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# THE DRINKING HABITS OF STUDENTS AND THEIR KNOWLEDGE OF ALCOHOL IN SELECTED MONTANA HIGH SCHOOLS

by

ROBERT JOSEPH SCHWARZ

A professional paper submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree

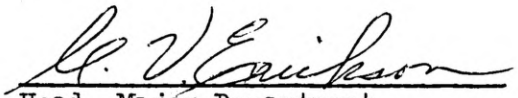
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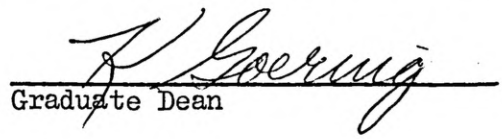
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## ABSTRACT

The purpose of this study was (1) to determine drinking habits indigenous to Montana teen-agers and (2) to learn amount of knowledge students had about alcohol, the problem, and physiological effects. Procedures consisted of (1) review of literature; (2) administration of questionnaires; (3) presentation and interpretation of data collected; and (4) scoring and reporting of mean score according to groups, schools, and total mean of first twenty questions in Part III of questionnaire.

Part I of questionnaire consisted of three items on student's grade, sex, and school size. Part II was twelve items to determine the drinking habits of students in four Montana high schools: a city school with a population of 500+, a town school of 217, a rural Indian school of 70, and a rural school of 65. Results showed that all schools had drinking problems: sophomore and senior males in the city school; junior males in the rural school; and junior males in the town school, all considered heavy drinkers since they drank more than once weekly. All schools had students who drank at least once a week. Too, teen-agers were involved in the bad practice of driving and drinking. Responses revealed that parents were aware of the drinking and often provided the alcohol. The first twenty questions in Part III were concerned with the student's knowledge of the problem and physiological effects. These were graded with a plus two assigned each correct response, a minus one each wrong response, and a zero each "Don't know" response. Range was from minus twenty to a plus forty. The mean of each group, each school, and total mean of entire population were computed and presented. Highest mean group score was +15.50 by male, rural Indian school juniors; lowest was an +8.00 scored by the female, rural school juniors. Mean of the entire population was only +11.31. The last item in Part III asked if students believed that secondary schools gave proper alcohol education. Response was 76.4 per cent "No," 8.6 per cent "Yes," and 15 per cent suggested that they did not know.

Conclusions were that Montana teen-agers do drink, but the percentage of heavy drinkers is only 1.7 per cent, 5 in 287 students. Yet, 42, or 15 per cent, drank at least once weekly. Also, too many teen-agers are unaware of what amount of alcohol in the bloodstream causes a sufficient enough reduction in reaction time to make for dangerous driving. Finally, the Montana teacher training institutions should offer a full three credit required course dealing with harmful effects of alcohol.

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# CHAPTER I

## INTRODUCTION

Alcoholism has been reported by several studies to be one of the five major health problems in the United States (Cain, 1963; Williams and Kitzinger, 1967) and one of the major health problems in Montana (Lessley, 1955). Although problem drinking is rare in teen-agers, according to a study done by the United States Department of Health, Education, and Welfare (1965), alcohol and the attitudes toward it are not being taught well in the high schools. McCarthy (1956) claims that the schools only perform minimum teaching requirements about alcohol and that they mainly teach the physiological effects of alcohol on the body. Nelson (1967) states that his study of Utah schools shows that not even the physiological aspects are being adequately taught or are being well assimilated.

Although early drinking and teen-age drinking were not an indication necessarily of a problem drinker, experts in the field of alcoholism feel that the school is the place to teach the effects, the dangers, and the acceptable drinking patterns of alcohol. Block (1962), a member of the Committee on Alcoholism, threatens that, "Unless there is a broadening of our educational program, greater action, and more understanding of the subject of alcoholism, it is estimated that one out of

every fifteen teenage drinkers may become an alcoholic sometime in the future." Another author (Giovannangeli, 1966) admonishes that, "It's important that present day youngsters have scientific knowledge about the effects of alcohol, and further understand the potential hazards involved in the use of alcoholic beverages before being faced with making decisions to drink or not to drink." According to McCarthy (1964), "The decision to drink should be based on knowledge rather than on the outside pressures and advice of friends, and it is an important responsibility of the school to provide both the information and a forum for its free discussion."

While reviewing the literature, this researcher found many conflicting reports as to the extent of the problem of teen-age drinking. How much teen-agers drink and to what extent drinking affects their lives are points of controversy. There is controversy over how many automobile accidents are caused by adolescents who have been drinking and how much alcohol affects juvenile delinquency. On the other hand, most of the studies done on adults in these areas found that alcohol is related to between 8 per cent and 24 per cent of the felonies of the nation (McCarthy, 1964) and a number of studies estimate alcohol as being a major factor in as high as 50 per cent of the nation's fatal automobile accidents. These drinkers, or the majority, must have begun drinking in teen years (Coffery, 1965; McCarthy, 1964; McCarthy and Clark, 1967; National Institute of Mental Health). Thus, educators must be able to give to students a desirable, intelligent outlook toward

drinking to help them avoid the problems it may cause in their adult years. The goal of education is to develop a socially desirable and acceptable person and this must include a better education on the effects of alcohol. This investigator agrees with Bacon and Straus (1953) who state, "It is our belief that colleges, together with the high schools and universities, can fulfill a highly significant function in aiding our society to achieve a firmer, more effective, and better integrated morality concerning drinkers and its related problems." Bacon and Straus feel that educators must develop well-organized, relevant knowledge and convey it to students in an "intelligible, organized, and emotionally meaningful fashion."

## Statement of the Problem

The purpose of this study was to determine, by the use of a questionnaire (Appendix A), the teen-age drinking habits of students of the upper three grades in selected Montana high schools. The questionnaire was also to ascertain the students' knowledge of the facts and the effects of alcohol on the human body.

## Need for the Study

This researcher felt that there was a need for more education on the physiological facts of alcohol in the schools of Montana. The need for more education in the school then indicates a need for improved instruction of teachers in teacher preparation institutions. This, the

researcher hopes, might lead to the institution of a required course, dealing with alcohol, tobacco, and narcotics, for all teacher trainees, not just health oriented students.

## General Questions to be Answered

The question to be answered through this investigation was two-fold. First, do teen-agers in Montana schools drink and to what extent? Second, how much knowledge do these students have about the physiological effects of alcohol?

## General Procedure

Data were approached by the use of a questionnaire which was administered by the researcher to students in a large city school with an enrollment of over 500, a town-sized school with 210 students, a small rural school of 65, and a small rural, predominantly Indian school, with 70 students. Only sophomores, juniors, and seniors were utilized for the study. Thirty from each class were questioned in the large urban school and the entire population present was surveyed in the remaining three schools. A total of 287 students were surveyed.

Once the questionnaire was answered, the schools were compared with one another in the following manner. First, questions concerning teen-age drinking habits were compared by schools, then by sex, and finally by grade. Then, the section concerning knowledge of alcohol was scored and means for each school, class, and sex were compared.

## Limitations

There were three major limitations to this study. Primarily, the lack of adequate funds for transportation limited the study to only four Montana high schools. Secondly, a lack of time to complete the study in order to meet a June graduation date also limited the number of schools surveyed. The final limitation was the fact that although the total population present were studied in the rural schools, the number of each sex questioned in each grade was so small that the percentages were caused to deviate more because of a single answer that is different from the rest of the answers.

## Definition of Terms

Alcoholic.--According to Reverend Howard J. Clinebell, "an alcoholic is anyone whose drinking interferes frequently or continuously with any of his important life adjustments and interpersonal relationships."

Alcoholism.--Alcoholics Anonymous defines alcoholism as a physical allergy coupled with a psychological compulsion.

Early-onset heavy drinkers.--The early-onset heavy drinkers are those persons who began drinking early and whose drinking became the cause of disrupted life patterns (Bahr, 1969).

Late-onset heavy drinkers.--The late-onset heavy drinkers are those in whom heavy drinking is caused by an earlier maladjustment or in

which drinking follows some personal crisis or some physical decline (Bahr, 1969).

City school.--An urban school has an enrollment of 500 or more students and it is located in a city of over 15,000 people.

Rural school.--A rural school has an enrollment of under 150 students and it is located in a town of 150 to 1,000 people.

Town school.--The town school has an enrollment of 150 to 500 and is located in a city of 1,000 to 5,000 people.

## Summary

This study was designed to ascertain the drinking habits of teenagers in selected schools in southern Montana. It was concerned also with the physiological knowledge about alcohol that students have assimilated through their instruction.

The study was aided by a questionnaire to determine the answers to the above-mentioned questions. The questionnaire was administered by the researcher in four schools of varying size from a large city school to a small rural school. The results of the first twelve questions were reviewed by percentage and were compared by grade, sex, and size of school and, in the case of the two small rural schools, by race--Caucasian or Indian. The second twenty questions, the knowledge of alcohol, were reviewed exactly as the first questions and by the mean grade of

the students. The study shows whether or not the students have been well educated on the physiological facts of alcohol. The researcher maintained that the study would prove a need for better education on the subject of alcohol.

# CHAPTER II

## REVIEW OF THE LITERATURE

The researcher found many studies related to teen-age drinking habits. These studies suggested why teen-agers drink, how much and where they drink, with whom they drink and from whom they obtain their alcoholic beverages. Available research related to how much quality education students received about alcohol was not so abundant. Studies were done in order to prove that drinking is a problem and that there is a need for better education on the subject of alcohol, but few studies ascertained whether or not there actually is a lack of assimilated knowledge in the student.

The review of literature was concerned with three specific areas: (1) research related directly to this study; (2) the problem of teen-age drinking in general; and (3) the necessity for further and better education for teen-agers on the subject of alcohol.

### Introduction

The review of literature found a study in Utah (Nelson, 1967) that formed the basis of the idea for the present study that this researcher proposed. Nelson found many interesting facts about teen-age drinking. He found that "a majority of U. S. citizens over 15 years of age drink

alcoholic beverages to some extent." Harold A. Mulford, cited by Nelson (1967), stated that "71 per cent or 80 million American adults (21 or over) drank alcoholic beverages. In 1946, the figure was 65 per cent. The largest increase was in the youngest age group of women (21-25)." Nelson found that 69 per cent of the boys and 60 per cent of the students he studied had, at one time or another, drunk alcoholic beverages. He found that most of the students felt they had tasted alcohol, but that they did not consider themselves drinkers. Moreover, Nelson noted that 43 per cent of the boys and 68 per cent of the girls claimed that they did not drink. Too, 13 per cent of the boys and 11 per cent of the girls claimed to drink no more than once or twice a year. This shocking fact, however, was that 8 per cent of the boys claimed to drink several times a week and another 8 per cent claimed to drink at least once a week.

The second part of the Nelson study was intended to determine the amount of knowledge of the teachers and their students had about the physiological aspects of alcohol. Nelson's conclusion in this part of the study was that the students have confidence in their health training program but that the teachers could profit by more formal training.

On the problem of teen-age drinking in New Hampshire, McKay and Clark (1967) gave the following statistics. Fifty per cent of the seventh graders, 69 per cent of the eighth graders, 71 per cent of the ninth graders, 75 per cent of the tenth graders, 80 per cent of the eleventh graders, and 85 per cent of the twelfth graders had drunk

alcoholic beverages. Of these drinkers, the following percentages were termed "pivotal drinkers": 12 per cent of the seventh graders; 28 per cent of the eighth graders; 43 per cent of the ninth graders; 34 per cent of the tenth graders; 51 per cent of the eleventh graders; and 53 per cent of the twelfth graders. The "pivotal drinkers" were considered to be those drinkers who get drunk, sick, arrested; who fight, pass out, or black out; who drink alone when the chance occurred or before breakfast; and who drink in cars, bars, alleys, use false identification to obtain liquor, and drink at home when their parents are not present. Any one of these practices could be considered as a serious sign of a drinking problem, but is not necessarily a definite sign.

In a Michigan investigation, conducted by Maddox and McCall (1964) and reported by Coffery (1965), 92 per cent of the teen-agers studied had drunk alcohol, 23 per cent continued to drink, and 1 per cent were found to be frequent drinkers. Coffery cited McKay's study of teen-age delinquents which showed 32 per cent of the boys studied to be moderate drinkers, 12 per cent to be heavy drinkers, and 10 per cent to be problem drinkers.

McCarthy (1964) compiled a list of teen-age drinking practices and attitudes:

1. The teen-ager used alcohol first at 13 or 14 years of age.

2. Nearly 100 per cent of teen-agers will have tried alcohol by the time that they graduated from high school.

3. The first use of alcohol was in the home.

4. Teen-age drinkers usually had at least one parent who drank; abstainers had parents who abstained.

5. The teen-agers who claimed parental approval usually drank in the home.

6. Teen-age drinkers were more prevalent in urban rather than in rural areas.

7. Most adolescents associated the use of alcohol with role playing practices they saw in adults.

8. Alcohol was a social beverage to teen-agers and they saw only what it could do for them, not what it could do to them.

9. Legal restraints did not seem to hamper teen-age drinking.

10. Only a minority of adolescents thought drinking was wrong.

11. The teen-agers who consumed one or two drinks a day constituted only 2 to 6 per cent of teen-age drinkers.

12. The incidence of the use of alcohol by teen-agers to perpetrate a rebellious attitude was relatively small.

McCarthy seemed to believe that these practices were a result of a lack of proper education on the part of the school. Since drinking problems appeared to be increasing more rapidly than the population of the United States, it would appear to be a necessity for the schools to become more efficient in teaching not what alcohol could do for the students, but what alcohol could do to harm them. Such education would not be carried out through threats but through presentation of meaningful knowledge.

One of the statements presented to the students in this study was "For young people the most immediate danger in drinking is intoxication (drunkenness) and the dangers it causes." The response to this was "True." The United States Department of Health, Education, and Welfare (1965) reported that problem drinking was rare in teen-agers and that alcohol was involved rarely in the teen-age automobile accident rate. These factors, however, were not the primary problems. The problem was that the initial introduction to alcohol, if not done in a knowledgeable sane manner, easily led to a drinking problem which might be responsible for some of the following frailties.

In 1965, the United States Department of Health, Education, and Welfare claimed that alcohol contributed to 50 per cent of the fatal accidents in the nation and that present research showed even that estimate to be too low. McCarthy (1964) related 25 per cent of the number of fatal accidents to alcohol, and this was the lowest estimate found. Too, McCarthy (1964) gave other harmful side effects of alcohol. First, he indicated that although drinking or alcoholism was rarely the major cause of crime, crime "becomes more likely when a person is drunk." Next, he pointed out that women alcoholics engaged in a greater degree of illegal sexual behavior in crime than non-alcoholic women. In Bahr's 1969 study of early-onset-heavy drinkers and late-onset-heavy drinkers, he concluded that 32 per cent of the heavy drinkers on the Bowery in New York City were early-onset drinkers or drinkers who had begun before the age of twenty. Another 42 per cent began between the ages of twenty and

thirty-four. As a consequence, the observation was made that teen-age drinking was not so much the problem as were the reasons why teen-agers drank, how they drank, and to what drinking might lead in adult life if they were not given a healthy attitude toward alcohol.

Numerous authors contained in this investigation made a direct statement on the need for education in alcohol. Bacon and Straus (1953) wrote:

> It is our belief that colleges, together with the high schools and universities can fulfill a highly significant function in aiding our society to achieve a firmer, more effective, and better integrated morality concerning drinking and its related problems. One of the prerequisites for reaching this goal is to develop a well-oriented, disciplined and relevant knowledge and present it to the younger generation in an objective, intelligible, organized and emotionally meaningful fashion.

Furthermore, McCarthy (1965) proposed: "The decision to drink or not to drink, then, should be based on knowledge rather than outside pressures and the advice of friends, and it is an important responsibility of the school to provide both the information and the forum for its free discussion." Next, Giovannangeli (1966) reported: "It's important that present day youngsters have knowledge about the effects of alcohol, and further understand the potential hazards involved in the use of alcoholic beverages before being faced with the decisions to drink or not to drink." Finally, Russell (1969) added more than just a factual presentation of alcohol to teen-agers:

> Teachers constitute the vital force in alcohol education conducted in schools and colleges. . . . The notion persists, however, that the teacher's responsibility, in alcohol education is to present the facts. So the hypothesis for change would not consist of

telling teachers not to lecture but, rather, would involve them actively in educational experiences as like those considered desirable for student learning as possible.

From the evidence presented, the observation was made that all of these experts on alcohol indicated a definite need for not only further but also better education of American teen-agers on the subject of alcohol.

## Summary

This chapter was concerned with the review of related literature and was presented under three headings: (1) the research related directly to the topic; (2) the problem of teen-age drinking in general; and (3) the need for further and better education about alcohol in the schools. The basic study consulted was that of Nelson (1967) because it was the basis for this research. However, that study was not used as a replication but, rather, as a suggested idea.

# CHAPTER III

## DESCRIPTION OF THE STUDY

### Introduction

This chapter dealt with procedures used in conducting the study. The problem was to determine drinking habits of Montana teen-agers and to ascertain how much they knew about the facts of alcohol. Thus, this chapter was presented under six headings: (1) the population description and sampling procedure; (2) the method of data collection; (3) the method of organizing the data; (4) the analysis of the data; (5) the precautions taken for accuracy; and (6) the summary of the chapter.

### The Population Description

The population surveyed constituted students in the sophomore, the junior, and the senior classes of four Montana high schools. The first high school was a large city school with a population of 507. The second school was a town school with a total population of 210. School number three was a small rural school with a total population of 70 of which the majority were predominantly Indians. The fourth school was another small rural school with 65 students. Questionnaires were administered by the researcher to 29 students or more in each of the top three grades in the large city and town schools. These questionnaires

were given to all of the students present in the upper three grades in the other two schools. The total was 287 students. By sampling these four high schools of varying size, the researcher suggested that the sample might be considered as representative of schools of similar size and location throughout the State of Montana.

## Method of Collecting Data

The data necessary to complete this study were collected by a questionnaire as indicated in Appendix A. The first three questions determined the class and the sex of the student as well as the size of the school attended. In the next twelve questions, the drinking practices of the students were established. The final twenty questions were constructed to be graded as a test suggesting the amount of knowledge about alcohol that the students had assimilated. The researcher administered the questionnaire, gave the directions, collected the results, and informed the students of the correct answers; thereby, he, possibly, added to their knowledge of the subject.

## Method of Organizing the Data

The data were organized into tables which contained class, sex, and size of school of the subjects as categories. The first twelve questions were studied, according to the answers, by size of school, class, and sex. Then, they were evaluated by percentage correct, wrong, and "don't know" answers and listed under the three categories.

The data were presented by percentage and by the mean score. The first fifteen questions, excluding the three on class, sex, and size of the school, were analyzed by the percentage of students who answered each question. Then, the percentages were listed in the tables under the class, size of school, and sex. The second twenty questions, to ascertain the students' knowledge of alcohol, were reported by percentage as were the first twelve questions. In addition, points were assigned to each of the three possible answers in each of the last twenty questions. Two points were given for a correct answer, no points were given for an undecided or "don't know" answer, and minus one point was given for a wrong answer. A perfect score was forty points, but a completely wrong test resulted in a grade of minus twenty. Therefore, the range was sixty points. The scores between negative 20 and positive 40 were reported, on a separate table, by grade, sex, and size of school.

## Precautions Taken for Accuracy

The test were scored automatically by a keypunch operator. The categorizing and percentages were done by computer. Hence, the margin of error was negligible.

## Summary

In this chapter, the researcher presented the methods employed in this study. A questionnaire, consisting of thirty-six questions, was

administered to 287 high school students of the sophomore, the junior, and the senior classes of a city, a town, and two rural schools. The first three questions dealt with general information; the second twelve questions pertained to the personal drinking habits of the students; the next twenty questions indicated the students' knowledge of the physiological effects of alcohol on the body; and a last single opinion question was given to ask if the student felt that his school was teaching the subject of the effects of alcohol well. The twenty questions used to ascertain the students' knowledge of the physiological effects of alcohol were scored as a test and reported by mean score. The first twelve questions, as well as the next twenty questions, were reported and charted by percentage and grouped by class, sex, and size of school.

# CHAPTER IV

## FINDINGS OF THE STUDY

### Introduction

Chapter IV is the presentation and interpretation of the data collected through the use of the questionnaire administered to 287 Montana high school students. The data obtained are reported by percentage of students surveyed and presented by size of school, sex, and grade. The data are presented in thirty-four tables stating the item of the questionnaire and the response percentages. The percentages are reported to the nearest whole number. There are a number of responses that the students omitted either because they did not drink or because he or she did not choose to respond for personal reasons. The data in each table are discussed in a summary form that becomes the text.

### Presentation of Data

The population of the rural schools was so small that a deviant answer could alter the percentages even though the entire enrollment present was surveyed on the day the questionnaire was administered. Such an effect was evidenced by the negative response percentage (Table 1) of the male, rural Indian seniors (25 per cent) and the female, rural seniors (75 per cent). The main fact that is presented in Table 1 is

the percentage among the Montana high school students surveyed. Of the 287 students surveyed, only thirteen did not drink (27 per cent). The largest number of non-drinkers came from the male population in the rural and town school sophomore classes, the female juniors in the town school, the male seniors in the rural Indian school and the female seniors in the rural school. Table 1 reveals that more girls had tasted alcoholic beverages than had the boys. There were, however, more boys surveyed than girls, thus reflecting the class makeup (160 boys to 127 girls).

TABLE 1

RESULTS OF QUESTION ONE, PART TWO--"HAVE YOU EVER DRUNK AN ALCOHOLIC BEVERAGE?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 100 | 88 | 84 | 93 | 100 | 100 | 83 | 100 |
| | No | 00 | 11 | 15 | 06 | 00 | 00 | 16 | 00 |
| Junior | Yes | 100 | 100 | 100 | 92 | 100 | 100 | 100 | 100 |
| | No | 00 | 00 | 07 | 00 | 00 | 00 | 00 | 00 |
| Senior | Yes | 95 | 100 | 100 | 100 | 75 | 100 | 100 | 75 |
| | No | 04 | 00 | 00 | 00 | 25 | 00 | 00 | 25 |

Table 2 shows how the students obtain their alcoholic beverages. Most male students obtained their alcoholic beverages from persons of legal age who purchased it for them or bought it and resold it to them at

an increased price. The girls, however, obtained their drinks from friends their own age. The sophomore girls in the city and town schools and the senior girls in the rural school had a large percentage reporting that they received alcoholic beverages from their parents.

TABLE 2

RESULTS OF QUESTION NUMBER TWO, PART TWO--"HOW DO YOU OBTAIN THE ALCOHOLIC BEVERAGES THAT YOU DRINK?"-- ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | 1 | 00 | 00 | 00 | 00 | 00 | 11 | 00 | 00 |
| | 2 | 28 | 23 | 11 | 25 | 20 | 22 | 16 | 70 |
| | 3 | 07 | 35 | 23 | 33 | 00 | 11 | 00 | 10 |
| | 4 | 57 | 11 | 26 | 18 | 80 | 44 | 00 | 10 |
| | 5 | 07 | 17 | 23 | 06 | 00 | 11 | 83 | 10 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |
| Junior | 1 | 05 | 00 | 00 | 00 | 16 | 00 | 00 | 00 |
| | 2 | 33 | 20 | 17 | 46 | 33 | 50 | 00 | 50 |
| | 3 | 16 | 26 | 04 | 07 | 00 | 12 | 50 | 33 |
| | 4 | 44 | 33 | 60 | 30 | 50 | 37 | 50 | 16 |
| | 5 | 00 | 20 | 13 | 07 | 00 | 00 | 00 | 00 |
| | Omit | 00 | 00 | 04 | 07 | 00 | 00 | 00 | 00 |
| Senior | 1 | 09 | 00 | 00 | 00 | 00 | 00 | 20 | 00 |
| | 2 | 18 | 14 | 33 | 50 | 25 | 33 | 00 | 12 |
| | 3 | 04 | 57 | 00 | 33 | 00 | 00 | 00 | 50 |
| | 4 | 54 | 28 | 59 | 00 | 50 | 50 | 80 | 00 |
| | 5 | 09 | 00 | 07 | 16 | 25 | 16 | 00 | 12 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers: (1) buy it yourself; (2) from friends your own age; (3) from your parents; (4) from person of legal age who buys for you; and (5) from other sources.

The percentages of how often each individual drinks an alcoholic beverage are presented in Table 3. Although most of the teen-agers responding reported themselves to be partakers of alcoholic beverages, only a small percentage were heavy drinkers or drank more than once a week. The highest percentage of students who drank more than once a week was obtained from the junior male group in the rural school. However, the percentage (25 per cent) is indicated because only four students were surveyed in that group. A more reliable figure was the 14 per cent of the male sophomores in the city school who drank more than once a week since this was a larger N. Most female students responding drank only one to four times a year and the male students were distributed over three responses; one to four times a year, once a month, and two to three times a month.

TABLE 3

RESULTS OF QUESTION NUMBER THREE, PART TWO--"HOW OFTEN DO YOU DRINK?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | 1 | 14 | 05 | 03 | 18 | 00 | 11 | 00 | 10 |
| | 2 | 07 | 47 | 42 | 62 | 20 | 22 | 33 | 40 |
| | 3 | 14 | 17 | 07 | 06 | 40 | 11 | 50 | 20 |
| | 4 | 28 | 17 | 23 | 06 | 40 | 44 | 16 | 30 |
| | 5 | 21 | 00 | 07 | 00 | 00 | 11 | 00 | 00 |
| | 6 | 14 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |

TABLE 3 (continued)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Junior | 1 | 05 | 00 | 00 | 07 | 00 | 00 | 00 | 16 |
| | 2 | 33 | 53 | 21 | 30 | 33 | 37 | 50 | 66 |
| | 3 | 16 | 26 | 34 | 07 | 16 | 25 | 00 | 16 |
| | 4 | 16 | 20 | 21 | 38 | 16 | 25 | 25 | 00 |
| | 5 | 27 | 00 | 21 | 07 | 35 | 12 | 00 | 00 |
| | 6 | 00 | 00 | 00 | 00 | 00 | 00 | 25 | 00 |
| | | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | 1 | 00 | 00 | 00 | 16 | 50 | 16 | 20 | 12 |
| | 2 | 18 | 42 | 14 | 66 | 25 | 16 | 00 | 62 |
| | 3 | 13 | 42 | 25 | 00 | 00 | 33 | 20 | 00 |
| | 4 | 36 | 14 | 29 | 16 | 25 | 16 | 20 | 00 |
| | 5 | 22 | 00 | 25 | 00 | 00 | 16 | 40 | 00 |
| | 6 | 04 | 00 | 03 | 00 | 00 | 00 | 00 | 00 |
| | | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers to question three, part two: (1) I don't; (2) 1 to 4 times a year; (3) once a month; (4) two or three times a month; (5) once a week; and (6) several times a week.

Table 4 is concerned with the awareness of the parents about the drinking of alcoholic beverages by their child. With the exception of the females in the rural Indian school, the parents of the teen-agers who were surveyed--sophomores, juniors, and seniors--became increasingly aware that their sons or their daughters drank as the teen-ager began to mature. This parental response, or reaction, appears to be plausible because the more frequently that the teen-ager drank, then, the more likely that he was to be placed in a position wherein he would be caught in the act of drinking.

TABLE 4

RESULTS OF QUESTION NUMBER FOUR, PART TWO--"ARE YOUR PARENTS AWARE THAT YOU DRINK?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 50 | 52 | 46 | 37 | 60 | 77 | 66 | 50 |
| | No | 47 | 35 | 38 | 50 | 40 | 22 | 33 | 50 |
| | Omit | 07 | 11 | 15 | 12 | 00 | 00 | 00 | 00 |
| Junior | Yes | 61 | 66 | 69 | 61 | 83 | 50 | 100 | 66 |
| | No | 38 | 33 | 26 | 30 | 16 | 50 | 00 | 33 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | Yes | 72 | 71 | 77 | 75 | 75 | 50 | 100 | 62 |
| | No | 22 | 28 | 22 | 25 | 25 | 50 | 00 | 12 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers to question four, part two: (1) yes; (2) no; and (3) omit.

Parental approval of drinking is presented in Table 5. A majority of the responses show that the parents did not approve of their teenager drinking. Only three groups revealed a majority of parental sanction:

1. The male, sophomore, rural Indian student.
2. The female, senior students in the city and in the rural school.
3. The sophomore, male, Indian students, however, claimed a 100 per cent approval.

This question was, of course, a subjective one and was polled only on how the students surveyed perceived themselves.

TABLE 5

RESULTS OF QUESTION NUMBER FIVE, PART TWO--"DO YOUR PARENTS, OR WOULD THEY IF THEY KNEW, APPROVE OF YOUR DRINKING?"-- ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS (in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 21 | 11 | 19 | 18 | 100 | 22 | 33 | 10 |
| | No | 78 | 76 | 65 | 68 | 00 | 77 | 66 | 90 |
| | Omit | 00 | 11 | 15 | 12 | 00 | 00 | 00 | 00 |
| Junior | Yes | 16 | 40 | 21 | 07 | 00 | 37 | 50 | 33 |
| | No | 77 | 60 | 78 | 84 | 100 | 62 | 50 | 66 |
| | Omit | 05 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | Yes | 22 | 57 | 18 | 16 | 25 | 16 | 20 | 62 |
| | No | 72 | 42 | 77 | 75 | 75 | 83 | 80 | 12 |
| | Omit | 04 | 00 | 03 | 08 | 00 | 00 | 00 | 25 |

[a]Possible answers to question five, part two: (1) yes; (2) no; (3) omit.

According to the way that teen-agers perceive their friends, Table 6 shows that "act grown up" was not one of their primary reasons for drinking. "To act grown up" was a majority response with only the female juniors and seniors of the rural school. Most of the students surveyed thought that their friends drank mainly "for fun." It was assumed that "for fun" would be a repetitious response in the rural

schools where community activities and entertainments are few, but these assumptions were not upheld. It did become a repeated response in the city and town schools which are located in communities with an abundance of activities.

Another fact obtained was that few teen-agers were of the opinion that their friends liked the taste of alcoholic beverages. In only four groups did over 50 per cent or over choose the response "They like it," the city, male sophomores, the city, female juniors, the male, rural sophomores, and the male, rural Indian juniors.

TABLE 6

RESULTS OF QUESTION NUMBER SIX, PART TWO--"IF YOUR FRIENDS DRINK, WHY DO THEY?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomores | 1 | 50 | 17 | 11 | 25 | 20 | 33 | 50 | 20 |
| | 2 | 00 | 05 | 11 | 06 | 00 | 00 | 00 | 10 |
| | 3 | 42 | 58 | 42 | 37 | 40 | 55 | 50 | 50 |
| | 4 | 07 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | 5 | 00 | 05 | 11 | 12 | 20 | 11 | 00 | 10 |
| | 6 | 00 | 00 | 07 | 12 | 00 | 00 | 00 | 00 |
| | Omit | 00 | 11 | 15 | 06 | 20 | 00 | 00 | 10 |
| Juniors | 1 | 38 | 53 | 21 | 07 | 50 | 25 | 25 | 16 |
| | 2 | 05 | 06 | 08 | 07 | 00 | 00 | 25 | 33 |
| | 3 | 38 | 20 | 47 | 53 | 00 | 62 | 50 | 33 |
| | 4 | 05 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | 5 | 11 | 06 | 08 | 07 | 33 | 12 | 00 | 16 |

TABLE 6 (continued)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| | 6 | 00 | 13 | 13 | 15 | 16 | 00 | 00 | 00 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Seniors | 1 | 31 | 42 | 29 | 16 | 25 | 16 | 20 | 00 |
| | 2 | 04 | 00 | 00 | 00 | 00 | 00 | 20 | 50 |
| | 3 | 36 | 42 | 55 | 33 | 75 | 66 | 60 | 12 |
| | 4 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | 5 | 03 | 00 | 03 | 25 | 00 | 16 | 00 | 12 |
| | 6 | 09 | 18 | 11 | 25 | 00 | 00 | 00 | 00 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers to question number six, part two: (1) they like it; (2) to act grown up; (3) for fun; (4) for courage or nerve; (5) social pressure (to avoid being left out); and (6) other.

The responses to "Why do you drink?" shown in Table 7 indicated that the students knew their friends well. When they were asked: "If your friends drink, why do they?" they responded most frequently "for fun" as revealed in Table 6, page 26 to page 27. This was also the students' most frequent response to "Why do you drink?" The boys, however, had a tendency to see their frequent companions, or friends, drinking "for fun" and themselves drinking because "I like it." The girls took a stand opposite the boys. They revealed that they believed their friends liked alcoholic beverages more than they personally claimed that they did themselves. Table 7 indicates these observations to be valid. Many answers, however, were the number six choice, or "other." The

students apparently did not identify with any of the responses or the responses they thought of were not related directly to the choices given and they chose the "other" response.

TABLE 7

RESULTS OF QUESTION NUMBER SEVEN, PART TWO--"WHY DO YOU DRINK?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | 1 | 64 | 23 | 23 | 06 | 40 | 33 | 50 | 20 |
| | 2 | 00 | 00 | 00 | 00 | 00 | 11 | 00 | 10 |
| | 3 | 21 | 52 | 42 | 31 | 40 | 33 | 50 | 50 |
| | 4 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | 5 | 07 | 00 | 03 | 00 | 20 | 11 | 00 | 00 |
| | 6 | 07 | 11 | 15 | 56 | 00 | 11 | 00 | 00 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 10 |
| Juniors | 1 | 50 | 26 | 47 | 30 | 16 | 00 | 00 | 16 |
| | 2 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | 3 | 27 | 33 | 39 | 23 | 00 | 75 | 50 | 50 |
| | 4 | 05 | 00 | 00 | 00 | 00 | 00 | 00 | 16 |
| | 5 | 05 | 00 | 04 | 00 | 33 | 00 | 00 | 00 |
| | 6 | 11 | 40 | 08 | 38 | 50 | 25 | 50 | 16 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Seniors | 1 | 27 | 42 | 37 | 08 | 00 | 00 | 20 | 00 |
| | 2 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | 3 | 36 | 42 | 42 | 33 | 25 | 33 | 06 | 25 |
| | 4 | 00 | 14 | 14 | 00 | 00 | 00 | 00 | 00 |
| | 5 | 09 | 00 | 00 | 08 | 25 | 16 | 00 | 00 |
| | 6 | 22 | 00 | 00 | 50 | 50 | 33 | 20 | 50 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 16 | 00 | 25 |

[a]Possible answers to question number seven, part two: (1) I like it; (2) I want to act grown up; (3) for fun; (4) for courage or nerve; (5) social pressures (to avoid being left out); (6) other.

Table 8 shows that a large percentage of the boys and about 50 per cent of the girls surveyed had been intoxicated. In most cases, incidence of intoxication grew from the sophomore through the senior year. It should be noted that the highest and the lowest incidence of intoxication came from the same class in the same school: the senior, rural school male (100 per cent "yes") and the senior, rural school female (12 per cent "yes").

TABLE 8

RESULTS OF QUESTION NUMBER EIGHT, PART TWO--"HAVE YOU EVER BEEN DRUNK?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | 1 | 78 | 35 | 53 | 25 | 80 | 66 | 66 | 60 |
| | 2 | 21 | 41 | 30 | 68 | 00 | 11 | 16 | 30 |
| | 3 | 00 | 11 | 00 | 00 | 20 | 22 | 16 | 10 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |
| Junior | 1 | 77 | 46 | 73 | 61 | 83 | 75 | 50 | 50 |
| | 2 | 22 | 46 | 21 | 30 | 16 | 25 | 50 | 50 |
| | 3 | 00 | 06 | 04 | 00 | 00 | 00 | 00 | 00 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | 1 | 86 | 71 | 92 | 33 | 50 | 83 | 100 | 12 |
| | 2 | 09 | 28 | 07 | 66 | 50 | 16 | 00 | 62 |
| | 3 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers for question eight, part two: (1) yes, (2) no, (3) don't know, and (4) omit.

Male students proved to be the biggest offenders of the practice of driving while intoxicated. The review of literature for this study indicated that the most negative factors of teen-aged drinking were the present dangers of intoxication. Driving while drunk was one of the most fatal dangers mentioned. Table 9 shows that a large proportion of male drinkers drive while drinking.

TABLE 9

RESULTS OF QUESTION NUMBER NINE, PART TWO--"HAVE YOU EVER DRIVEN WHILE INTOXICATED?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 64 | 11 | 23 | 06 | 20 | 22 | 83 | 20 |
| | No | 35 | 76 | 61 | 87 | 80 | 77 | 16 | 80 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |
| Juniors | Yes | 38 | 13 | 65 | 07 | 66 | 25 | 50 | 16 |
| | No | 61 | 86 | 34 | 84 | 33 | 75 | 50 | 83 |
| | Omit | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| Seniors | Yes | 50 | 14 | 74 | 16 | 75 | 33 | 100 | 00 |
| | No | 45 | 85 | 25 | 83 | 25 | 66 | 00 | 75 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |

[a]Possible answers to question nine, part two: (1) yes, (2) no, and (3) omit.

The questions in Tables 10, 11, and 12 are questions that if any one were answered "yes" could indicate that the person answering in the

affirmative might have potential drinking problems that are common to people in the pre-alcoholic stage. An affirmative answer, however, does not indicate an alcoholic positively. Question ten, in Table 10, asks if the student ever "gulps drinks to get high quickly?" Many of the students, although not the majority, answered "yes." The highest percentage of "yes" answers came from the male, sophomore, city school students (71 per cent) and the female, senior, city school students (71 per cent). The lowest percentage of "yes" answers came from the male, sophomore and junior rural Indian school students (00 per cent).

TABLE 10

RESULTS OF QUESTION TEN, PART TWO--"DO YOU EVER GULP DRINKS TO GET HIGH QUICKLY?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 71 | 29 | 23 | 00 | 00 | 44 | 33 | 40 |
| | No | 28 | 58 | 61 | 93 | 100 | 55 | 66 | 60 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |
| Junior | Yes | 44 | 33 | 34 | 15 | 00 | 37 | 25 | 33 |
| | No | 55 | 66 | 65 | 76 | 100 | 62 | 75 | 66 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | Yes | 40 | 71 | 55 | 16 | 25 | 50 | 80 | 12 |
| | No | 54 | 28 | 44 | 83 | 75 | 50 | 20 | 62 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers to question ten, part two: (1) yes, (2) no, (3) omit.

A high percentage, shown in Table 11, although again not a majority of students, answered "yes" to the question: "Have you ever blacked out from drinking?" One of the highest percentages was again in the male, sophomore, city students (42 per cent). The female, rural Indian sophomores (44 per cent) and seniors (66 per cent) and the male, rural seniors (6 per cent) were also groups that had high "black out" numbers.

TABLE 11

RESULTS OF QUESTION ELEVEN, PART TWO--"HAVE YOU EVER BLACKED OUT FROM DRINKING?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 42 | 17 | 23 | 00 | 00 | 44 | 16 | 20 |
| | No | 57 | 70 | 61 | 93 | 100 | 55 | 83 | 80 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |
| Junior | Yes | 22 | 13 | 34 | 30 | 00 | 37 | 25 | 16 |
| | No | 77 | 86 | 65 | 61 | 100 | 62 | 75 | 83 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | Yes | 18 | 14 | 29 | 00 | 00 | 66 | 60 | 12 |
| | No | 77 | 85 | 70 | 100 | 100 | 33 | 40 | 62 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers to question eleven, part two: (1) yes, (2) no, and (3) omit.

However, disregarding all signs of potential alcoholism indicated in questions ten and eleven, question twelve, as shown in Table 12,

shows the students to be quite unconcerned about becoming alcoholics. Oddly enough, the most concerned group, the male, rural Indian seniors should not have been concerned according to their responses to questions ten and eleven. Two of the most oblivious groups to question twelve, the male, city sophomores and the male, rural seniors should have had, according to their responses to questions ten and eleven, much more concern.

TABLE 12

RESULTS OF QUESTION TWELVE, PART TWO--"ARE YOU WORRIED ABOUT BECOMING AN ALCOHOLIC?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| Grade | Ans[a] | City | | Town | | Rural Indian | | Rural | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female | Male | Female |
| Sophomore | Yes | 07 | 00 | 00 | 00 | 00 | 44 | 00 | 00 |
| | No | 92 | 88 | 84 | 93 | 100 | 55 | 100 | 100 |
| | Omit | 00 | 11 | 15 | 06 | 00 | 00 | 00 | 00 |
| Junior | Yes | 22 | 00 | 00 | 00 | 16 | 00 | 25 | 00 |
| | No | 77 | 100 | 100 | 92 | 83 | 100 | 75 | 100 |
| | Omit | 00 | 00 | 00 | 07 | 00 | 00 | 00 | 00 |
| Senior | Yes | 04 | 14 | 07 | 00 | 75 | 33 | 00 | 00 |
| | No | 90 | 85 | 92 | 100 | 25 | 66 | 100 | 75 |
| | Omit | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 25 |

[a]Possible answers to question number twelve, part two: (1) yes, (2) no, and (3) omit.

Following are twenty tables from part three of the questionnaire. They deal with students' knowledge of the chemical composition of alcoholic beverages and the physiological effects of alcohol. For each item there were three possible responses, "True," "False," and "Don't Know." Students were instructed not to guess but to respond "True" or "False" if absolutely sure. A plus two score was assigned to each correct answer, a minus one to each wrong one, and a zero to each "Don't Know." Possible range of scores was from minus twenty to plus forty. Responses are given in Tables 13 through 33 and coded "Right," "Wrong," and "Don't Know (DK). In Table 34 the mean score of each group surveyed is reported. Results of the responses to the question: "Distilled liquor contains 40-50% alcohol" are in Table 13. There were few "True" or correct answers to this, indicating that students did not have an adequate knowledge of the alcoholic content of liquor.

TABLE 13

RESULTS OF QUESTION ONE, PART THREE--"DISTILLED LIQUOR CONTAINS 40-50% ALCOHOL"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 21 | 05 | 27 | 00 | 18 | 00 |
| | Wrong | 21 | 11 | 33 | 06 | 45 | 28 |
| | DK | 57 | 82 | 38 | 93 | 36 | 71 |

TABLE 13 (continued)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| Town | Right | 23 | 18 | 17 | 07 | 18 | 00 |
| | Wrong | 07 | 06 | 34 | 07 | 25 | 00 |
| | DK | 69 | 75 | 47 | 84 | 55 | 100 |
| Rural Indian | Right | 00 | 22 | 00 | 00 | 25 | 00 |
| | Wrong | 00 | 11 | 50 | 12 | 25 | 33 |
| | DK | 100 | 66 | 50 | 87 | 50 | 66 |
| Rural | Right | 16 | 00 | 00 | 00 | 40 | 12 |
| | Wrong | 33 | 00 | 25 | 00 | 20 | 12 |
| | DK | 50 | 100 | 75 | 100 | 40 | 75 |

The responses to the statement--"Drinking alcoholic beverages increases the body temperature."--are reported in Table 14. The correct answer is "false." The temperature of the body, if it varies at all while the individual is indulging in the drinking of alcoholic beverages, lowers.[1] Again, the students who were surveyed--sophomores, juniors, and seniors in four high schools in Montana--demonstrated a lack of knowledge. In this particular section of the questionnaire, the lack of knowledge was concerned with the physiological effects of alcohol on the human body. Most of the answers which were given on the questionnaire were either "Don't Know" or incorrect. Students obviously believed that as the alcohol caused them to feel exhilarated, temperature increased.

TABLE 14

RESULTS OF QUESTION TWO, PART THREE--"DRINKING ALCOHOLIC BEVERAGES INCREASES THE BODY TEMPERATURE"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 14 | 00 | 16 | 00 | 04 | 14 |
| | Wrong | 21 | 58 | 55 | 53 | 54 | 85 |
| | DK | 64 | 41 | 27 | 46 | 40 | 00 |
| Town | Right | 26 | 00 | 21 | 07 | 33 | 00 |
| | Wrong | 38 | 25 | 47 | 61 | 44 | 58 |
| | DK | 34 | 75 | 30 | 30 | 22 | 41 |
| Rural Indian | Right | 20 | 22 | 16 | 00 | 00 | 00 |
| | Wrong | 00 | 11 | 66 | 50 | 25 | 16 |
| | DK | 80 | 66 | 16 | 50 | 75 | 83 |
| Rural | Right | 00 | 10 | 00 | 00 | 00 | 00 |
| | Wrong | 00 | 10 | 25 | 00 | 20 | 37 |
| | DK | 100 | 80 | 75 | 100 | 80 | 62 |

Table 15 illustrates that the students were knowledgeable about what constitutes an alcoholic. The statement presented to the students was the following: "A person is an alcoholic when he or she develops an emotional and physical dependence on alcohol." The correct response to this particular statement was "true." On this particular item of the questionnaire no more than 14 per cent of any group responded in an incorrect manner, and no more than 25 per cent responded "Don't Know."

TABLE 15

RESULTS OF QUESTION THREE, PART THREE--"A PERSON IS AN ALCOHOLIC WHEN HE OR SHE DEVELOPS AN EMOTIONAL AND PHYSICAL DEPENDENCE ON ALCOHOL"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 71 | 94 | 88 | 93 | 90 | 71 |
| | Wrong | 14 | 05 | 05 | 00 | 04 | 14 |
| | DK | 14 | 00 | 05 | 06 | 04 | 14 |
| Town | Right | 96 | 87 | 91 | 92 | 92 | 100 |
| | Wrong | 00 | 12 | 04 | 00 | 07 | 00 |
| | DK | 03 | 00 | 04 | 07 | 00 | 00 |
| Rural Indian | Right | 100 | 100 | 83 | 87 | 75 | 83 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 00 | 00 | 16 | 12 | 25 | 16 |
| Rural | Right | 100 | 90 | 100 | 83 | 100 | 100 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 00 | 10 | 00 | 16 | 00 | 00 |

To the statement in the questionnaire: "One out of thirteen drinkers becomes an alcoholic." most of the teen-agers surveyed responded "Don't Know." The correct response to this statement was "true." This response thus indicated that a majority of the students in the Montana high schools surveyed apparently did not realize the widespread problem of alcoholism. Table 16 illustrates the responses by the students surveyed to the statement.

TABLE 16

RESULTS OF QUESTION FOUR, PART THREE--"ONE OUT OF THIRTEEN DRINKERS BECOMES AN ALCOHOLIC"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS (in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 07 | 05 | 16 | 06 | 18 | 28 |
| | Wrong | 00 | 05 | 00 | 00 | 00 | 00 |
| | DK | 92 | 88 | 83 | 93 | 81 | 71 |
| Town | Right | 03 | 18 | 00 | 15 | 07 | 08 |
| | Wrong | 00 | 06 | 30 | 15 | 07 | 08 |
| | DK | 96 | 75 | 69 | 69 | 85 | 83 |
| Rural Indian | Right | 00 | 11 | 33 | 12 | 25 | 00 |
| | Wrong | 20 | 22 | 00 | 00 | 00 | 16 |
| | DK | 80 | 66 | 66 | 87 | 75 | 83 |
| Rural | Right | 00 | 10 | 25 | 00 | 20 | 12 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 100 | 90 | 75 | 100 | 80 | 87 |

Most of the students questioned realized that "An alcoholic must never drink again if he is to become rehabilitated." Table 17 reveals that the only groups which did not know the correct response were the male, town juniors and the male, rural sophomores. A number of students were undecided about their responses to this statement in the questionnaire. The correct response to this statement was "true." Students did not really have the knowledge which was necessary to make a correct choice on this statement.

TABLE 17

RESULTS OF QUESTION FIVE, PART THREE--"AN ALCOHOLIC MUST NEVER DRINK AGAIN IF HE IS TO BECOME REHABILITATED"-- ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS (in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 42 | 41 | 61 | 40 | 63 | 85 |
| | Wrong | 21 | 23 | 11 | 20 | 18 | 14 |
| | DK | 35 | 35 | 27 | 40 | 18 | 00 |
| Town | Right | 30 | 43 | 34 | 53 | 51 | 33 |
| | Wrong | 15 | 25 | 43 | 07 | 22 | 33 |
| | DK | 53 | 31 | 21 | 38 | 25 | 33 |
| Rural Indian | Right | 100 | 44 | 50 | 25 | 25 | 33 |
| | Wrong | 00 | 11 | 16 | 00 | 25 | 16 |
| | DK | 00 | 44 | 33 | 75 | 50 | 50 |
| Rural | Right | 16 | 30 | 100 | 66 | 80 | 87 |
| | Wrong | 50 | 50 | 00 | 00 | 00 | 00 |
| | DK | 33 | 20 | 00 | 33 | 20 | 12 |

Table 18 reports the results on the statement that asks if the teen-agers surveyed knew that, for them, "the most immediate danger in drinking is intoxication (drunkenness) and the dangers it causes." The correct response to the question was "true" and well over 50 per cent of the students surveyed were correct in their responses. Such a response indicated that the students surveyed did understand the dangers inherent in driving while under the influence of alcoholic beverages. On the

other hand, the students surveyed still continued to drink even in the face of such dangers.

TABLE 18

RESULTS OF QUESTION SIX, PART THREE--"FOR YOUNG PEOPLE THE MOST IMMEDIATE DANGER IN DRINKING IS INTOXICATION (DRUNKENNESS) AND THE DANGERS IT CAUSES"-- ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS (in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 57 | 58 | 44 | 73 | 54 | 57 |
| | Wrong | 14 | 11 | 22 | 20 | 09 | 28 |
| | DK | 28 | 29 | 33 | 06 | 36 | 14 |
| Town | Right | 69 | 68 | 82 | 69 | 66 | 66 |
| | Wrong | 11 | 12 | 08 | 07 | 14 | 00 |
| | DK | 19 | 18 | 08 | 23 | 18 | 33 |
| Rural Indian | Right | 60 | 66 | 66 | 62 | 50 | 66 |
| | Wrong | 00 | 00 | 16 | 00 | 00 | 16 |
| | DK | 40 | 33 | 16 | 37 | 50 | 16 |
| Rural | Right | 33 | 60 | 50 | 16 | 40 | 62 |
| | Wrong | 16 | 00 | 25 | 16 | 00 | 00 |
| | DK | 50 | 40 | 25 | 66 | 60 | 37 |

According to Table 19, which presents the response to the statement number seven, part two of the questionnaire, some students are well aware that "alcoholism is classed as a disease by the American Medical Association." In reference to this, 71 per cent of the male, city

sophomores, 72 per cent of the male, city juniors, 81 per cent of the male, city seniors, 75 per cent of the male, rural juniors, and 100 per cent of the male, rural seniors responded "True" which was the correct answer. However, 23 per cent of the male, town sophomores, 37 per cent of the female, town sophomores, and 30 per cent of the male, town juniors responded incorrectly or "False." There was no set pattern of intellectual development by maturity on this subject.

TABLE 19

RESULTS OF QUESTION SEVEN, PART THREE--"ALCOHOLISM IS CLASSED AS A DISEASE BY THE AMERICAN MEDICAL ASSOCIATION"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 71 | 58 | 72 | 40 | 81 | 71 |
| | Wrong | 00 | 05 | 00 | 00 | 09 | 14 |
| | DK | 28 | 35 | 27 | 60 | 09 | 14 |
| Town | Right | 23 | 37 | 30 | 53 | 62 | 58 |
| | Wrong | 07 | 18 | 21 | 15 | 00 | 00 |
| | DK | 69 | 43 | 47 | 30 | 37 | 41 |
| Rural Indian | Right | 40 | 55 | 66 | 50 | 50 | 66 |
| | Wrong | 20 | 00 | 00 | 00 | 25 | 00 |
| | DK | 40 | 44 | 33 | 50 | 25 | 33 |
| Rural | Right | 50 | 50 | 75 | 50 | 100 | 62 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 50 | 50 | 25 | 50 | 00 | 37 |

As shown in Table 20, with the exception of the male, city sophomores, the female, rural juniors, and the female, rural Indian seniors, well over one-half of the students seemed to know that "Two bottles of beer on an empty stomach affects most people's ability to drive." It was interesting to note that the males especially were aware of the physiological effect of alcohol. Yet, Table 9, page 30, shows that they practiced the dangerous habit of driving while drinking much more than did the female drinkers.

TABLE 20

RESULTS OF QUESTION EIGHT, PART THREE--"TWO BOTTLES OF BEER ON AN EMPTY STOMACH AFFECT MOST PEOPLE'S ABILITY TO DRIVE"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 21 | 41 | 55 | 40 | 54 | 85 |
| | Wrong | 28 | 00 | 22 | 00 | 22 | 14 |
| | DK | 50 | 58 | 22 | 60 | 22 | 00 |
| Town | Right | 42 | 50 | 65 | 53 | 66 | 66 |
| | Wrong | 03 | 06 | 13 | 00 | 14 | 00 |
| | DK | 53 | 43 | 21 | 46 | 18 | 33 |
| Rural Indian | Right | 80 | 44 | 66 | 62 | 50 | 16 |
| | Wrong | 20 | 22 | 16 | 25 | 00 | 00 |
| | DK | 00 | 33 | 16 | 12 | 50 | 83 |
| Rural | Right | 83 | 50 | 75 | 00 | 80 | 50 |
| | Wrong | 00 | 10 | 00 | 00 | 00 | 00 |
| | DK | 16 | 40 | 25 | 100 | 20 | 50 |

Many of the teen-agers surveyed did not know that "Alcohol lowers your sexual inhibitions." Table 21 shows that both male and female students were ignorant of this fact. The females surveyed were especially unaware of this aspect of alcohol.

TABLE 21

RESULTS OF QUESTION NINE, PART THREE--"ALCOHOL LOWERS YOUR SEXUAL INHIBITIONS"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 28 | 00 | 16 | 33 | 50 | 14 |
| | Wrong | 35 | 47 | 55 | 26 | 27 | 42 |
| | DK | 35 | 52 | 27 | 40 | 22 | 42 |
| Town | Right | 15 | 12 | 13 | 07 | 40 | 16 |
| | Wrong | 30 | 37 | 43 | 61 | 40 | 41 |
| | DK | 53 | 50 | 43 | 30 | 18 | 41 |
| Rural Indian | Right | 00 | 11 | 16 | 12 | 25 | 33 |
| | Wrong | 80 | 22 | 50 | 52 | 00 | 33 |
| | DK | 20 | 66 | 33 | 25 | 75 | 33 |
| Rural | Right | 16 | 00 | 00 | 00 | 00 | 25 |
| | Wrong | 16 | 20 | 50 | 16 | 60 | 12 |
| | DK | 66 | 80 | 50 | 83 | 40 | 62 |

To the item "Beer contains a greater percentage of alcohol than fortified wines," many of the students answered "False," which, in this case, was the correct response. However, a great number of teen-agers

chose the "Don't Know" response. A minority chose the wrong or "True" response. The results, which are presented in Table 22, indicated that either the students were absolutely sure about their choice or that they did not have any idea about which response was correct.

TABLE 22

RESULTS OF QUESTION TEN, PART THREE--"BEER CONTAINS A GREATER PERCENTAGE OF ALCOHOL THAN FORTIFIED WINES"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 50 | 23 | 72 | 33 | 59 | 00 |
| | Wrong | 21 | 05 | 00 | 00 | 13 | 14 |
| | DK | 28 | 70 | 27 | 66 | 27 | 85 |
| Town | Right | 50 | 06 | 73 | 23 | 55 | 33 |
| | Wrong | 07 | 12 | 08 | 00 | 00 | 00 |
| | DK | 42 | 81 | 17 | 76 | 44 | 68 |
| Rural Indian | Right | 40 | 33 | 66 | 37 | 75 | 00 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 60 | 66 | 33 | 62 | 25 | 100 |
| Rural | Right | 100 | 10 | 50 | 00 | 60 | 37 |
| | Wrong | 00 | 00 | 50 | 00 | 00 | 12 |
| | DK | 00 | 90 | 00 | 100 | 40 | 50 |

The responses in Table 23 are similar to those in Table 22. The students either were quite positive about the percentage of alcohol in 90 proof liquor which is 45 per cent, or they had no idea and chose the

"Don't Know" response instead of the "False" response which was the correct one.

TABLE 23

RESULTS OF QUESTION ELEVEN, PART THREE--"90-PROOF LIQUOR CONTAINS 15% ALCOHOL"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 64 | 11 | 66 | 20 | 68 | 42 |
| | Wrong | 14 | 00 | 00 | 06 | 04 | 00 |
| | DK | 21 | 88 | 33 | 73 | 27 | 57 |
| Town | Right | 34 | 25 | 43 | 30 | 33 | 16 |
| | Wrong | 07 | 00 | 04 | 00 | 00 | 00 |
| | DK | 57 | 75 | 52 | 69 | 65 | 83 |
| Rural Indian | Right | 20 | 00 | 50 | 12 | 25 | 00 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 80 | 100 | 50 | 87 | 75 | 100 |
| Rural | Right | 83 | 10 | 25 | 16 | 60 | 25 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 16 | 90 | 75 | 83 | 40 | 75 |

The majority of the students surveyed were well aware that alcohol is not a substantial food. Table 24 reveals that only in four groups were the students less than 50 per cent sure that alcohol is not a substantial food and in three groups over 16 per cent responded with "Don't Know."

TABLE 24

RESULTS OF QUESTION TWELVE, PART THREE--"ALCOHOL IS A SUBSTANTIAL FOOD"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 64 | 58 | 33 | 46 | 63 | 71 |
| | Wrong | 07 | 05 | 22 | 20 | 09 | 14 |
| | DK | 28 | 35 | 44 | 33 | 27 | 14 |
| Town | Right | 65 | 56 | 52 | 61 | 62 | 58 |
| | Wrong | 15 | 12 | 08 | 07 | 11 | 00 |
| | DK | 19 | 31 | 39 | 30 | 25 | 41 |
| Rural Indian | Right | 100 | 88 | 66 | 62 | 75 | 83 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 00 | 11 | 33 | 37 | 25 | 16 |
| Rural | Right | 33 | 60 | 25 | 50 | 20 | 62 |
| | Wrong | 16 | 00 | 00 | 00 | 20 | 00 |
| | DK | 50 | 40 | 75 | 50 | 60 | 37 |

The students who were surveyed appeared to be divided on the item which concerned the effect that the speed of drinking has on the rate that alcohol is absorbed into the human body. Table 25 illustrates that the highest rate of correct responses was 75 per cent by the male, rural juniors. The lowest correct rate on question twelve in part three of the questionnaire on the speed of absorption was 20 per cent by the male, rural seniors.

TABLE 25

RESULTS OF QUESTION THIRTEEN, PART THREE--"THE SLOWER YOU DRINK THE LESS RAPIDLY ALCOHOL IS ABSORBED"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 42 | 29 | 69 | 60 | 40 | 42 |
| | Wrong | 28 | 11 | 05 | 06 | 18 | 14 |
| | DK | 28 | 58 | 33 | 33 | 40 | 42 |
| Town | Right | 42 | 50 | 60 | 61 | 51 | 33 |
| | Wrong | 23 | 12 | 04 | 15 | 18 | 00 |
| | DK | 34 | 37 | 34 | 23 | 28 | 66 |
| Rural Indian | Right | 40 | 44 | 66 | 37 | 50 | 66 |
| | Wrong | 20 | 22 | 33 | 12 | 00 | 00 |
| | DK | 40 | 33 | 00 | 50 | 50 | 33 |
| Rural | Right | 66 | 30 | 75 | 50 | 20 | 25 |
| | Wrong | 16 | 20 | 25 | 00 | 40 | 25 |
| | DK | 16 | 50 | 00 | 50 | 40 | 50 |

The teen-agers who were surveyed were quite close to a complete lack of knowledge on the effect the percentage of alcohol in the bloodstream has on the sobriety of the drinker. The item stated that a .40 per cent content of alcohol in the bloodstream would make the drinker feel dizzy. The fact was that a .40 per cent of alcohol in the bloodstream would place the drinker close to a state of unconsciousness.

TABLE 26

RESULTS OF QUESTION FOURTEEN, PART THREE--"IF THE CONCENTRATION OF ALCOHOL IN THE BLOOD REACHES .40 PER CENT, YOU BEGIN TO FEEL DIZZY"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 00 | 00 | 05 | 00 | 09 | 00 |
| | Wrong | 21 | 23 | 00 | 06 | 22 | 28 |
| | DK | 78 | 76 | 94 | 93 | 68 | 71 |
| Town | Right | 03 | 06 | 08 | 07 | 11 | 00 |
| | Wrong | 15 | 06 | 04 | 15 | 18 | 00 |
| | DK | 80 | 87 | 76 | 69 | 69 | 100 |
| Rural Indian | Right | 20 | 00 | 00 | 00 | 00 | 00 |
| | Wrong | 00 | 44 | 50 | 00 | 25 | 16 |
| | DK | 80 | 55 | 50 | 100 | 75 | 83 |
| Rural | Right | 00 | 10 | 00 | 00 | 00 | 12 |
| | Wrong | 16 | 00 | 25 | 00 | 00 | 00 |
| | DK | 83 | 90 | 75 | 100 | 100 | 87 |

The responses given in Table 27 bear out the results of Table 26, for students again were unaware of the dangerous effect that the concentration of alcohol in the bloodstream has on the human body. They did not know that a .50 per cent concentration of alcohol in the bloodstream could cause death. Such response emphasized the lack of knowledge about alcohol on the part of the students surveyed.

TABLE 27

RESULTS OF QUESTION FIFTEEN, PART THREE--"IF THE CONCENTRATION OF ALCOHOL IN THE BLOODSTREAM REACHES .50 PER CENT YOU WILL DIE"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 07 | 00 | 05 | 06 | 22 | 14 |
| | Wrong | 07 | 11 | 00 | 13 | 13 | 28 |
| | DK | 85 | 88 | 94 | 80 | 63 | 57 |
| Town | Right | 07 | 00 | 26 | 00 | 14 | 00 |
| | Wrong | 03 | 12 | 04 | 30 | 07 | 08 |
| | DK | 88 | 87 | 86 | 69 | 77 | 91 |
| Rural Indian | Right | 00 | 22 | 16 | 00 | 00 | 00 |
| | Wrong | 20 | 11 | 16 | 12 | 25 | 50 |
| | DK | 80 | 66 | 66 | 87 | 75 | 50 |
| Rural | Right | 16 | 10 | 25 | 00 | 00 | 00 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 25 |
| | DK | 83 | 90 | 75 | 100 | 100 | 75 |

In Table 28 it is shown that few students were aware of what percentage of alcohol in the bloodstream affects their senses enough to make them become dangerous while driving. In only four groups did the correct response equal or exceed 50 per cent: (1) the male and the female city seniors; (2) the male rural sophomores, and the (3) female, rural Indian seniors. Other students surveyed appeared to lack the knowledge.

TABLE 28

RESULTS OF QUESTION SIXTEEN, PART THREE--"A DRIVER CAN ALWAYS DRIVE SAFELY WITH ONLY A .05 CONCENTRATION OF ALCOHOL IN THE BLOODSTREAM"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 14 | 11 | 33 | 13 | 50 | 57 |
| | Wrong | 14 | 00 | 11 | 06 | 18 | 14 |
| | DK | 71 | 88 | 55 | 80 | 31 | 28 |
| Town | Right | 38 | 31 | 30 | 30 | 22 | 16 |
| | Wrong | 15 | 06 | 13 | 00 | 11 | 00 |
| | DK | 46 | 62 | 56 | 69 | 65 | 83 |
| Rural Indian | Right | 20 | 33 | 83 | 00 | 25 | 66 |
| | Wrong | 00 | 11 | 00 | 25 | 50 | 00 |
| | DK | 80 | 55 | 16 | 75 | 25 | 33 |
| Rural | Right | 50 | 60 | 25 | 33 | 20 | 37 |
| | Wrong | 00 | 00 | 25 | 00 | 00 | 00 |
| | DK | 50 | 40 | 50 | 66 | 80 | 62 |

The responses to the statement--"Alcoholism ranks as one of the United States' top five health problems."--were varied. The students seemed, in most cases, to indicate some knowledge as the percentage of wrong responses was extremely low; the highest was 15 per cent in the female, junior town group. However, Table 29 also illustrates that there were many "Don't Know" responses that accounted for some lack of knowledge about the statement presented.

TABLE 29

RESULTS OF QUESTION SEVENTEEN, PART THREE--"ALCOHOLISM RANKS AS ONE OF THE UNITED STATES' TOP FIVE HEALTH PROBLEMS"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 64 | 58 | 50 | 53 | 45 | 71 |
| | Wrong | 07 | 00 | 05 | 00 | 09 | 00 |
| | DK | 28 | 41 | 44 | 46 | 45 | 28 |
| Town | Right | 65 | 37 | 60 | 46 | 66 | 41 |
| | Wrong | 00 | 00 | 00 | 15 | 00 | 00 |
| | DK | 34 | 62 | 39 | 38 | 32 | 58 |
| Rural Indian | Right | 20 | 55 | 66 | 50 | 50 | 83 |
| | Wrong | 00 | 11 | 00 | 00 | 00 | 00 |
| | DK | 80 | 33 | 33 | 50 | 50 | 16 |
| Rural | Right | 33 | 30 | 75 | 33 | 80 | 87 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 66 | 70 | 25 | 66 | 20 | 12 |

Table 30 reveals that Montana students were not aware of the problem that alcohol presents to their state. Although not many students responded "False" to the statement: "Alcoholism is one of Montana's major health problems." most of them again, as they did on question seventeen, Table 29, selected the "Don't Know" response on the questionnaire. Seemingly, some attention should be given to this facet of the problem.

TABLE 30

RESULTS OF QUESTION EIGHTEEN, PART THREE--"ALCOHOLISM IS ONE OF MONTANA'S MAJOR HEALTH PROBLEMS"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 28 | 17 | 27 | 06 | 31 | 14 |
| | Wrong | 14 | 11 | 05 | 06 | 18 | 14 |
| | DK | 57 | 70 | 66 | 86 | 50 | 71 |
| Town | Right | 23 | 18 | 26 | 15 | 22 | 16 |
| | Wrong | 07 | 00 | 13 | 23 | 07 | 08 |
| | DK | 69 | 81 | 60 | 61 | 69 | 74 |
| Rural Indian | Right | 00 | 11 | 50 | 37 | 50 | 66 |
| | Wrong | 20 | 33 | 16 | 12 | 00 | 00 |
| | DK | 80 | 55 | 33 | 50 | 50 | 33 |
| Rural | Right | 00 | 10 | 00 | 00 | 00 | 37 |
| | Wrong | 00 | 00 | 25 | 00 | 00 | 00 |
| | DK | 100 | 90 | 75 | 100 | 100 | 62 |

The students surveyed varied in their responses to the statement, "If both your parents drink, the chances are that you will drink." The correct response was "True." The responses were almost equally divided between the three possibilities: (1) "True," (2) "False," and (3) "Don't Know." Table 31 reveals the various responses to question nineteen, part three, on the questionnaire, concerned with the relationship between parental drinking and student drinking.

TABLE 31

RESULTS OF QUESTION NINETEEN, PART THREE--"IF BOTH YOUR PARENTS DRINK, THE CHANCES ARE THAT YOU WILL DRINK"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 28 | 41 | 38 | 40 | 40 | 71 |
| | Wrong | 35 | 29 | 27 | 33 | 40 | 28 |
| | DK | 35 | 29 | 33 | 26 | 18 | 00 |
| Town | Right | 19 | 12 | 60 | 30 | 48 | 50 |
| | Wrong | 34 | 62 | 30 | 61 | 18 | 24 |
| | DK | 46 | 25 | 08 | 07 | 32 | 24 |
| Rural Indian | Right | 00 | 44 | 66 | 00 | 00 | 33 |
| | Wrong | 20 | 33 | 16 | 62 | 25 | 50 |
| | DK | 80 | 22 | 16 | 37 | 75 | 16 |
| Rural | Right | 33 | 20 | 00 | 16 | 40 | 75 |
| | Wrong | 16 | 50 | 75 | 00 | 00 | 25 |
| | DK | 50 | 30 | 25 | 83 | 60 | 00 |

The students surveyed in the four Montana high schools did not know that a 1967 investigation reported that there were five million known alcoholics in the United States. Table 32 illustrates that about 90 per cent of the 287 students questioned responded with "Don't Know" to this statement. Question twenty, part three, was "In 1967, 5,000,000 people in the United States were classified as alcoholics." The percentage indicated a need for education in this area.

TABLE 32

RESULTS OF QUESTION TWENTY, PART THREE--"IN 1967, 5,000,000 PEOPLE IN THE UNITED STATES WERE CLASSIFIED AS ALCOHOLICS"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS (in percentage)

| School Size | Answer | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Right | 07 | 05 | 00 | 06 | 18 | 00 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 92 | 94 | 100 | 93 | 81 | 100 |
| Town | Right | 03 | 00 | 08 | 07 | 07 | 00 |
| | Wrong | 00 | 00 | 00 | 00 | 07 | 00 |
| | DK | 96 | 100 | 91 | 92 | 84 | 100 |
| Rural Indian | Right | 00 | 00 | 16 | 12 | 00 | 00 |
| | Wrong | 00 | 00 | 00 | 00 | 25 | 00 |
| | DK | 100 | 100 | 83 | 87 | 75 | 100 |
| Rural | Right | 00 | 00 | 00 | 00 | 00 | 25 |
| | Wrong | 00 | 00 | 00 | 00 | 00 | 00 |
| | DK | 100 | 100 | 100 | 100 | 100 | 75 |

On the questionnaire was the question--"Do you feel that the secondary school system has educated you well on the subject of alcoholism?" A majority of the 287 students surveyed did not feel that the "secondary school system has educated them well on the subject of alcoholism. Table 33 shows the results of their responses, according to city, town, rural Indian, and rural schools surveyed.

TABLE 33

RESULTS OF QUESTION--"DO YOU FEEL THAT THE SECONDARY SCHOOL SYSTEM HAS EDUCATED YOU WELL ON THE SUBJECT OF ALCOHOLISM?"--ANSWERED BY SOPHOMORES, JUNIORS, AND SENIORS IN FOUR MONTANA HIGH SCHOOLS
(in percentage)

| School Size | Answer[a] | Sophomore | | Junior | | Senior | |
|---|---|---|---|---|---|---|---|
| | Score | Male | Female | Male | Female | Male | Female |
| City | Yes | 00 | 00 | 16 | 13 | 04 | 00 |
| | No | 92 | 100 | 66 | 86 | 94 | 85 |
| | D | 07 | 00 | 16 | 00 | 00 | 14 |
| Town | Yes | 03 | 12 | 13 | 00 | 11 | 00 |
| | No | 80 | 81 | 78 | 100 | 77 | 91 |
| | D | 15 | 06 | 08 | 00 | 11 | 08 |
| Rural Indian | Yes | 20 | 11 | 16 | 00 | 00 | 16 |
| | No | 40 | 66 | 00 | 87 | 50 | 66 |
| | D | 40 | 22 | 83 | 12 | 50 | 16 |
| Rural | Yes | 16 | 10 | 25 | 00 | 20 | 00 |
| | No | 66 | 80 | 75 | 83 | 80 | 100 |
| | D | 16 | 10 | 00 | 16 | 00 | 00 |

[a]Answers available: 1. Yes
2. No
3. Don't Know

The Results of the Twenty Item Quiz

The first twenty items in part three of the questionnaire, dealing with the student's "knowledge of alcohol," was scored as a test. Two points were given for a correct response, a negative one point was given

for a wrong response, and zero points were assigned to the "Don't Know" response. The possible range on the test was from minus twenty (-20) to plus forty (+40). Each group was scored on the test and a mean score was computed for each:

1. City sophomores, male and female.
2. City juniors, male and female.
3. City seniors, male and female.
4. Town sophomores, male and female.
5. Town juniors, male and female.
6. Town seniors, male and female.
7. Rural Indian sophomores, male and female.
8. Rural Indian juniors, male and female.
9. Rural Indian seniors, male and female.
10. Rural sophomore, male and female.
11. Rural juniors, male and female.
12. Rural seniors, male and female.

Next, a total mean score was computed for each school and finally a total mean score was reached for the 287 students involved in the study. The total mean was +11.31. The highest mean score, as shown in Table 34, was given to the male, rural Indian juniors, +15.50 and the lowest mean score was received by the female, rural juniors, +8.00. By one-tenth of a point, the city school out-totaled the rural Indian school for total mean--+11.52 to 11.51. The rural school totaled +11.18 and the town school was last with +11.02.

TABLE 34

MEAN SCORE IN GROUPS, BY SCHOOLS, AND THE TOTAL MEAN SCORE

| School Size | Sophomore | | Junior | | Senior | | Total Mean Score |
|---|---|---|---|---|---|---|---|
| | (M) $\bar{X}$ | (F) $\bar{X}$ | (M) $\bar{X}$ | (F) $\bar{X}$ | (M) $\bar{X}$ | (F) $\bar{X}$ | |
| City | 10.93 | 8.70 | 13.06 | 10.00 | 14.14 | 12.29 | 11.52 |
| Town | 10.96 | 8.19 | 12.78 | 10.10 | 13.96 | 10.25 | 11.02 |
| Rural Indian | 11.00 | 11.55 | 15.50 | 8.50 | 11.00 | 11.50 | 11.51 |
| Rural | 12.83 | 9.40 | 10.50 | 8.00 | 13.60 | 12.50 | 11.18 |
| Total all schools | | | | | | | 11.31 |

## Summary

Chapter four was the presentation and interpretation of data. The responses that students gave on the questionnaire (Appendix) used for the study were reviewed by percentage according to size of school and sex and high school grade of the student. Thirty-four tables were presented, thirty-three which gave a percentage item analysis on the twelve items in part two and the twenty-one items in part three of the questionnaire.

Table 34, page 57, presented an analysis of the last twenty items by mean scores. To each of the last twenty items a plus two was assigned a correct response, a minus one a wrong response, and a zero to a "Don't Know" response. Means were computed for each of the separate groups studied, then for each of the four schools and finally a total mean for the 287 students surveyed. The possible range was from minus twenty to plus forty.

The responses to the first twelve items in part two indicated a number of results. First, teen-agers in the schools surveyed had tasted an alcoholic beverage; over 90 per cent answered "Yes" to "Have you ever drunk an alcoholic beverage?" Other information about drinking by the students in the schools surveyed was also obtained. A majority of the boys surveyed obtained their alcoholic beverages from a person of legal age who bought it for them, and most of the girls stated that they obtained it from their friends. However, a noticeable percentage of the

the girls (26.41 per cent) obtained their alcoholic beverages from their parents. Parents were also lax in their policing of this problem. Over 60 per cent of the parents were aware of their teen-ager's drinking and became increasingly aware of the problem as the teen-ager matured. Even though most of the parents were aware, 65 per cent disapproved of their teen-ager drinking.

The drinking done by the teen-ager was not as harmful as the "by-products" of drinking. Only five out of the 287 teen-agers surveyed were "heavy drinkers" or drank more than once a week. Forty-two out of the 287 surveyed drank once a week. A majority of the teen-agers, particularly the girls, only drank from one to four times a year or only once a month. Most of them responded that they and their friends drank mostly for fun. A response of 63 per cent "Yes" was obtained from the item asking "Have you ever been drunk?" Of the boys, 50 per cent and 15 per cent of the girls had used the dangerous practice of driving while intoxicated. Finally, three items were given that if responded to affirmatively could indicate a drinking problem. The first item was: "Do you ever gulp drinks to get high quickly?" Thirty-three per cent of the population surveyed responded affirmatively. To "Have you ever blacked out from drinking?" 22.4 per cent responded affirmatively; yet only 10 per cent responded affirmatively when asked: "Are you worried about becoming an alcoholic?"

The results of the quiz, first twenty questions in part three, indicated that the students surveyed were not assimilating well

knowledge of alcohol and the physiological effects on the human body. The highest performance, on the quiz, with possible score of minus twenty to plus forty, was a mean of +15.50 obtained by the male, rural Indian juniors and the lowest score was a mean of +8.00 obtained by the female, rural juniors. The mean by school was city, +11.52; town, +11.02, rural Indian, +11.51, and rural, +11.31.

# CHAPTER V

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### Introduction

The investigation was to determine drinking habits of Montana teen-agers and how well they knew problems related to and the physiological effects of alcohol. Two hundred and eighty-seven students in four Montana high schools were surveyed by use of a questionnaire (Appendix). High schools were of three categories: city, town, and rural. Among the schools were two rural schools, one with a predominantly Indian population and one with a Caucasian. The study consisted of the following:

1. Review of the literature on teen-aged drinking,
2. Administration of the questionnaire to 287 high school students,
3. Presentation and interpretation of the data collected by the questionnaire, and
4. Mean scoring of the first twenty questions which made up a test in part three of the questionnaire.

### Summary

Review of literature on the subject of teen-aged drinking produced a study by Professor Dale O. Nelson (1967), Drinking and Student

Understanding of Alcohol and Alcoholism in Selected High Schools of Utah. Nelson found, in many cases, that the students of Utah lacked knowledge of the physiological effects of alcohol on the human body. Other studies indicated important facts related to the problems of teen-age drinking. McKay and Clark (1967) found that 12 per cent of the seventh graders, 28 per cent of the eighth graders, 43 per cent of the ninth graders, 34 per cent of the tenth graders, 51 per cent of the eleventh graders, and 53 per cent of the twelfth graders studied in New Hampshire were, at one time or another, pivotal, or problem, drinkers. A Michigan study by Maddox and McCall (1964), reported by Coffery (1965), pointed out that 1 per cent of the teen-agers studied were frequent drinkers.

Many of the authors reviewed, Bacon and Straus (1953), McCarthy (1956) and (1964), Giovannangeli (1966), Black (1964), and Russell (1969), stated that the schools were not educating the students well enough about the problems and the physiological effects of alcohol on the human body. Studies by McCarthy (1964) and The National Institute of Mental Health indicated that drinking was responsible indirectly for a disproportionate number of teen-age auto accidents and teen-age crimes, although not as much as drinking was responsible for the same two categories among adult drinkers.

This study proceeded from one by Nelson. A questionnaire of thirty-six items was constructed and was divided into three sections. Section one concerned personal data, size of school, sex, and grade of the student. Section two consisted of twelve items to ascertain the

drinking habits of the teen-agers; section three was composed of twenty questions which were designed to find how much students knew about the problems related to and the physiological effects of alcohol.

Then, the questionnaire was administered by the investigator to two hundred and eighty-seven students in four Montana high schools. Samples of twenty-nine or more students from each of the upper three grades--sophomores, juniors, and seniors--were taken from the city school (N=93) and the town school (N=117). The entire population present that day from the two rural schools, one predominantly Indian (N=38), one all white (N=39), was surveyed.

The data were presented in thirty-four tables. The first twelve tables were presented by the percentage of students who responded to each available response for that item. The next twenty items concerning characteristics and problems of the beverages and the physiological effects were studied by the percentage of right, wrong, and "don't know" responses given by the students. The last item in Part III asked the students if they thought that the school educated well on the subject of alcohol.

The last twenty items, excluding the question on how well the school taught the subject of alcoholism, were scored in the form of a test. A plus two score was given to each correct answer; a minus one was given each incorrect answer; and a zero was given to each "Don't know." Mean scores were computed then for each group studied and for each school. Lastly, in this study, a total mean was computed for the

two hundred and eighty-seven students. Responses to the items in the second section indicated that most of the teen-agers were drinkers who ranged from drinking a few times a year to drinking more than once a week. Most of the boys and over 50 per cent of the girls were, at one or more times, intoxicated. Also indicated was that the majority of the parents were aware that their children drank. Some parents approved and, in fact, illegally supplied alcoholic beverages. Driving while intoxicated was found to be a practice indulged in by the majority of male students surveyed. Finally, a number of students responded affirmatively to questions in which an affirmative answer might indicate a pre-alcoholic stage of drinking. For example, they responded "Yes" to "Do you ever gulp drinks to get high quickly?" "Have you ever blacked out from drinking?" and "Are you worried about becoming an alcoholic?"

In section two, the teen-agers surveyed were lacking in knowledge about the physical construction of alcoholic beverages, the problems that alcohol caused, and the physiological effects of alcohol on the human body. Also, the students surveyed were ignorant of the effects of different concentrations of alcohol in the bloodstream and how it affected ability to perform normally both physically and mentally. The students had an idea that alcoholism was a national problem, but they were less aware of the fact that it was one of the foremost health problems in Montana. Section two created an impression of a lack of quality education or any education at all, by the secondary schools studied, on the subject of alcohol.

## Conclusions

The results of this study led to a number of conclusions. First, too many teen-agers drank, some to excess; and too many of them drank without adequate knowledge of the effects of alcohol on the body. Next, too many of the teen-agers surveyed drank while driving, and they were unaware of what amount of alcohol in the bloodstream caused intoxication and an impairment to reflexes. Hence, the secondary schools have not taught the factors of alcohol adequately.

Another conclusion is that the parents of the teen-agers studied were not as responsible as they might have been where use of alcohol was concerned. The study indicated that too many parents were aware of teen-agers' drinking, that too many parents apparently approved of the drinking, and that too many parents, in fact, supplied alcohol.

A final conclusion was that a small percentage (.017 per cent) of the teen-agers studied were already heavy drinkers, 15.5 per cent, or 42 students, were drinking at least once a week and were on the way to becoming heavy drinkers.

## Recommendations

Two recommendations are made based on the results of the study. First, all schools in the State of Montana should improve programs concerning alcohol. They should ascertain, with an instrument such as the questionnaire used in this study or another instrument including

questions on drugs as well as alcohol whether the students entrusted to their guidance are receiving the knowledge about these dangers that exist in their society. A pre-test and a post-test should be given to see gains made by the program.

Secondly, all teacher training institutions should institute a comprehensive program on alcohol. This should be a required program not just in the physical education department but within the education curriculum. More than just lip service should be given in educational psychology or human growth and development courses. All teachers of high school students should have this information in order to be able to impart it to students and to be able to discuss adequately the problems with the students.

# APPENDIX

## QUESTIONNAIRE

Place the number of the response that you feel is most correct in the blank at the left of the item number.

_____1. Your grade
1. Freshman
2. Sophomore
3. Junior
4. Senior

_____2. Your sex
1. Male
2. Female

_____3. Size of your school
1. AA
2. A
3. B
4. C

Personal Drinking Habits

_____1. Have you ever drunk an alcoholic beverage?
1. yes
2. no

_____2. How do you obtain the alcoholic beverages that you drink?
1. Buy it yourself
2. From friends your own age
3. From your parents
4. From a person of legal age who buys it for you

_____3. How often do you drink?
1. I don't
2. 1 to 4 times a year
3. Once a month
4. Two or three times a month
5. Once a week
6. Several times a week

_____4. Are your parents aware that you drink?
1. Yes
2. No

_____5. Do your parents, or would they if they knew, approve of your drinking?
1. Yes
2. No

_____6. If your friends drink, why do they?
1. They like it
2. To act grown up
3. For fun
4. For courage or nerve
5. Social pressure (to avoid being left out)
6. Other

_____7. Why do you drink?
1. I like it
2. I want to act grown up
3. For fun
4. For courage or nerve
5. Social pressure (to avoid being left out)

_____8. Have you ever been drunk?
1. Yes
2. No
3. Don't know

_____9. Have you ever driven while intoxicated?
1. Yes
2. No

_____10. Do you ever gulp drinks to get high quickly?
1. Yes
2. No

_____11. Have you ever blacked out from drinking?
1. Yes
2. No

_____12. Are you worried about becoming an alcoholic?
1. Yes
2. No

Section three deals with your knowledge of alcohol.

_____1. Distilled liquor contains 40-50% of alcohol.
1. True
2. False
3. Don't know

_____2. Drinking alcoholic beverages increases the body temperature.
1. True
2. False
3. Don't know

_____3. A person is an alcoholic when he or she develops an emotional and physical dependence on alcohol.
1. True
2. False
3. Don't know

_____4. One out of thirteen drinkers becomes an alcoholic.
1. True
2. False
3. Don't know

_____5. An alcoholic must never drink again if he is to become rehabilitated.
1. True
2. False
3. Don't know

_____6. For young people the most immediate danger in drinking is intoxication (drunkenness) and the dangers it causes.
1. True
2. False
3. Don't know

_____7. Alcoholism is classed as a disease by the American Medical Association.
1. True
2. False
3. Don't know

_____8. Two bottles of beer on an empty stomach affect most people's ability to drive.
1. True
2. False
3. Don't know

_____9. Alcohol lowers your sexual inhibitions.
1. True
2. False
3. Don't know

_____10. Beer contains a greater percentage of alcohol than fortified wines.
1. True
2. False
3. Don't know

_____11. 90-proof liquor contains 15% alcohol.
1. True
2. False
3. Don't know

_____12. Alcohol is a substantial food
1. True
2. False
3. Don't know

_____13. The slower you drink the less rapidly alcohol is absorbed.
1. True
2. False
3. Don't know

_____14. If the concentration of alcohol in the blood reaches .40 per cent you begin to feel dizzy.
1. True
2. False
3. Don't know

_____15. If the concentration alcohol in the bloodstream reaches .50 per cent you will die.
1. True
2. False
3. Don't know

_____16. A driver can always drive safely with only a .05 concentration of alcohol in the bloodstream.
1. True
2. False
3. Don't know

_____17. Alcoholism ranks as one of the United States' top five health problems.
1. True
2. False
3. Don't know

_____18. Alcoholism is one of Montana's major health problems.
1. True
2. False
3. Don't know

_____19. If both your parents drink, the chances are that you will drink.
1. True
2. False
3. Don't know

_____20. In 1967 5,000,000 people in the United States were classified as alcoholics.
1. True
2. False
3. Don't know

_____Do you feel that the secondary school system has educated you well on the subject of alcoholism?
1. Yes
2. No
3. Don't know

SELECTED BIBLIOGRAPHY

Bacon, Seldon D., and Straus, Robert. Drinking in College. New Haven, Conn.: Yale University Press, 1953.

Bahr, Howard M. "Lifetime Affiliation Patterns of Early-and-Late-Onset Drinkers on Skid Row." Quarterly Journal of Studies on Alcohol, XXX (September, 1969), 645-56.

Block, Marvin A. How Teens Set the Stage for Alcoholism. Chicago: American Medical Association, 1964.

Cain, Arthur. Young People and Drinking. New York: The John Day Company, 1963.

Coffery, T. G. "Teenage Drinking and Problem Drinkers." Alcoholism Review, IV (February, 1965), 8.

Giovannangeli, Arthur J. "Paradox of Teen-Age Drinking." New Hampshire Bulletin on Alcoholism, XV (March, 1966), 3.

McCarthy, Raymond G. Alcohol Education for Classroom and Community. New York: McGraw-Hill Book Company, 1964.

_____. Teen-Agers and Alcohol. New Brunswick, N. J.: Publications Division Rutgers Center of Alcohol Studies, 1956.

McKay, James, and Clarke, Donna W. "Teen-Age Drinking." New Hampshire Bulletin on Alcohol, XVI (January, 1967), 3.

Maddox, George L., and McCall, Bevode C. Drinking Among Teen-Agers. New Haven, Conn.: College and University Press, 1964.

National Institute of Mental Health. Alcohol and Alcoholism. Washington, D. C.: Government Printing Office, n.d.

Nelson, Dale O. Drinking and Student Understanding of Alcohol and Alcoholism in Selected High Schools of Utah. Logan, Utah: Utah State University, 1967.

Report and Recommendations Following a Study of Alcoholism in Montana. W. W. Lessley, Chairman. Helena, Montana: Montana State Board of Health, 1955.

Russell, Robert D. "The Concept Approach to Alcohol Education." Quarterly Journal of Studies on Alcohol, XXX (March, 1969), 158.

U.S. Department of Health, Education, and Welfare. Alcoholism. Washington, D. C.: Government Printing Office, 1965.

Williams, Jesse Feiring, and Kitzinger, Angela. Health for the College Student. New York: Harper and Row, Publishers, 1967.