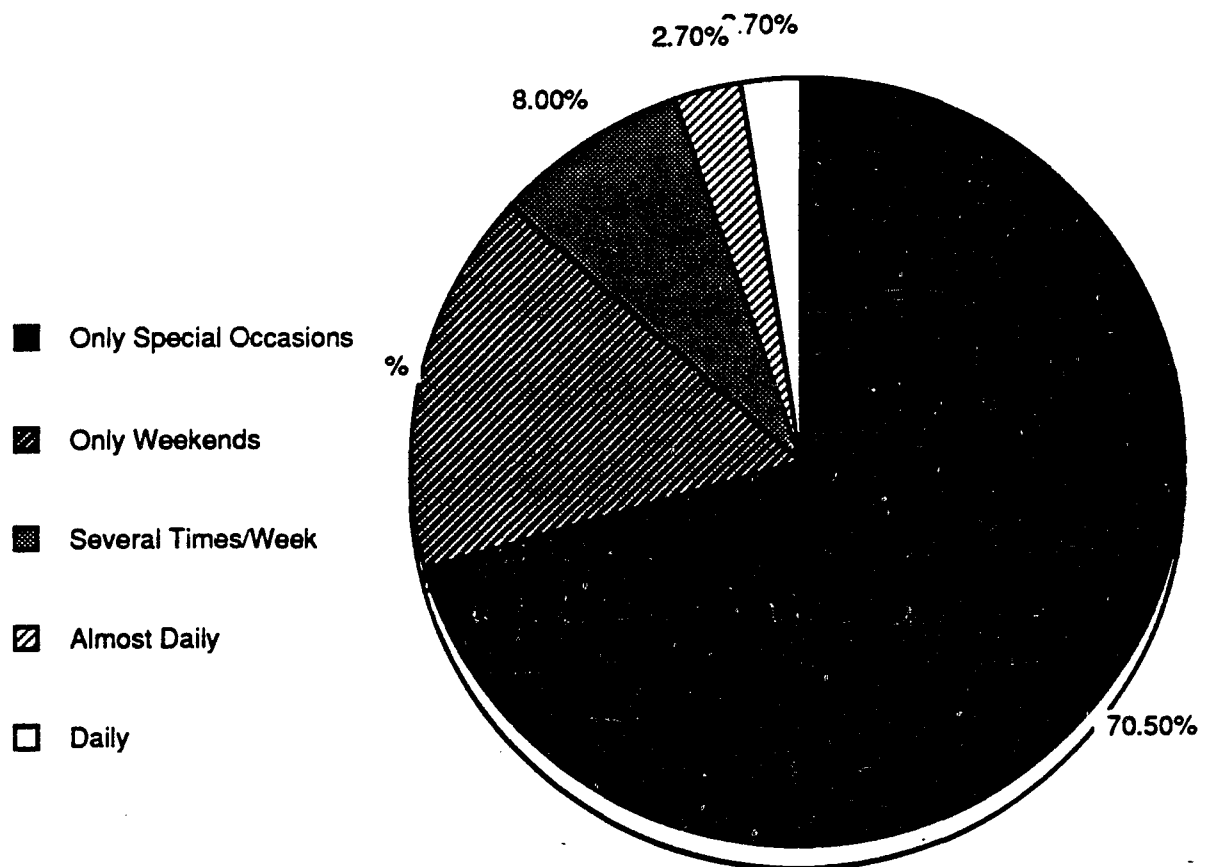


Figure 17. Distribution of social/legal consequences of alcohol use.

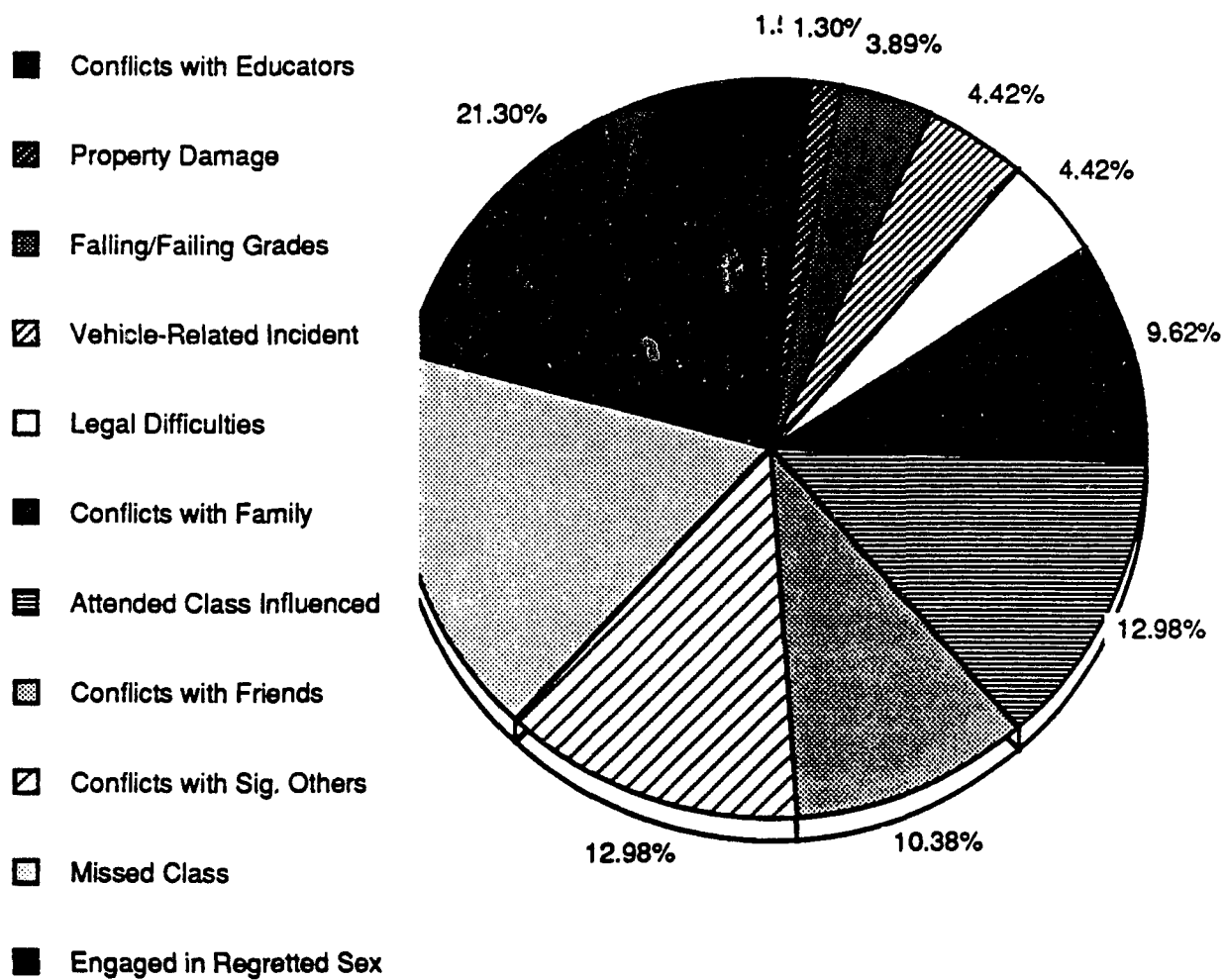
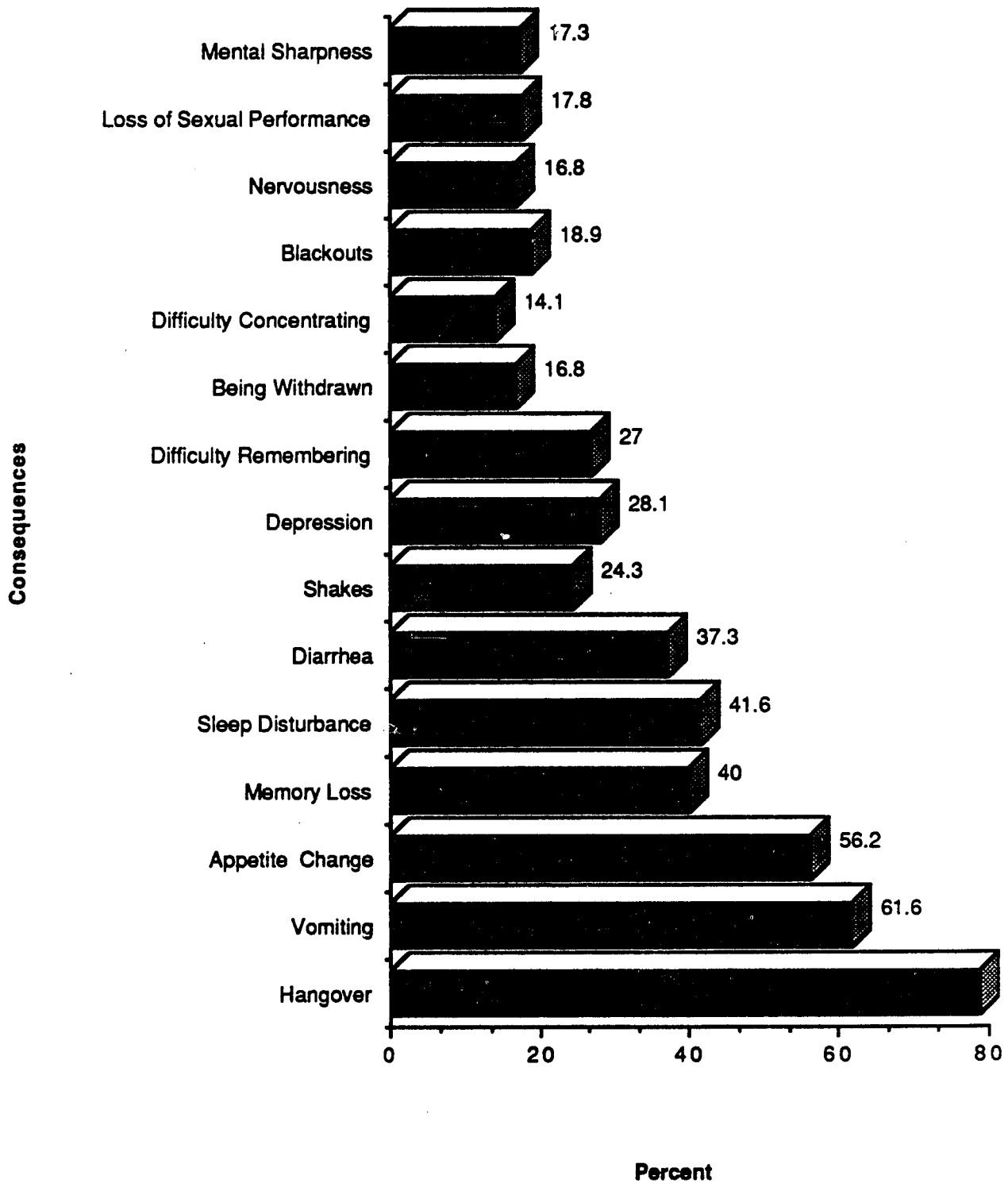


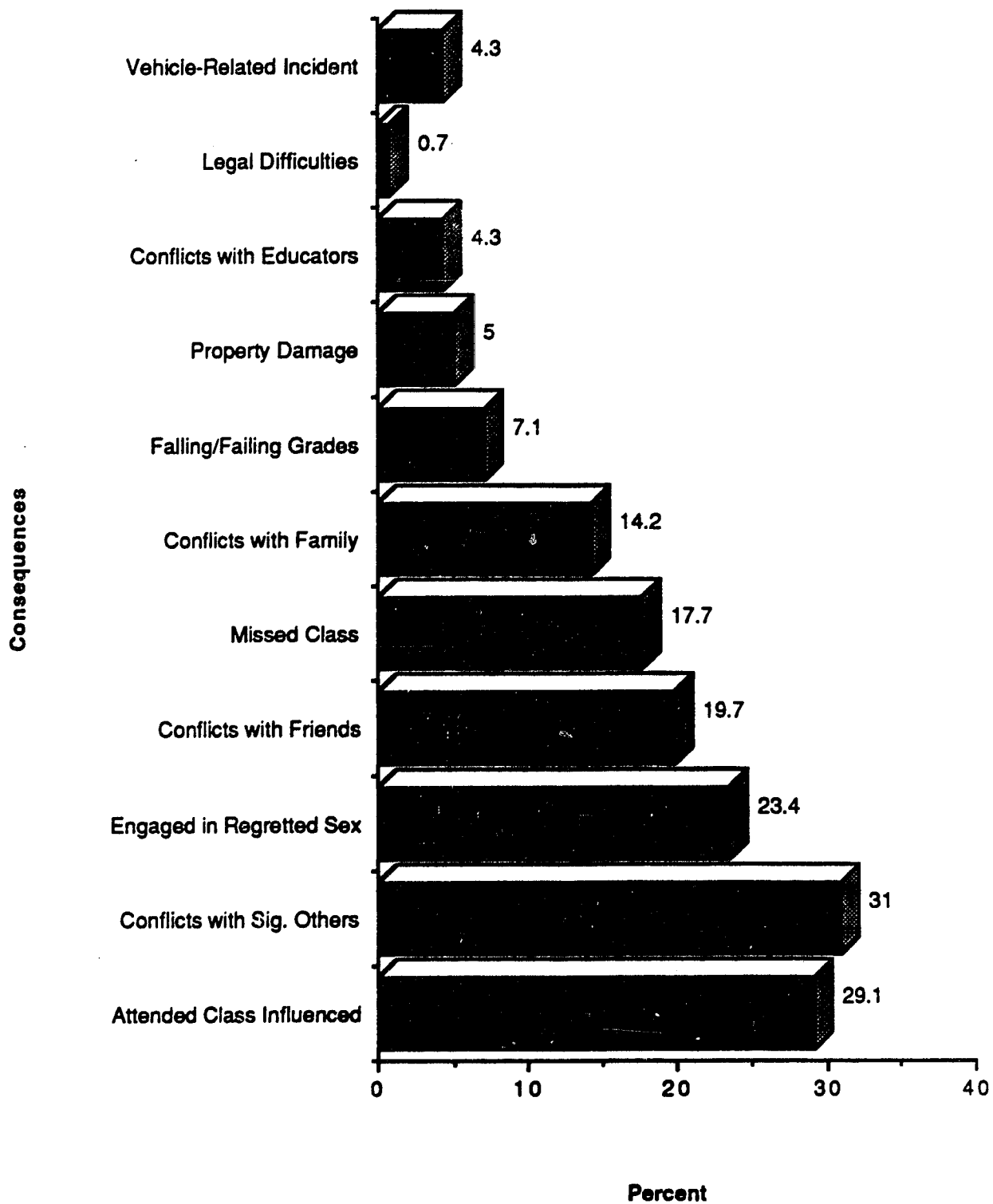
Figure 18. Distribution of physical and psychological consequences of alcohol use.

most widely reported (78.9%) followed by vomiting (61.6%) and appetite change (56.2%). Among psychological effects, memory loss (40%) sleep disturbances (41.6%) and depression (28.1), were most frequently reported. Once again, the data on psychological reactions to alcohol consumption suggest more than the occasional consumption of small amounts of alcohol for a large percentage of responding students with alcohol experience.

Other Drugs.

Almost three out of ten drug-experienced students (29.1%) at MIRM institutions report having attended class while under the influence of drugs, and more than 15 percent report having missed class as a result of their drug use (see Figure 19). Other social and legal consequences of drug use reported by these students include having conflicts with significant others (31%), having engaged in sex they would have avoided if not influenced by drugs (23.4%) and having conflicts with their friends (19.7%). Legal consequences of drug use were experienced less frequently by these students than were social consequences. Between one and five percent reported consequential legal difficulties or vehicle-related incidents.

More than half of drug-experienced respondents reported experiencing appetite changes as a result of

Figure 19. Distribution of social and legal consequences of drug use.

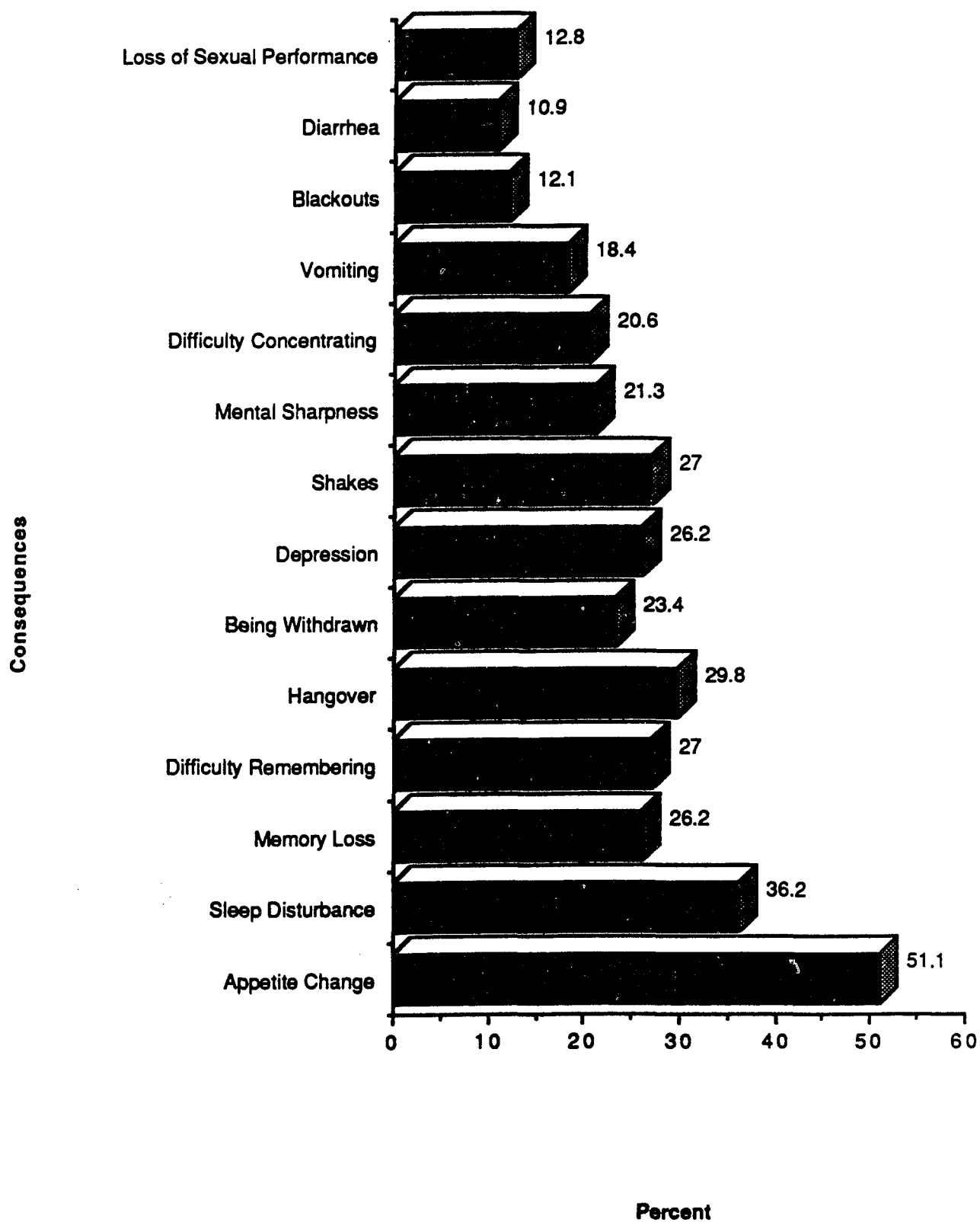
their drug use, 36.2% reported sleep disturbances, and 29.8% reported experiencing drug hangovers. Difficulty remembering, being withdrawn, and periods of depression were reported by more than one in five drug-experienced respondents. These latter statistics indicate the possibility of serious mental health problems resulting from drug use by noticable percentages of the MIRM institutions' drug-experienced students (see Figure 20).

Attitudes and Beliefs.

Relevant to any drug program are the attitudes students have toward drug use and the effects drugs have had in their lives. These attitudes and experiences can potentially aid or deter student participation in drug programs. The following section discusses MIRM institutions students' perceptions of potential health damage resulting from their use of drugs, students perceptions of their campus drug problems, and students willingness to attend a student-sponsored, college-sponsored, or church-sponsored drug program. Also included are reported reasons for avoiding drugs.

Tobacco Products.

It is noteworthy that 87.6% of tobacco users expect their use to damage their health, and 75% expressed a desire to stop using tobacco products. The latter

Figure 20. Distribution of Physical/Psychological Consequences

statistic suggests that tobacco addiction is widespread among students who use tobacco.

Alcoholic Beverages.

Among students who have "ever used alcohol," more than a third (37%) expect their use to result in damage to their health. Over a fourth (26.1%) expressed the desire to reduce their use of alcohol, and 30.1% expressed the desire to stop using alcohol. These latter statistics suggest that at least a fourth of the respondents who have used alcohol consider their use to be somewhat beyond their control and possibly addictive. Certainly, these data suggest that alcohol use among many respondents is neither casual nor occasional.

Over a third (42%) of all MIRM students reported that at least one member of their family had experienced difficulty of some sort related to alcohol consumption. Consequently, these students may be at greater risk of acquiring alcohol-related problems as a result of alcohol-consuming models.

Of students who currently consume alcohol, 65% report that they were familiar with drug policies on their campus and 28% responded "don't know". These results suggest that only 7% of MIRM current alcohol users report that they are completely unaware of their campus drug policies. Consequently, it would seem that dissemination of

information on campus drug policies is not sufficient to curtail the use of alcohol.

Approximately 47% of responding students reported that alcohol is more readily available to them in their college than it had been prior to their enrollment in college and 58.5% believe that alcoholic consumption is a "problem on their campus." These data suggest that students enrolled in the MIRM colleges recognize the problems attendant to the consumption of alcohol on their campuses, and desire to have consumption of alcohol addressed as a problem by their institutions.

Illegal/Illicit Drugs

While 40.3% of MIRM institutions' respondents believe that drugs are accepted on their campuses, 52.5% of drug-experienced respondents want to stop using drugs, 41.7% want to reduce their current use of drugs, and 53% believe drugs are damaging to your health. Based on the percentage of respondents desiring to curtail or eliminate drug use, these data suggest that appropriate counseling may be effective in reducing drug use. However, these statistics also suggest a high rate of drug addictive behavior among these students.

School Drug Policy

Approximately two-thirds of students in MIRM institutions are familiar with their campus drug policy,

26.4% consider their campus policy to be adequate, 8% consider their policy too stringent, and 22.4% consider their policy to be too lenient. Further, 37.3% think their campus drug policies are insufficiently enforced, while only 9% feel their campus drug policies are too stringently enforced. Of the total group of participants, 83% endorse peer counseling as a part of their campus drug program, 28.5% endorse limited drug screening, and 60.7% endorse student input in campus drug policies.

Drug Education

Only 12% of MIRM students reported that drug use is not a problem on their campus and over a third do not believe drug education reduces drug use. To the contrary, 58.7% of all respondents feel drug education should be required of all students (14.4% reported "don't know"), 79.1% feel drug education should be required of students with a drug problem (9.5% reported "don't know"), and 71.1% feel that drug education should be available but not required.

Nearly half (48%) of all MIRM respondents reported a willingness to attend a college-sponsored drug program. Slightly more students reported a willingness to attend a student-sponsored drug program (50.7%), and significantly fewer (35.2%) report a willingness to attend a church-sponsored drug program. In addition, 68.5% of respondents

report a willingness to take a course for credit and 50.7% would join a student antidrug organization.

These data provide policy guidance for campus drug programs. It is clear from this data that students consider drug education far more effective than drug policies in the fight against campus drug use.

Reasons for Avoiding Drugs

A variety of reasons were reported by MIRM institutions' students for reframing from the use of drugs. The most frequently cited reason for avoiding drugs was adverse physical effects (94%) which result from drug use. Potential addiction was cited by 93% of respondents, interference with relationships was cited by 86.9% of respondents, illegality was cited by 78% of respondents, parents objection was cited 74.2% of respondents, school policy was cited by 63.5% of respondents, and friends objections were cited by 52.8% of respondents.

These data suggest that strigent campus drug policies alone are not likely to be very effective in eliminating drug use on MIRM campuses.

Accuracy of Responses

Eighty-eight percent of MIRM participants in the survey reported that their responses accurately reflect their feelings and behaviors.

Summary

It should be reiterated that the final sample of students to complete the survey was composed of only 13% of the students invited to participate in the study. Consequently, generalizations are limited due to the strong potential for biased results from the study. Interpretations and extrapolations from the data should be considered with these limitations in mind. In addition, because continuing education students were included in the survey, comparisons between this study and other students of undergraduate students may not be appropriate.

Use of alcoholic beverages, tobacco products, and marijuana among MIRM institutions' respondents was initiated prior to entering college. However, use of all other drugs (all of which are illegal) began after students entered college. Yet, 52.5% of drug-experienced respondents to this survey reported a desire to stop using drugs, and more than 40% reported a desire to reduce their drug use. Over half (53%) of these students expect drug use to damage their health. These statistics carry both positive and negative messages. Drug-experienced students in MIRM institutions desirer to reduce or eliminate their drug use provides hope that appropriate drug counseling programs might be effective. However, these statistics also suggest a high rate of drug addictive behavior among

MIRM institutions' drug-experienced students, since they continue to use drugs despite their desire to quit.

Students in MIRM institutions endorse a wide variety of reasons to avoid the use of drugs. More than nine in ten cited potential health risks and potential addiction as avoidance reasons, and over 85% recognized the threat to social relationships associated with drug use. Illegality was cited as a reason for avoiding drugs by almost eight in ten respondents, and objections of parents by two-thirds. School policies were cited as drug avoidance motivators far less frequently than were addictive and health risks.

These results suggest that creation of stringent campus drug policies will likely be an insufficient response to the use of illegal and illicit drugs by students in MIRM institutions.

Over 40% of the respondents to this survey reported that drug use is "accepted" on their campus, and only 12% reported that drug there is "no drug problem" on their campus. These data suggest that a large percentage of MIRM students regard acceptance of drug activity on their campus as problematic.

Although a 26.4% of the respondents regarded their campus drug policies as "adequate," an almost equal number felt that the policies were either "too lenient" (22%) or "too stringent" (8%). More than a third of the responding

students felt that their campus drug policies were insufficiently enforced, and less than ten percent felt that campus drug policies were too strictly enforced. Although students' judgments on the strictness and enforcement of their campus drug policies varied, far more of those who were not satisfied with current policies opted for stricter policies that were more strictly enforced than for greater lenience in any form.

Making drug education available on their campus was endorsed by more than two-thirds of the respondents to this survey. Students reported a willingness to attend a "for credit" course on drugs, as well as a willingness to participate in drug-education programs. Between 35.2% and 50.7% of responding students expressed willingness to engage in some form of drug education, depending on its sponsorship. Over half would join a student organization that sought to reduce or eliminate drug use at MIRM institutions.

Responding students regarded counseling as a worthwhile strategy for addressing drug use on their campuses. More than four in five endorsed provision of peer counseling, and only 10% expressed opposition to the provision of professional drug counseling. It is noteworthy that 28.5% of the respondents endorsed the use of at least limited drug screening on their campuses.

It has already been noted that use of marijuana by students in MIRM institutions occurs more frequently than use of any other drug. Current marijuana use occurs more frequently among college freshmen (34.3%) than among students who have been in college more than one year. However, there is only a five percent difference between the remaining three classifications. These data suggest that programs designed to reduce the use of marijuana might be most effective if they are designed for all students but stressed for those beginning their college careers.

Alcohol is used by more MIRM students more frequently than any other drug examined in this study. Approximately 30% of all students consume alcohol at least several times a week, and substantial proportions of students who consume alcohol use it as a psychological crutch and experience serious psychological consequences.

Use of smoking tobacco by MIRM students is far more prevalent among females than males. Consequently, smoking cessation programs should be developed to emphasize the female population more than their male counterparts. Until recently, males smoked more frequently than females. Perhaps the greater influx of females into traditional male roles has contributed to increased smoking among female.

Drug-experienced students' reports of their reasons for drug use and their reports of consequential psychological effects suggest potential addiction students, and interference with the principal missions of the colleges they attend.

Drug education and drug counseling are regarded by responding students as most likely to be effective and valued in the fight against drug use. Although a number of respondents suggested the imposition of stricter campus drug policies, together with stricter enforcement of existing policies, these measures alone are unlikely to produce significant reductions in students' drug use.

Although students enter college alcohol-experienced, tobacco-experienced, and marijuana-experienced, colleges and university have an obligation to all students to develop their physical, psychological, and social well-being. If postsecondary institutions are to generate successful leaders for tomorrow, they must actively labor to eliminate drug abuse, a malignant ulcer which threatens the missions of colleges and universities today.

APPENDIX G
REVISED LETTER TO FACULTY

Dear

As a member of the Piedmont Independent College Association, _____ College is participating in an important research study sponsored by the United States Department of Education. The study will provide crucial information about college students' use of and opinions about tobacco, alcohol, and drugs. The results of the study will be used to evaluate and design more effective drug policies and programs at colleges throughout the Piedmont North Carolina region.

A pilot survey was conducted during the spring semester of this year. From this initial survey we learned that assemblies and mail surveys resulted in poor response rates from our students. Consequently, _____ college chose to administer the fall survey questionnaire within classes in an effort to obtain a more representative sample of our general college population. Your class was selected through a scientific random drawing to complete the questionnaire during the ____ o'clock hour on _____, September _____. A doctoral student from from the University of North Carolina at Greensboro will administer the questionnaire to your class. It will take approximately 35 minutes to complete the survey instrument. In an effort to obtain honest, reliable responses, we are requesting that you be absent from the classroom at the time the survey is administered.

We realize that participating in this survey entails the loss of class time. We hope, however, that the information acquired from this initial survey will provide support in developing programs for students experiencing drug-related problems. Please contact my office to confirm your willingness to participate in this survey.

Thank you for your assistance.

APPENDIX H
REVISED LETTER OF INTRODUCTION

SAY: Hello, my name is _____ and I am here as a research assistant from UNCG. _____ College is participating in a survey of college students' use of and opinions about tobacco, alcohol, and other substances. The survey is sponsored by the U.S. Department of Education and the Piedmont Independent College Association. _____ is one of seven colleges participating in the survey.

Your class was randomly selected from a roster of classes on your campus. You can provide us with accurate, reliable data with complete anonymity. Your responses will be totally confidential and no identifying information will be requested in the survey instrument. No one will interview you or ask you your name. The process simply requires that you complete a questionnaire. No individual results will be reported to anyone on your campus. The results will be analyzed at the Center for Educational Research and Evaluation on the campus of the University of North Carolina at Greensboro. Individual answer sheets will be taken directly to UNCG, and will be destroyed by the UNCG researchers, following their analysis of the data.

We cannot emphasize strongly enough the importance of your participation in this study. PICA has acquired federal funds to conduct this survey and to implement support programs where needed on private campuses. We hope you will choose to participate in this essential research.

HAND OUT THE PACKETS

SAY: Please open your packets. Check the contents of your packet.

You should have a pencil, an answer sheet, a plain sheet of paper, and a questionnaire booklet.

READ THE INSTRUCTIONS OF THE TEST BOOKLET

SAY: Please do not write your name or any other identifying information on your answer sheet. When you have completed the survey, please put all the contents back into your packets and seal the envelop. You may keep the pencil or you may return it to me.

WRITE ON THE CHALK BOARD: For questions 34-37 and 158-164 if there is not a response which applies to you, write "never" on your answer sheet for these questions.