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KNOWLEDGE OF THE EFFECTS OF ALCOHOL AND
TOBACCO AND EXTENT OF THEIR USE BY
UTAH STATE UNIVERSITY STUDENTS

by
Luell J Perrett

A thesis submitted in partial fulfillment
of the requirements for the degree

of
MASTER OF SCIENCE
in
Physical Education

Approved:

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UTAH STATE UNIVERSITY
Logan, Utah

1968

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To my wife, Sandra, I express my love and appreciation for her encouragement and assistance.

Luell J Perrett

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ABSTRACT

Knowledge of the Effects of Alcohol and
Tobacco and Extent of Their Use by
Utah State University Students

by

Luell J. Perrett, Master of Science

Utah State University, 1968

Major Professor: Dr. Dale O. Nelson
Department: Physical Education

Student understanding and use of alcohol and tobacco at Utah State University was studied under the following areas: specific knowledge as it relates to smoking and health and drinking and health, student opinions and attitudes toward smoking and drinking, smoking and drinking experiences, the influence of certain factors on smoking and drinking status, and source and credibility of tobacco and alcohol information.

Thirteen hundred seventy-eight students were sampled with the use of a questionnaire. It included 567 freshmen, 274 sophomores, 345 juniors, and 192 seniors. The sample covered each of the eight colleges at the University.

It was found that the boys were better informed about tobacco and alcohol than the girls; however, student knowledge about the effects of tobacco and alcohol is very low. Most of the students were of the opinion that smoking and drinking are not worth the risk a person takes in terms of health. A large majority do not want their children to use tobacco or alcohol. Thirteen per cent of the students are

regular smokers (smoke at least once a week), and 17 per cent drink regularly. Acceptance by their social group had the greatest influence on why students were smoking and drinking. Health implications, religious training, and parents' objections were the factors influencing those who did not use tobacco and alcohol.

The majority of the students indicated they received most of their information about tobacco and alcohol from health classes, from religious sources of information, and from parents or members of their family, in that order.

(182 pages)

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

The use of tobacco and alcohol can no longer be considered as harmless habits. Their effects on the human body are of sufficient importance to demand serious attention. Since 1950, scientists have become increasingly interested in the effects of alcohol and tobacco on health and have taken a broad experimental and clinical approach in studying their effects on the body.

The Surgeon General's 1964 Smoking and Health report (40) revealed that over 70 million people in the United States use tobacco regularly. Each day in this country over 150 people die from lung cancer, and the death rate from lung cancer is nearly 1000 per cent higher for smokers than for non-smokers. Each day over 500 people die from other diseases closely linked with smoking. According to the American Cancer Society (1), if present smoking patterns continue, one million children now in elementary schools will die of lung cancer before age 70. The report also stated that men who began smoking before age 20 have a substantially higher death rate than those who began after age 25.

According to the National Council on Alcoholism (27), there are over 80 million drinkers 21 years of age and over in the United States, and one of every 13 suffers from alcoholism, a disease of great significance. Mulford (26) found that over 71 per cent of the population of the United States over 21 years of age use alcoholic beverages. If ages 15 to 65 are used, this amounts to approximately 90,000,000 people.

In 1960 the average drinking American consumed 25.17 gallons of alcoholic beverages. Statistics indicate that the average age at which most people take their first drink is fourteen, somewhere in junior high school. The incidence of drinking increases with each high school year and continues with each year of college (38, 44).

Young people attending colleges come from nearly every part of American society. Students of various backgrounds, religion, and social classes are brought together making it difficult to influence their behavior. The college campus has been an important social environment where drinking and smoking have been encouraged and reinforced. Straus (38), in a survey of 27 American colleges, found an increase in drinking from 69 per cent among freshmen to 87 per cent among seniors. Those using cigarettes (11) were found to have a lower grade point average than those who abstained. Of the 60 per cent who used cigarettes, 43 per cent desired to discontinue smoking.

In studies undertaken in the last three years by Nelson (30), Brotherson (8), and Anderson (5) in the public high schools of Utah, it was concluded that the majority of the students know very little about the effects of alcohol and tobacco. If education is to fulfill its role in controlling tobacco and alcohol as a major health problem, it is necessary to learn about the attitudes and habits of the young people and provide better ways to educate them.

During the past four years since the Report to the Surgeon General, many people have quit smoking. The largest group who have quit using tobacco are the physicians, those who have firsthand knowledge of its effects on the body (10).

Objectives of the Study

The objectives of this study were to determine (a) the extent of knowledge the students of Utah State University have concerning alcohol and tobacco and their effect on health, (b) the opinions and attitudes of Utah State University students toward smoking and drinking, (c) the extent of smoking and drinking of Utah State University students, and (d) the influence of parents, religion, health, and friends upon those who use alcohol and tobacco.

Limitations

This study was limited to 1378 students attending Utah State University. The questionnaire consisted of 82 questions and was administered during class time in classes where permission by the instructor was given.

REVIEW OF RELATED LITERATURE

The related literature has been limited, because much of the information from literature sources is found in the results chapter. It is classified into the following areas: (a) the physiological effects of tobacco and alcohol, and (b) studies on smoking and drinking behavior.

Physiological Effects of Tobacco

The use of tobacco has been linked to cancer of the lung, heart disease, emphysema, bronchitis, and cancer of the mouth, esophagus, pancreas, and bladder. These diseases are a major cause of death and disability in the United States.

The Report of the Advisory Committee to the Surgeon General (40) found that cigarette smoking is related to lung cancer, and the smoker's chance of dying prematurely from lung cancer, heart disease, and other diseases is greatly increased. The risk of developing lung cancer increases with the duration of smoking and the number of cigarettes smoked per day and is diminished by discontinuing smoking. Cigarette smoking is associated with a 70 per cent increase in the age-specific death rate of males.

Salber (32) explains that tobacco smoke is a complex mixture of gases and very small droplets. The most well-known compound found in these gases is nicotine, which is recognized as a deadly poison. Even small amounts taken into the system cause the surface blood vessels to constrict, which raises the blood pressure and increases the heart rate.

The habitual use of tobacco is related primarily to psychological and social drives, reinforced and perpetuated by the pharmacological actions of nicotine, and plays an important part in making smoking such a difficult habit to break.

Smith (36) says that cigarettes effect the cleansing of the breathing passages. He says cigarette smoking slows down and may completely paralyze the ciliary escalator action and cause an over-production of mucus, which jams the breathing passages. This is especially serious for men doing hard physical work.

Homola (16) indicates that smoking not only damages the lungs enough to hinder the absorption of oxygen, but also makes it difficult for blood cells to supply the body with oxygen. Cigarette tars and nicotine damage the air sacs of the lungs to such an extent that it hinders the carbon dioxide-oxygen gas exchange during breathing, making it impossible to fully utilize the inhaled oxygen. According to Salber (32), when a smoker inhales, 50 to 90 per cent of the constituents in the smoke remain in the lungs, depending on how deeply they inhale. These smoke particles penetrate deep into the lungs and act on the cells of the bronchial epithelium to increase the number of cell layers. Seven different hydrocarbon compounds that can produce cancers on experimental animals have been isolated from the tar residue of cigarette smoke.

The chief substances in tobacco detrimental to the cardiovascular system are nicotine and carbon-monoxide, formed during smoking. In addition the body retains arsenic (a carcinogen from insecticides), lead, and acids. Male smokers have a higher death rate from coronary disease than non-smoking males. Factors such as high blood pressure,

high serum cholesterol, and excessive obesity are associated with the high death rate from coronary disease (32, 40).

Spalding (37) says the smoke also irritates the throat and the upper part of the respiratory organs, which causes a burning sensation and coughing. This is believed to cut down the smoker's resistance to colds.

Physiological Effects of Alcohol

Alcohol depresses the central nervous system. Its first action is on the higher centers of the brain, such as judgment, reasoning, thought, and memory. McCarthy (23) says that the most pronounced physiological effect of alcohol is on the brain. The amount and the extent of the disturbances depend on the concentration of alcohol in the blood and brain tissues. A concentration of 0.1 per cent of alcohol in the blood depresses the lower motor area of the brain. A concentration of 0.2 per cent of alcohol in the blood disturbs the entire motor area of the brain and also the midbrain. When alcohol reaches the level of 0.4 or 0.5 per cent in the blood, it suppresses the whole perception area of the brain and the drinker falls into a coma. A concentration of 0.6 or 0.7 per cent affects the centers that control breathing and heart beat, and death rapidly follows.

Cirrhosis of the liver, which is a hardening and shrinking of the liver, is a serious disease which occurs with particularly high incidence among alcoholics. Todd (41) says less than ten per cent of the alcohol taken into the body leaves through breath and urine. The other 90 per cent is transported to the liver and circulated in the blood stream. The liver is the only organ of the body able to dispose of the alcohol

because it is the only place in the body that has sufficient amounts of alcohol dehydrogenase, which converts alcohol into acetaldehyde, a substance even more toxic than alcohol. This substance is then converted to acetate by further oxidation. The final step which releases heat and energy and discards waste products can occur throughout the body. Most people oxidize alcohol at the rate of one-third ounce per hour, assuming their weight to be approximately 150 pounds. Alcohol cannot be stored; it must be utilized as soon as it is oxidized by the liver.

Shull (35) reported the results of an experiment with five trained typists, all moderate users of alcohol. They were given 21 grams of alcohol, and their work averaged 39 per cent more errors than normal. When the quantity of alcohol was doubled, the errors increased to 72 per cent. However, the speed was only slightly reduced.

McCarthy (23) found that the ability to perform work using the large muscles declines only slightly after using alcohol, although there was a definite effect on the muscular coordination necessary for fine work. Nelson (28) studied the effects of ethyl alcohol on the performance of selected gross motor tests. He found that there was a significant difference in terms of decreased efficiency in all six tests under the influence of two and three ounces of 200 proof alcohol. However, some of the subjects performed certain skills better under the influence of alcohol because it apparently reduced their inhibitions. He also found that the traumatic effect of alcohol was greater when a person was tired. In a later study (29), he found that the time when two ounces of alcohol had the most effect was one hour after drinking.

Harper (14) studied the effects of alcohol and fatigue on selected physical tests and concluded that small amounts of alcohol (one ounce of 195 proof for a subject weighing 154 pounds and one-fourth ounce added or subtracted for each 25 pounds) may impair performance. When alcohol is combined with fatigue the performance was greatly reduced. Todd (41) says that physical or mental fatigue is not overcome by any amount of alcohol. The feeling, but not the reality, of well-being that follows drinking gives one the impression of relief from tiredness.

Dodge (9), in his study of the effects of alcohol on eye movement and the speed of reciprocal innervation of the finger, found that both were decreased by alcohol. He concluded that the effects of alcohol on motor coordination are depressive.

Straus (38), in a survey of college students, found that alcohol helped to facilitate the lowering of standards to sexual activities. The lowered inhibitions and decreased anxiety level which follows drinking might account for the increased desire.

Studies on Smoking Behavior

Keeve (19) studied the habits and attitudes of 3057 public school students and concluded that potential smokers have usually established the habit by the time they reach age 12-14, or in junior high school. Education for the prevention of smoking must begin early enough to enlighten these students before they begin.

Streit (39) found from studying 8272 students that smoking increased by number of smokers, and number of cigarettes smoked, with each school year. By the time they were seniors, 69 per cent of the students had used cigarettes. Hagler (13) found that one out of every seven boys

at age 14 had started to smoke. David (10) indicates that about 50 per cent are smoking by the time they leave high school.

Students having a knowledge of the effects of tobacco can make better judgments concerning its use. Lawton (21) found that the majority of those who knew smoking caused lung cancer abstained from using cigarettes. Streit (39) found in Cincinnati that 75 per cent of the students knew smoking contributed to lung cancer and other chronic diseases, 54 per cent knew smoking contributed to stomach ulcers, and 65 per cent knew smoking contributed to heart disease and hardening of the arteries and were influenced by their knowledge. Jensen (17) found that 40 per cent of those who did smoke stated they believed smoking had a bad effect on health.

Schwartz (34) found that smoking is more frequent among scholastically unsuccessful, although not necessarily less intelligent, students. These students have lower academic goals, have lower social class standing, and do not take part in as many extra-curricular activities as non-smokers.

Smoking habits of college students

Shubert (33) studied the personality implications of cigarette smoking among college students. Of the group, 92 men and 134 women were questioned about smoking habits. Of these, 47 men and 51 women were smokers. He concluded that this is a good representation of the northeastern population of college students.

One year after the report of the Surgeon General's Committee on Smoking and Health, and immediately after the new year when most of the freshmen had just returned from vacation with their families, Dunn (11) conducted a survey of the smoking habits of the freshmen at the University of Illinois. She found that 56 per cent of the

former smokers had increased the number of cigarettes smoked per day. There were also 43 per cent who desired to discontinue smoking. It was interesting to find that eight out of ten freshmen believed students were adequately informed concerning the possible danger of cigarettes, and nine out of ten believed that lung cancer was related to cigarette smoking.

There was an inverse relationship between grade average and smoking. Students with an "A" average had only 16.7 per cent smokers compared to students with an "E" average having 59.1 per cent smokers. More than half of those not returning to college in 1965 smoked. Student smokers receiving financial support from scholarships were less than 20 per cent, while there was a high percentage of smokers among students receiving full financial support from their parents (11).

Baer (6) studied the smoking attitude, behavior, and beliefs of Boston College males. Questionnaires were given to 405 college males: 249 present smokers, 32 former smokers, and 124 non-smokers. Using the Thurstone-type Smoking-Attitude scale it was found that fewer present smokers were found to believe in a relationship between smoking and lung cancer or reduction in life expectancy. Present smokers who had tried to stop smoking and failed asserted that smoking helped them to concentrate, reduce tension, and express themselves. Former smokers who received pleasure from smoking had a more favorable smoking attitude than those not receiving pleasure from former smoking. Non-smokers who reported an occasional temptation to smoke would not mind their own future children becoming smokers. Present smokers, who wished to stop smoking, had a greater knowledge of the effects of lung cancer and its relationship to cigarettes. Inhalers, heavy smokers, and those smoking

only cigarettes report greater dissatisfaction with their smoking behavior than do other smokers.

There was a positive relationship between the smoking habits of the parents prior to the report of the Surgeon General's Committee on Smoking and Health and the smoking habits of the freshmen. If one parent smoked it appeared to have the same effect on the students as if both parents smoked (11).

Studies on Drinking Behavior

McCarthy (24) conducted a survey of 2,000 high school students and found that the average age at which most young people take their first drink is age $14\frac{1}{2}$. In the Utah State Industrial School, Anderson (5) found that 87 per cent of those using alcoholic beverages have started drinking before age 15. Nelson (30) studied the drinking and student understanding of alcohol and alcoholism in selected high schools of Utah and found that the average age students took their first drink was 14.56 years. Fifty-nine per cent had taken their first drink by age 15, and an additional 22 per cent had taken their first drink at age 16.

The use of alcohol increases with each high school year, and McCarthy (24) found that by the time they graduate, 80 per cent had used alcohol at least once. The majority of students who used alcohol regularly came from homes in which one or both parents are users. Those who abstained reported that their parents also abstained. Anderson (5) found a high percentage of the industrial students to be drinkers and also found a higher percentage of drinking among the parents. Todd (41) found the greatest influence on a youth's decision

to drink or not to drink is in the home, but education has a vital part to play in giving the student an understanding of the facts concerning the effects of alcohol.

McCarthy (22) found that students using alcohol were not as busy in school affairs and extra-curricular activities as were those who abstained. Nelson (30) found that non-drinkers have better grades than drinkers. None of the students who were non-drinkers had grades below "C", whereas the drinkers had several grades below "C" or failing.

Drinking habits of college students

Womer (44) conducted a survey of college drinking, covering all sections of the country and all types of colleges. He found that 72 per cent of the students indicated they began their drinking before entering college. He concluded that any program to educate young people in alcohol education should begin at the grade school level.

Straus and Bacon (38) administered questionnaires to 17,000 students in 27 public, private, and sectarian colleges and found that 74 per cent reported having used alcoholic beverages to some extent. The incidence of college drinking increased with each college year. Of students whose parents have an income of \$10,000 or more, 86 per cent of the men and 79 per cent of the women drink. This varies with income down to 66 per cent of the males and 30 per cent of the females whose families have incomes below \$2,500 a year. Womer (44), studying the family income, revealed that students from lower income families were more inclined to abstain from alcoholic beverages than those coming from higher income families.

Straus and Bacon (38) found that 90 per cent of the students received advice and education concerning the use of alcoholic beverages,

but more than half indicated that this advice had been designed to make them abstainers. Of those who were advised to abstain from family members, only 60 per cent drank, as compared to 82 per cent of those who had never been advised to abstain.

METHOD OF PROCEDURE

Population Sampled

The sample consisted of 1378 students attending Utah State University. It included 567 freshmen, 274 sophomores, 345 juniors, and 192 seniors, with a total of 764 boys and 614 girls. The sample was obtained from physical education activity classes and other required classes which enrolled students from all departments on the University campus. A good representation of each of the eight colleges at the University was obtained, 390 from the College of Education, 134 from the College of Humanities and Arts, 98 from the College of Engineering, 124 from the College of Natural Resources, 135 from the College of Science, 186 from the College of Business and Social Sciences, 96 from the College of Family Life, 70 from the College of Agriculture, and 145 of the students were undecided as to which college they would belong to.

Testing Procedures

The information was compiled through the use of a questionnaire consisting of questions on alcohol and tobacco in the following areas: (a) specific knowledge as it relates to smoking and health and drinking and health, (b) student opinions and attitudes toward smoking and drinking, (c) smoking experiences and drinking experiences, (d) the influence of certain factors on smoking status and drinking status, and (e) source and credibility of alcohol and tobacco information.

It was administered in the classes by the chief investigator or the professor of the class who had been familiarized with the testing procedure and questionnaire.

At the beginning of the test, students were cautioned to give honest answers and facts, and were given the following instructions.

Do not sign your name on the questionnaire; the material will remain anonymous; when you are finished bring your paper to the table and place it face down; you may place them on top or underneath or shuffle them if you so desire; there will be no way to identify anyone's paper. We are not interested in whether or not people should smoke or drink. We only want to know what people know about smoking and drinking as it relates to health, and their attitudes toward smoking and drinking. There are questions for those who smoke and drink and those who do not smoke and drink; answer all questions that pertain to you.

Questionnaire

A number of questions were compiled by the researcher with suggestions and criticisms of Dr. Dale O. Nelson of Utah State University. Other questions were selected from previous questionnaires used by Dr. Dale O. Nelson and Kirk Brotherson in the high schools of Utah. A final copy of 82 questions was completed after consultation with the advisory committee consisting of Dr. Dale O. Nelson, Janice Pearce, Assistant Professor of Health and Physical Education, and Dr. David R. Stone, Professor of Psychology. All questions were assembled from information related to tobacco and alcohol education. Most of the questions had one answer listed as "I don't know" to keep students from guessing. A copy of the questionnaire is found in the appendix.

ANALYSIS OF DATA

Introduction

The data from the questionnaire have been divided into two areas: (A) smoking and health and (B) alcohol and health. These were further divided into the following areas: (a) specific knowledge as it relates to smoking and health and drinking and health, (b) student opinions and attitudes toward smoking and drinking, (c) smoking experiences and drinking experiences, (d) the influence of certain factors on smoking and drinking status, and (e) source and credibility of tobacco and alcohol information.

A discussion of each question is followed by a five-part table containing the results of: (a) freshmen, (b) sophomores, (c) juniors, (d) seniors, and (e) total students. Each division is further divided into the number and per cent of boys, the number and per cent of girls, and the number and per cent of totals.

All questions are presented as they appeared on the questionnaire, although not in the same order, with correct answers underlined. A documented answer accompanies each discussion.

Smoking and Health

The following questions were designed to determine the students' understanding, attitudes, and opinions concerning the effects of tobacco and smoking. A number of questions in this section were compiled by the researcher and the remainder were taken from material in the Senior High

School Health Guide, Unit II, Tobacco and Health, Utah State Department of Public Instruction, and previously used by Brotherson (8) in the high schools of Utah.

Specific knowledge as it relates to smoking and health

The following questions were used to determine student knowledge and understanding of the effects of tobacco and smoking on health. These questions were taken from the Senior High School Health Guide, Unit II, Utah State Department of Public Instruction. Students in the State of Utah should have covered much of this material in their high school health classes. This material is also available in newspapers, magazines, and research bulletins, because of the great health hazards which have developed from the use of tobacco.

Question 1. Excess deaths from cigarette smoking is a result of:
(a) the number of cigarettes smoked daily, (b) the degree of inhalation,
(c) smoking the cigarette very short, (d) all of the above, (e) I don't know.

The total number of boys (62 per cent correct) seemed to be better informed than the total number of girls (50 per cent correct). However, the senior girls (78 per cent correct) were better informed than the senior boys (63 per cent correct). The greatest difference between the sexes was in the sophomore group, which showed that the boys (60 per cent correct) were much better informed than the girls (35 per cent correct). It is interesting to note that "the number of cigarettes smoked daily" and "the degree of inhalation" received approximately the same percentage of responses. Only two per cent of the students responded that the answer was "smoking the cigarette very short," and this is a big factor in excess deaths from cigarette smoking.

The report to the Surgeon General (40) in 1964 stated that cigarette smoking is associated with a 70 per cent increase in the age-specific death rates of males. The risk of developing lung cancer increases with the duration of smoking and the number of cigarettes smoked per day. It was found that the ratio for a given amount of smoking was greater for inhalers than for non-inhalers. Research has also shown that the shorter the cigarette is smoked the more nicotine and tars are taken into the lungs because the nicotine and tars tend to concentrate in the cigarette butt (1, 31, 40, 43). The lung cancer ratio between England and the United States is 100 to 1. This is probably due to the high cost of tobacco in England, forcing them to smoke their cigarettes very short and even keep the butts to roll more cigarettes, thus creating more lung cancer.

Question 2. Which of the following is an effect of smoking?

- (a) dilation of blood vessels, (b) decrease in blood pressure, (c) rise in skin temperature, (d) loss of oxygen-carrying capacity in the blood, (e) I don't know.

Forty-eight per cent of the students responded correctly and 24 per cent indicated that they did not know. Nineteen per cent chose dilation of the blood vessels, which is the opposite effect. This could be from the students' association of tobacco with the effects of alcohol, which does dilate the blood vessels. There was no noticeable difference between the boys and girls; however, the freshman class was higher than the average with 53 per cent correct responses for both the boys and the girls.

The high carbon monoxide content in the blood of inhaling smokers interferes with the release of oxygen in the muscles producing "oxygen

Table 1. Excess deaths from cigarette smoking is a result of:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) The number of cigarettes smoked daily	45	14	35	17	80	16
(b) The degree of inhalation	38	12	43	21	81	16
(c) Smoking the cigarette very short	4	1	3	1	7	1
(d) <u>All of the above</u>	196	64	103	50	299	58
(e) I don't know	27	9	22	11	49	9
Sophomores						
(a) The number of cigarettes smoked daily	20	17	20	16	40	17
(b) The degree of inhalation	11	9	36	28	37	16
(c) Smoking the cigarette very short	3	3	1	1	4	2
(d) <u>All of the above</u>	70	60	45	35	115	49
(e) I don't know	13	11	25	20	38	16
Juniors						
(a) The number of cigarettes smoked daily	32	20	30	20	62	20
(b) The degree of inhalation	19	12	30	20	49	16
(c) Smoking the cigarette very short	7	4	2	1	9	3
(d) <u>All of the above</u>	79	63	53	78	132	68
(e) I don't know	9	7	3	4	12	7
Total college						
(a) The number of cigarettes smoked daily	119	17	87	16	206	16
(b) The degree of inhalation	80	11	117	21	187	16
(c) Smoking the cigarette very short	17	2	8	1	25	2
(d) <u>All of the above</u>	437	62	272	50	709	56
(e) I don't know	60	8	66	12	126	10

starvation" in the tissues. The carbon monoxide tends to lock the oxygen in the blood stream making it impossible to supply the body with sufficient oxygen. Even when smoking is discontinued it takes several days for oxygen tension in the blood to return to normal (16, 40, 43).

Table 2. Which of the following is an effect of smoking?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Dilation of blood vessels	59	18	24	12	83	15
(b) Decrease in blood pressure	11	3	14	7	25	5
(c) Rise in skin temperature	9	3	5	2	14	3
(d) <u>Loss of oxygen-carrying capacity in the blood</u>	175	53	106	53	281	53
(e) I don't know	78	23	52	26	130	24
Sophomores						
(a) Dilation of blood vessels	21	17	18	15	39	16
(b) Decrease in blood pressure	10	8	2	2	12	5
(c) Rise in skin temperature	5	4	3	3	8	3
(d) <u>Loss of oxygen-carrying capacity in the blood</u>	58	46	51	45	109	45
(e) I don't know	33	25	40	35	73	31
Juniors						
(a) Dilation of blood vessels	30	19	33	23	63	21
(b) Decrease in blood pressure	4	3	13	9	17	6
(c) Rise in skin temperature	8	5	5	3	13	4
(d) <u>Loss of oxygen-carrying capacity in the blood</u>	73	46	64	44	137	45
(e) I don't know	43	27	31	21	74	24
Seniors						
(a) Dilation of blood vessels	34	28	17	29	51	29
(b) Decrease in blood pressure	6	5	2	4	8	5
(c) Rise in skin temperature	4	3	8	14	12	7
(d) <u>Loss of oxygen-carrying capacity in the blood</u>	50	42	23	40	73	41
(e) I don't know	26	22	7	13	33	18
Total college						
(a) Dilation of blood vessels	144	20	92	18	236	19
(b) Decrease in blood pressure	31	4	31	6	62	5
(c) Rise in skin temperature	26	4	21	4	47	4
(d) <u>Loss of oxygen-carrying capacity in the blood</u>	356	48	244	47	600	48
(e) I don't know	180	24	130	25	310	24

Question 3. Smoking affects the lungs in which of the following ways? (a) increases the action of the cilia, (b) decreases the mucous secretaion in the bronchials, (c) ruptures the air sacs, (d) increases the oxygen exchange with the blood, (e) I don't know.

Eighteen per cent of the boys and girls answered this question correctly. The only difference between the sexes was with the senior girls (36 per cent correct) compared to the senior boys (17 per cent correct). Because the inhaled smoke is hot and dry, many students think it decreases the mucous secretion in the bronchials; however, it has just the opposite effect, and the increase in mucous jams the breathing passages. This kind of information is apparently not taught, as evidenced by the 43 per cent indicating "I don't know."

This question asks for one of the effects of smoking, while the next question (Question 4) asks for the same thing by giving the exact name (emphysema) of the disease.

Emphysema is a debilitating, crippling, sometimes fatal condition in which tiny air sacs, the alveoli, in the lungs weaken and expand. This over-inflation causes their destruction. The lungs lose their elasticity and become less and less efficient in moving air, until the heart, starved for oxygen, reaches the end of its endurance (7, 40, 43).

Question 4. Emphysema is: (a) constriction of the blood vessels, (b) too many white blood cells in the body, (c) over-inflation of the air sacs causing their destruction, (d) acute cirrhosis of the liver, (e) I don't know.

Thirty-five per cent of the students responded correctly to this question. The girls in all classes seemed to be better informed than the boys. The senior class had the highest per cent of correct answers

by 19 per cent. Thirty-five per cent of the students indicated that they did not know what emphysema was. Eleven per cent of the students thought that it was the constriction of the blood vessels; however, the disease caused by constriction of the blood vessels is called Buerger's disease, which is limited almost entirely to smokers. Again this kind of information is likely not taught well in most health classes.

In emphysema, the thin walls of the air sacs lose their elasticity and tear. When the tiny bronchials strain to expel the trapped air, they can squeeze shut and block the last chance for escape of the used air. These airways open easily to admit fresh air, and the limp air sacs fill with the used air. The lungs swell permanently, giving the patient the "barrel chest" typical of the disease. The patient must literally squeeze the air from his lungs. The Social Security Administration pays more disability allowances to workers aged 50-64 for emphysema than for any other disease except heart disease (7, 40).

Question 5. The average medium-to-heavy smoker (1-2 packs a day) forfeits how many years of his life? (a) the life span is not affected by smoking, (b) 5 years, (c) 10 years, (d) 15 to 20 years, (e) I don't know.

Only three per cent of the students thought the life span was not affected by smoking, while 40 per cent of the students answered the question correctly. The girls (43 per cent correct) were better informed than the boys (38 per cent correct). The junior girls were the best informed with 50 per cent correct, although the sophomore girls were the lowest with 34 per cent correct. Twenty-three per cent thought it would affect the life span by five years, and 12 per cent answered 15 to 20 years. Twenty-two percent of the students said they did not know. This means that 60 per cent of the students are not informed as to the

Table 3. Smoking affects the lungs in which of the following ways?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Increases the action of the cilia	30	9	8	4	38	7
(b) Decreases the mucous secretion in the bronchials	84	26	47	23	131	25
(c) <u>Ruptures the air sacs</u>	62	19	34	17	96	18
(d) Increases the oxygen exchange with the blood	18	6	16	8	34	6
(e) I don't know	131	40	96	48	227	43
Sophomores						
(a) Increases the action of the cilia	7	6	12	10	19	8
(b) Decreases the mucous secretion in the bronchials	40	35	27	23	67	29
(c) <u>Ruptures the air sacs</u>	20	17	21	18	41	17
(d) Increases the oxygen exchange with the blood	3	3	8	6	11	5
(e) I don't know	45	39	52	43	97	41
Juniors						
(a) Increases the action of the cilia	17	11	7	5	24	8
(b) Decreases the mucous secretion in the bronchials	42	27	33	23	75	25
(c) <u>Ruptures the air sacs</u>	24	16	21	15	45	15
(d) Increases the oxygen exchange with the blood	6	4	11	7	17	6
(e) I don't know	64	42	72	50	136	46
Seniors						
(a) Increases the action of the cilia	6	5	5	9	11	6
(b) Decreases the mucous secretion in the bronchials	42	36	10	18	52	30
(c) <u>Ruptures the air sacs</u>	20	17	20	36	40	23
(d) Increases the oxygen exchange with the blood	6	5	1	1	7	4
(e) I don't know	43	37	20	36	63	37

Table 3. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) Increases the action of the cilia	60	8	32	6	92	7
(b) Decreases the mucous secretion in the bronchials	208	29	117	22	325	26
(c) <u>Ruptures the air sacs</u>	126	18	96	18	222	18
(d) Increases the oxygen exchange with the blood	33	5	36	8	69	6
(e) I don't know	223	40	240	46	523	43

effect of smoking on their life expectancy. Better education is needed so students can make an intelligent choice as to their use of tobacco. Statistics are not always remembered, but they have a place in decision-making if the choice is life or death.

The death rates increase with the amount of cigarettes smoked. The life expectancy of a medium-to-heavy smoker is about ten years less than that of a non-smoker (1, 39).

Question 6. The nicotine content in the different types of tobacco: (a) is the same, (b) varies a great deal, (c) varies very little, (d) does not vary, (e) I don't know.

Sixty-one per cent of all students said "varies very little," which may be true among some brands, but not all brands; and only 18 per cent of the students marked the correct answer. Advertising on television and radio could be the answer for the way the students responded to this question, because all the companies claim to have cut down the amount of harmful substances in their tobacco and emphasize the taste. The boys were better informed than the girls. However, the senior girls were one per cent higher than the senior boys. Only 18 per

Table 4. Emphysema is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Constriction of the blood vessels	33	10	18	9	51	10
(b) Too many white blood cells in the body	50	15	25	12	75	14
(c) <u>Over-inflation of the air sacs causing destruction</u>	99	31	73	36	172	33
(d) Acute cirrhosis of the liver	16	5	14	7	30	6
(e) I don't know	125	39	73	36	198	37
Sophomores						
(a) Constriction of the blood vessels	13	11	13	11	26	11
(b) Too many white blood cells in the body	23	19	6	5	29	12
(c) <u>Over-inflation of the air sacs causing destruction</u>	34	28	41	36	75	31
(d) Acute cirrhosis of the liver	8	6	13	11	21	9
(e) I don't know	44	36	43	37	87	37
Juniors						
(a) Constriction of the blood vessels	15	10	19	13	34	11
(b) Too many white blood cells in the body	18	11	19	13	37	12
(c) <u>Over-inflation of the air sacs causing destruction</u>	48	30	51	35	99	32
(d) Acute cirrhosis of the liver	13	8	8	5	21	7
(e) I don't know	64	41	50	34	114	38
Seniors						
(a) Constriction of the blood vessels	17	14	12	21	29	16
(b) Too many white blood cells in the body	9	7	7	13	16	9
(c) <u>Over-inflation of the air sacs causing destruction</u>	62	51	29	52	91	51
(d) Acute cirrhosis of the liver	6	5	1	1	7	4
(e) I don't know	28	23	7	13	35	20

Table 4. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) Constriction of the blood vessels	78	11	62	12	140	11
(b) Too many white blood cells in the body	100	14	57	11	157	13
(c) <u>Over-inflation of the air sacs causing destruction</u>	234	34	194	37	437	35
(d) Acute cirrhosis of the liver	43	6	36	7	79	6
(e) I don't know	261	35	173	33	434	35

cent of the students have been educated as to the nicotine content in different types of tobacco. If the other 82 per cent were better informed, many should give up the habit before it becomes more difficult.

The amount of tar from the smoke of one cigarette is between three and 40 mg. and varies according to the length of the cigarette, porosity of the paper, and the weight and kind of tobacco (?). The amount of nicotine reaching the smoker varies from 0.5 mg. per cigarette to 3.0 mg. per cigarette, depending on the brand of cigarette and the type of tobacco (40). The use of tobacco is related primarily to psychological and social drives, reinforced and perpetuated by the pharmacological actions of nicotine, which play an important part in making smoking such a difficult habit to break (32).

Question 7. The main purpose for tobacco manufacturers putting menthol in cigarettes is to: (a) reduce the amount of heat in the mouth and lungs, (b) reduce the harmful material in the smoke, (c) change the taste of the smoke, (d) reduce irritation to the bronchial tubes, (e) I don't know.

Table 5. The average medium-to-heavy smoker (1-2 packs a day) forfeits how many years of his life?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) The life span is not affected by smoking	13	4	2	1	15	3
(b) 5 years	74	22	49	25	123	23
(c) <u>10 years</u>	117	35	87	45	204	39
(d) 15 to 20 years	51	15	21	11	72	14
(e) I don't know	78	24	36	18	114	21
Sophomores						
(a) The life span is not affected by smoking	5	4	8	7	13	5
(b) 5 years	21	18	24	20	45	19
(c) <u>10 years</u>	52	45	42	34	94	40
(d) 15 to 20 years	12	10	8	7	20	8
(e) I don't know	26	23	40	32	66	28
Juniors						
(a) The life span is not affected by smoking	7	4	1	1	8	3
(b) 5 years	39	24	33	25	72	25
(c) <u>10 years</u>	62	39	66	50	128	44
(d) 15 to 20 years	9	6	16	12	25	8
(e) I don't know	44	27	15	12	59	20
Seniors						
(a) The life span is not affected by smoking	5	4	0	0	5	3
(b) 5 years	26	22	14	25	40	23
(c) <u>10 years</u>	44	38	22	39	66	38
(d) 15 to 20 years	19	16	10	18	29	17
(e) I don't know	23	20	10	18	33	19
Total college						
(a) The life span is not affected by smoking	30	4	11	2	41	3
(b) 5 years	160	22	120	24	280	23
(c) <u>10 years</u>	275	38	217	43	492	40
(d) 15 to 20 years	91	13	55	11	146	12
(e) I don't know	171	23	101	20	272	22

Table 6. The nicotine content in the different types of tobacco:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Is the same	15	5	5	2	20	4
(b) <u>Varies a great deal</u>	66	20	25	12	91	17
(c) <u>Varies very little</u>	198	60	131	62	329	61
(d) Does not vary	9	3	15	7	24	4
(e) I don't know	40	12	36	17	76	14
Sophomores						
(a) Is the same	2	2	1	1	3	2
(b) <u>Varies a great deal</u>	28	24	14	12	42	18
(c) <u>Varies very little</u>	74	64	76	67	150	65
(d) Does not vary	2	2	4	4	6	3
(e) I don't know	10	8	19	16	29	12
Juniors						
(a) Is the same	5	3	12	8	17	6
(b) <u>Varies a great deal</u>	34	22	24	16	58	19
(c) <u>Varies very little</u>	89	57	93	63	182	60
(d) Does not vary	7	4	4	3	11	4
(e) I don't know	21	14	14	10	35	11
Seniors						
(a) Is the same	10	9	3	5	13	8
(b) <u>Varies a great deal</u>	23	21	13	22	36	21
(c) <u>Varies very little</u>	59	54	38	66	97	58
(d) Does not vary	7	6	0	0	7	4
(e) I don't know	11	10	4	7	15	9
Total college						
(a) Is the same	151	5	21	4	53	4
(b) <u>Varies a great deal</u>	151	21	76	14	227	18
(c) <u>Varies very little</u>	420	59	338	64	758	61
(d) Does not vary	25	4	23	4	48	4
(e) I don't know	82	11	73	14	155	13

Forty-seven per cent of the students responded correctly to this question. There was a great deal of difference in the number of correct responses for the boys (54 per cent correct) and the girls (39 per cent correct). The senior boys were the best informed with 60 per cent answering correctly. Eighteen per cent of the students thought that menthol reduced the irritation to the bronchial tubes, probably because menthol is soothing, and it is natural to think it would reduce irritation. Since the boys smoke more than the girls, they probably have a greater knowledge of the taste of different types of tobacco than do the girls.

Menthol is merely an additive that changes the taste of the smoke (2).

Question 8. The number of cigarettes needed to be smoked daily on a regular basis to affect the death rate of smokers is: (a) 1-3, (b) 5-7, (c) 10-12, (d) smoking does not affect the death rate, (e) I don't know.

Only 14 per cent of the students knew that smoking five or more cigarettes a day increased the mortality rate. Three per cent said smoking does not affect the death rate, and 36 per cent indicated they did not know. The girls were better informed than the boys by four per cent, and there was no noticeable difference between the classes. Even though students may have been taught, it is difficult to remember these kinds of statistics. However, when it comes to a question as serious as this in a decision involving their health, it is important that they be informed.

Individuals who smoke more than five cigarettes a day show a higher death rate than non-smokers. The death rate increases with the number of cigarettes smoked (2).

Table 7. The main purpose for tobacco manufacturers putting menthol in cigarettes is to:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Reduce the amount of heat in the mouth and lungs	50	15	30	15	80	15
(b) Reduce the harmful material in the smoke	14	4	15	7	29	5
(c) <u>Change the taste of the smoke</u>	176	53	78	38	254	48
(d) Reduce irritation to the bronchial tubes	51	15	30	15	81	15
(e) I don't know	41	13	50	25	91	17
Sophomores						
(a) Reduce the amount of heat in the mouth and lungs	21	18	16	14	37	16
(b) Reduce the harmful material in the smoke	5	4	4	3	9	4
(c) <u>Change the taste of the smoke</u>	60	50	45	39	105	45
(d) Reduce irritation to the bronchial tubes	24	20	19	17	43	18
(e) I don't know	9	8	31	27	40	17
Juniors						
(a) Reduce the amount of heat in the mouth and lungs	17	10	23	16	40	13
(b) Reduce the harmful material in the smoke	10	6	5	3	15	5
(c) <u>Change the taste of the smoke</u>	89	52	56	38	145	46
(d) Reduce irritation to the bronchial tubes	35	20	28	19	63	19
(e) I don't know	20	12	34	24	54	17
Seniors						
(a) Reduce the amount of heat in the mouth and lungs	14	12	11	20	25	14
(b) Reduce the harmful material in the smoke	3	3	1	2	4	2
(c) <u>Change the taste of the smoke</u>	72	60	22	39	94	54
(d) Reduce irritation to the bronchial tubes	25	21	16	28	41	23
(e) I don't know	5	4	6	11	11	7

Table 7. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) Reduce the amount of heat in the mouth and lungs	102	14	80	15	182	14
(b) Reduce the harmful material in the smoke	32	4	25	5	57	5
(c) <u>Change the taste of the smoke</u>	397	54	201	39	598	47
(d) Reduce irritation to the bronchial tubes	135	18	93	18	228	18
(e) I don't know	75	10	121	23	196	16

Question 9. The statistical evidence which links cigarette smoking to lung cancer is: (a) strongly suggestive as a cause of cancer, (b) insufficient to warrant serious concern on the part of smokers, (c) based on unreliable data, (d) inconclusive and unconvincing, (e) I don't know.

Eighty-nine per cent of the students responded correctly. There was no noticeable difference between the classes. Only four per cent stated that they did not know the statistical evidence that links cigarette smoking to lung cancer. There has been enough publicity in the past few years in the papers and on television as to the effects of tobacco on lung cancer that most of the students would be expected to respond accurately.

Cigarette smoking is causally related to lung cancer as evidenced by the conclusion of the Advisory Committee's report to the Surgeon General in 1964. There is evidence from numerous laboratories that tobacco smoke condenses and extracts of tobacco are carcinogenic for several animal species. Twenty-eight out of 29 population studies have shown lung cancer as being more prevalent among smokers (1, 2, 32, 40).

Table 8. The number of cigarettes needed to be smoked daily on a regular basis to affect the death rate of smokers is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) 1-3	99	30	55	27	154	29
(b) 5-7	35	11	39	19	74	14
(c) 10-12	49	15	29	14	78	15
(d) Smoking does not affect the death rate	11	3	4	1	15	3
(e) I don't know	133	41	78	39	211	39
Sophomores						
(a) 1-3	30	26	24	21	54	24
(b) 5-7	15	13	18	16	33	14
(c) 10-12	25	22	23	20	48	21
(d) Smoking does not affect the death rate	3	3	2	2	5	2
(e) I don't know	42	36	46	41	88	39
Juniors						
(a) 1-3	46	30	43	30	89	30
(b) 5-7	21	14	21	14	42	14
(c) 10-12	31	20	24	17	55	18
(d) Smoking does not affect the death rate	6	4	1	1	7	2
(e) I don't know	50	32	56	38	106	36
Seniors						
(a) 1-3	33	28	21	38	54	31
(b) 5-7	18	15	6	11	24	14
(c) 10-12	28	24	10	18	38	22
(d) Smoking does not affect the death rate	10	8	1	1	11	6
(e) I don't know	29	25	18	32	47	27
Total college						
(a) 1-3	208	29	143	28	351	29
(b) 5-7	89	12	84	16	173	14
(c) 10-12	133	19	86	17	219	18
(d) Smoking does not affect the death rate	30	4	8	2	38	3
(e) I don't know	254	36	198	37	452	36

Table 9. The statistical evidence which links cigarette smoking to lung cancer is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>Strongly suggestive as a cause of cancer</u>	275	83	180	87	455	85
(b) Insufficient to warrant serious concern on the part of smokers	16	5	6	3	22	4
(c) Based on unreliable data	11	3	5	3	16	3
(d) Inconclusive and unconvincing	13	4	5	3	18	3
(e) I don't know	18	5	9	4	27	5
Sophomores						
(a) <u>Strongly suggestive as a cause of cancer</u>	101	90	103	90	204	90
(b) Insufficient to warrant serious concern on the part of smokers	5	4	1	1	6	2
(c) Based on unreliable data	2	2	2	2	4	2
(d) Inconclusive and unconvincing	2	2	1	1	3	2
(e) I don't know	2	2	8	6	10	4
Juniors						
(a) <u>Strongly suggestive as a cause of cancer</u>	142	90	141	93	283	91
(b) Insufficient to warrant serious concern on the part of smokers	4	3	4	3	8	3
(c) Based on unreliable data	3	3	2	2	5	2
(d) Inconclusive and unconvincing	3	2	1	1	4	2
(e) I don't know	6	3	4	3	10	3
Seniors						
(a) <u>Strongly suggestive as a cause of cancer</u>	105	92	52	92	157	92
(b) Insufficient to warrant serious concern on the part of smokers	4	3	2	4	6	4
(c) Based on unreliable data	1	1	0	0	1	1
(d) Inconclusive and unconvincing	2	2	0	0	2	1
(e) I don't know	2	2	2	4	4	2

Table 9. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) <u>Strongly suggestive as a cause of cancer</u>	623	88	476	90	1099	89
(b) Insufficient to warrant serious concern on the part of smokers	29	4	13	3	42	3
(c) Based on unreliable data	12	2	9	2	26	2
(d) Inconclusive and unconvincing	20	3	7	1	27	2
(e) I don't know	22	3	23	4	55	4

Question 10. The smoking of one cigarette can raise the pulse rate: (a) 5-10 beats p/minute, (b) 15-30 beats p/minute, (c) 40-50 beats p/minute, (d) does not raise the pulse, (e) I don't know.

Only 11 per cent of the students gave correct responses, and 52 per cent said, "I don't know." Twenty-six per cent thought it would raise the pulse rate 5-10 beats per minute. Although the boys and girls showed the same percentage of correct responses (11 per cent correct), the sophomore girls were the least informed with only four per cent correct. A larger percentage of girls (61 per cent) answered, "I don't know," while only 48 per cent of the boys admitted it. If students are going to be able to understand the effects of tobacco on the body, better health education is needed in our communities and in our schools.

Smoking one cigarette increases the heart rate 15-30 beats per minute, which would be comparable to the increase in heart rate from 50 sit-ups (43).

Table 10. The smoking of one cigarette can raise the pulse rate:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>5-10 beats p/minute</u>	88	28	30	15	118	23
(b) <u>15-30 beats p/minute</u>	34	11	23	12	57	11
(c) <u>40-50 beats p/minute</u>	12	4	11	5	23	4
(d) Does not raise the pulse	25	7	10	5	35	7
(e) I don't know	160	50	126	63	286	55
Sophomores						
(a) <u>5-10 beats p/minute</u>	36	34	22	23	58	28
(b) <u>15-30 beats p/minute</u>	16	15	4	4	20	10
(c) <u>40-50 beats p/minute</u>	1	1	1	1	2	1
(d) Does not raise the pulse	7	7	2	2	9	4
(e) I don't know	47	43	68	70	115	57
Juniors						
(a) <u>5-10 beats p/minute</u>	50	32	36	25	86	29
(b) <u>15-30 beats p/minute</u>	17	11	24	17	41	14
(c) <u>40-50 beats p/minute</u>	5	3	3	2	8	3
(d) Does not raise the pulse	8	5	11	8	19	6
(e) I don't know	76	49	69	48	145	48
Seniors						
(a) <u>5-10 beats p/minute</u>	34	32	8	14	42	26
(b) <u>15-30 beats p/minute</u>	9	8	6	11	15	9
(c) <u>40-50 beats p/minute</u>	3	3	4	7	7	4
(d) Does not raise the pulse	12	12	4	7	16	10
(e) I don't know	48	45	34	61	82	15
Total college						
(a) <u>5-10 beats p/minute</u>	208	30	96	19	304	26
(b) <u>15-30 beats p/minute</u>	76	11	57	11	133	11
(c) <u>40-50 beats p/minute</u>	27	4	19	4	46	4
(d) Does not raise the pulse	52	7	27	5	79	7
(e) I don't know	331	48	297	61	628	52

Question 11. The smoking of one cigarette affects the heart rate for a normal period of: (a) up to 5 minutes, (b) up to 10 minutes, (c) up to 20 minutes, (d) does not affect the heart rate, (e) I don't know.

Only 14 per cent responded correctly. The majority of the students (52 per cent) answered, "I don't know," and only five per cent felt it did not affect the heart rate. The senior boys and girls were the most accurate in their responses with 20 and 21 per cent correct respectively. There was no noticeable difference between the responses of the boys and girls. Students not knowing the correct answer to the previous question would not be expected to know the correct answer to this one. Eighty-six per cent of the students answering incorrectly means that health education must be improved if education is to serve its role in the lives of young people. It is easy to see why so many young people use tobacco, when they are not properly informed.

Even small amounts of nicotine taken into the system by means of cigarette smoke causes the surface blood vessels to constrict, raises the blood pressure, and increases the heart rate. After 50 sit-ups it takes the heart 5-10 minutes to return to normal, as compared to 20-30 minutes for the heart to return to normal after smoking one cigarette (32, 40, 43).

Question 12. A good medical danger sign for lung cancer is: (a) low blood pressure, (b) phlegm with traces of blood, (c) occasional pains in the chest, (d) dimmed vision, (e) I don't know.

There was an increase in correct responses with each year of college, beginning with the freshmen (28 per cent correct) up to the seniors (48 per cent correct). Thirty-one per cent of the students

Table 11. The smoking of one cigarette affects the heart rate for a normal period of:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Up to 5 minutes	41	13	15	7	56	10
(b) Up to 10 minutes	42	13	34	16	76	14
(c) <u>Up to 20 minutes</u>	36	11	35	16	71	13
(d) Does not affect the heart rate	19	6	7	3	26	5
(e) I don't know	183	57	122	58	305	58
Sophomores						
(a) Up to 5 minutes	19	16	18	16	37	16
(b) Up to 10 minutes	21	18	18	16	39	17
(c) <u>Up to 20 minutes</u>	20	17	12	11	32	14
(d) Does not affect the heart rate	8	7	1	1	9	4
(e) I don't know	49	42	64	56	113	49
Juniors						
(a) Up to 5 minutes	21	13	25	17	46	15
(b) Up to 10 minutes	19	12	19	13	38	12
(c) <u>Up to 20 minutes</u>	23	14	31	21	54	18
(d) Does not affect the heart rate	8	5	7	5	15	5
(e) I don't know	91	56	63	44	154	50
Seniors						
(a) Up to 5 minutes	14	12	4	7	18	10
(b) Up to 10 minutes	17	15	6	11	23	13
(c) <u>Up to 20 minutes</u>	23	20	12	21	35	20
(d) Does not affect the heart rate	11	9	4	7	15	9
(e) I don't know	52	44	30	54	82	48
Total college						
(a) Up to 5 minutes	95	13	62	12	157	13
(b) Up to 10 minutes	99	14	77	15	176	14
(c) <u>Up to 20 minutes</u>	112	16	90	17	202	16
(d) Does not affect the heart rate	46	6	19	4	65	5
(e) I don't know	375	51	279	52	654	52

thought occasional pains in the chest was a danger sign, while 26 per cent said they did not know. A lingering pain in the chest or lungs is a good medical danger sign but not an occasional pain. This may account for the high percentage of students answering this way. The girls seemed better informed than the boys by six per cent, with the senior girls being the highest with 55 per cent correct.

In 1912 there were only 247 cases of lung cancer in this country. Today lung cancer is the leading cause of male cancer deaths. In 1968 lung cancer will kill approximately 55,000 persons in the United States, or approximately 150 persons a day. In answering the question, "What are the symptoms of lung cancer?", the American Cancer Society lists: blood in the sputum (or phlegm traces with blood), and a lingering infection of the lung or pain in the chest; but by the time these appear, the disease has usually progressed too far to be cured (2).

Question 13. The substance in tobacco which appears to cause lung cancer is: (a) there is no substance in tobacco which will cause lung cancer, (b) nicotine, (c) some unknown factors in tobacco, (d) tobacco tars, (e) I don't know.

Nicotine was the most popular answer (49 per cent) with only 37 per cent giving tobacco tars as the right answer. So much has been said about nicotine as a harmful agent in tobacco that many of the students associate nicotine with lung cancer. The boys (41 per cent correct) were much better informed than the girls (32 per cent correct) with the seniors being the best informed in the classes.

A person smoking a pack of cigarettes a day for ten years will inhale approximately eight quarts of cancer-producing tars. Seven different hydrocarbon compounds that can produce cancers on experimental animals have been isolated from the tar residue of cigarette smoke (1, 32, 40).

Table 12. A good medical danger sign for lung cancer is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Low blood pressure	23	7	16	8	39	7
(b) <u>Phlegm with traces of blood</u>	92	28	58	28	150	28
(c) Occasional pains in the chest	122	36	61	30	183	34
(d) Dimmed vision	2	1	3	1	5	1
(e) I don't know	94	28	66	33	160	30
Sophomores						
(a) Low blood pressure	6	5	4	4	10	4
(b) <u>Phlegm with traces of blood</u>	29	25	49	43	78	34
(c) Occasional pains in the chest	43	37	27	24	70	31
(d) Dimmed vision	3	3	1	1	4	2
(e) I don't know	34	30	33	28	67	29
Juniors						
(a) Low blood pressure	10	6	7	5	17	6
(b) <u>Phlegm with traces of blood</u>	60	37	61	42	121	39
(c) Occasional pains in the chest	51	31	46	32	97	31
(d) Dimmed vision	6	4	0	0	6	2
(e) I don't know	36	22	32	21	68	22
Seniors						
(a) Low blood pressure	7	6	3	5	10	6
(b) <u>Phlegm with traces of blood</u>	51	44	31	55	82	48
(c) Occasional pains in the chest	34	29	7	13	41	24
(d) Dimmed vision	4	3	1	2	5	3
(e) I don't know	20	18	14	25	34	19
Total college						
(a) Low blood pressure	46	6	30	6	76	6
(b) <u>Phlegm with traces of blood</u>	232	32	199	38	431	35
(c) Occasional pains in the chest	250	34	141	27	391	31
(d) Dimmed vision	15	2	5	1	20	2
(e) I don't know	184	26	145	28	329	26

Table 13. The substance in tobacco which appears to cause lung cancer is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) There is no substance in tobacco which will cause lung cancer	4	1	2	1	6	1
(b) Nicotine	161	48	116	61	277	53
(c) Some unknown factors in tobacco	17	5	3	2	20	4
(d) <u>Tobacco tars</u>	131	39	61	32	192	37
(e) I don't know	22	7	9	4	31	5
Sophomores						
(a) There is no substance in tobacco which will cause lung cancer	0	0	4	3	4	2
(b) Nicotine	54	43	69	60	123	51
(c) Some unknown factors in tobacco	7	7	4	3	11	5
(d) <u>Tobacco tars</u>	46	36	31	27	77	32
(e) I don't know	18	14	8	7	26	10
Juniors						
(a) There is no substance in tobacco which will cause lung cancer	1	1	1	1	2	1
(b) Nicotine	64	40	86	59	150	49
(c) Some unknown factors in tobacco	9	5	4	3	13	4
(d) <u>Tobacco tars</u>	71	44	47	31	118	38
(e) I don't know	17	10	9	6	26	8
Seniors						
(a) There is no substance in tobacco which will cause lung cancer	6	5	1	2	7	4
(b) Nicotine	40	34	28	50	68	39
(c) Some unknown factors in tobacco	10	8	0	0	10	6
(d) <u>Tobacco tars</u>	56	48	25	44	81	47
(e) I don't know	6	5	2	4	8	4

Table 13. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) There is no substance in tobacco which will cause lung cancer	11	1	8	2	19	2
(b) Nicotine	319	43	299	59	618	49
(c) Some unknown factors in tobacco	43	6	11	2	54	4
(d) <u>Tobacco tars</u>	304	41	164	32	468	37
(e) I don't know	63	9	28	5	91	7

Question 14. The work load (amount of work) of the heart of a habitual smoker is: (a) about the same as a non-smoker, (b) slightly higher than a smoker, (c) substantially higher than a non-smoker, (d) lower in the smoker than the non-smoker, (e) I don't know.

Forty-eight per cent responded correctly, while 24 per cent thought it would be only slightly higher than a non-smoker. In the freshman class there was a marked difference between the boys and girls with 62 and two per cent respectively correct. However, the senior girls (57 per cent correct) were better informed than the senior boys (53 per cent correct). Only one per cent of the students thought it would not affect the heart. The majority (52 per cent) failed to realize the great amount of work added to the heart by the use of tobacco. This information needs to be taught in the late elementary grades so the students will understand how smoking affects the circulatory system before they begin the use of tobacco. The average age that most students begin the use of tobacco is 14.

Smoking increases the heart rate from 15 to 30 beats per minute and takes 20 to 30 minutes to return to normal. It also decreases the oxygen carrying capacity of the blood, constricts the superficial blood vessels, and ruptures the air sacs in the lungs making it difficult for the blood to obtain oxygen and discard carbon dioxide. Death rates of cigarette smokers from coronary heart disease are at least double those of non-smokers (7, 32, 40, 43).

Question 15. The so-called smoker's cough: (a) is a misnomer (not correctly named), (b) is found in both smokers and non-smokers, (c) is thought to be a nervous reaction to smoking, (d) is caused by the irritation of the mucous membrane of the nose and throat, (e) I don't know.

Eighty-three per cent of the students responded correctly. The smoker's cough is so common and spoken of so often that students are fairly well-informed. There was little difference in the responses of the boys and girls. The sophomore boys and girls were the best informed with 88 and 87 per cent correct respectively. Educational programs need to be established so the students will be informed about all of the effects of tobacco as well as they are concerning this question.

All smokers have chronic bronchitis because smoking irritates the throat and upper parts of the respiratory organs and produces continued inflammation, a burning sensation, and coughing. This is the only way the individual can get rid of the irritating substances and mucus in the lungs. A number of studies have been done to determine the relationship between the smoker's cough and smoking. The findings were from double to 30 times greater among smokers, depending on the occupation of the subject (40, 43).

Table 14. The work load (amount of work) of the heart of a habitual smoker is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) About the same as a non-smoker	4	1	3	1	7	1
(b) Slightly higher than a non-smoker	53	16	115	52	168	31
(c) <u>Substantially higher than a non-smoker</u>	203	62	5	2	208	38
(d) Lower in the smoker than the non-smoker	38	12	72	32	110	20
(e) I don't know	29	9	27	13	56	10
Sophomores						
(a) About the same as a non-smoker	2	2	0	0	2	1
(b) Slightly higher than a non-smoker	17	13	15	13	32	13
(c) <u>Substantially higher than a non-smoker</u>	76	60	63	56	139	58
(d) Lower in the smoker than the non-smoker	15	12	21	18	36	15
(e) I don't know	17	13	15	13	32	13
Juniors						
(a) About the same as a non-smoker	0	0	3	2	3	1
(b) Slightly higher than a non-smoker	36	23	24	16	60	20
(c) <u>Substantially higher than a non-smoker</u>	83	54	81	55	164	54
(d) Lower in the smoker than the non-smoker	15	10	30	20	45	15
(e) I don't know	20	13	9	7	29	10
Seniors						
(a) About the same as a non-smoker	3	3	0	0	3	2
(b) Slightly higher than a non-smoker	30	26	8	14	38	22
(c) <u>Substantially higher than a non-smoker</u>	60	53	32	57	92	54
(d) Lower in the smoker than the non-smoker	12	11	10	18	22	13
(e) I don't know	9	7	6	11	15	9

Table 14. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) About the same as a non-smoker	9	1	6	1	15	1
(b) Slightly higher than a non-smoker	136	19	162	30	298	24
(c) <u>Substantially higher than a non-smoker</u>	422	58	181	34	603	48
(d) Lower in the smoker than the non-smoker	80	11	133	25	213	17
(e) I don't know	75	11	57	10	132	10

Question 16. What per cent of the tar and other substances contained in cigarette smoke is retained in the lungs when the smoker inhales? (a) none, (b) 40 per cent, (c) 90 per cent, (d) 100 per cent, (e) I don't know.

There were only 13 per cent correct responses. They were better informed with each year of college, beginning with the freshmen (nine per cent correct) to the seniors (26 per cent correct). There was little difference between the sexes in the first two years; however, the junior girls were 14 per cent correct as compared to the junior boys with 20 per cent correct. The greatest difference was in the senior boys and girls with 22 and 32 per cent correct respectively. Forty per cent of the students thought that only 40 per cent of the smoke was retained in the lungs, while 43 per cent of the students answered, "I don't know." This means that 57 per cent of the students were poorly informed and helps to explain why there is such a high percentage of lung cancer among smokers.

Table 15. The so-called smoker's cough:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Is a misnomer (not correctly named)	3	1	3	1	6	1
(b) Is found in both smokers and non-smokers	8	2	6	3	14	3
(c) Is thought to be a nervous reaction to smoking	15	5	2	1	17	3
(d) <u>Is caused by the irritation of the mucous membrane of the nose and throat</u>	269	82	171	85	440	83
(e) I don't know	35	10	19	10	54	10
Sophomores						
(a) Is a misnomer (not correctly named)	1	1	0	0	1	1
(b) Is found in both smokers and non-smokers	4	3	2	2	6	3
(c) Is thought to be a nervous reaction to smoking	3	3	3	3	6	3
(d) <u>Is caused by the irritation of the mucous membrane of the nose and throat</u>	102	88	99	87	201	87
(e) I don't know	6	5	10	8	16	6
Juniors						
(a) Is a misnomer (not correctly named)	2	1	2	1	4	1
(b) Is found in both smokers and non-smokers	5	3	5	3	10	3
(c) Is thought to be a nervous reaction to smoking	7	4	7	5	14	5
(d) <u>Is caused by the irritation of the mucous membrane of the nose and throat</u>	126	81	124	82	250	81
(e) I don't know	19	11	13	9	32	10
Seniors						
(a) Is a misnomer (not correctly named)	1	1	0	0	1	1
(b) Is found in both smokers and non-smokers	6	5	0	0	6	3
(c) Is thought to be a nervous reaction to smoking	6	5	4	7	10	6

Table 15. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
(d) <u>Is caused by the irritation of the mucous membrane of the nose and throat</u>	96	83	49	88	145	84
(e) I don't know	7	6	3	5	10	6
Total college						
(a) Is a misnomer (not correctly named)	7	1	5	1	12	1
(b) Is found in both smokers and non-smokers	23	3	13	2	36	3
(c) Is thought to be a nervous reaction to smoking	31	4	16	3	47	4
(d) <u>Is caused by the irritation of the mucous membrane of the nose and throat</u>	593	82	443	85	1036	83
(e) I don't know	67	10	45	9	112	9

When smokers inhale, up to 90 per cent of the smoke remains in the lungs, depending on how deeply they inhale. Most of the smoke particles penetrate deeply into the lungs. Particles of cancer-producing substances affect the lung tissues in three ways. They act on the cells of the bronchial epithelium to increase the number of cell layers, to destroy some of the columnar cells and cilia, and to change the nuclei of the cells. Smoking one pack of cigarettes a day, a smoker will inhale about one cup or more of cancer-producing tar in a year (1, 32).

Question 17. Utah's rank with other states in packs of cigarettes smoked for every man, woman, and child is: (a) high, (b) above average, (c) average, (d) below average, (e) low.

There were 15 per cent who answered this question correctly, while 41 per cent responded to "below average," which is a middle-of-the-road

Table 16. What per cent of the tar and other substances contained in cigarette smoke is retained in the lungs when the smoker inhales?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) None	8	3	0	0	8	2
(b) 40 per cent	110	36	100	49	210	41
(c) <u>90 per cent</u>	29	10	18	9	47	9
(d) 100 per cent	4	1	7	3	11	2
(e) I don't know	154	50	80	39	234	46
Sophomores						
(a) None	3	2	2	2	5	2
(b) 40 per cent	58	45	44	40	102	42
(c) <u>90 per cent</u>	14	11	9	8	23	10
(d) 100 per cent	1	1	0	0	1	1
(e) I don't know	53	41	56	50	109	45
Juniors						
(a) None	3	2	3	2	6	2
(b) 40 per cent	52	33	67	45	119	39
(c) <u>90 per cent</u>	32	20	21	14	53	17
(d) 100 per cent	5	3	3	2	8	3
(e) I don't know	67	42	54	37	121	39
Seniors						
(a) None	2	2	1	2	3	2
(b) 40 per cent	36	31	16	29	52	30
(c) <u>90 per cent</u>	26	22	18	32	44	26
(d) 100 per cent	5	4	1	2	6	3
(e) I don't know	47	41	20	35	67	39
Total college						
(a) None	16	2	6	1	22	2
(b) 40 per cent	256	36	227	45	483	40
(c) <u>90 per cent</u>	101	14	55	11	156	13
(d) 100 per cent	15	2	11	2	26	2
(e) I don't know	321	46	210	41	531	43

guess. The boys (19 per cent correct) were better informed than the girls (12 per cent correct) although neither one was very high. Twenty-six per cent thought it ranked "about average," while only four per cent thought it was "high."

In a survey taken in 1960, Nevada was the highest of all states in the number of cigarettes smoked per capita, and Utah was the lowest (43). The Church of Jesus Christ of Latter-Day Saints teaches total abstinence from the use of tobacco, and approximately 75 per cent of the students at Utah State University and in the State of Utah are Latter-Day Saints.

Question 18. Women smokers have a more difficult time quitting than men smokers. (a) true, (b) false, (c) I don't know.

Only 22 per cent of the students answered "true," which is the correct answer. There was an increase in correct answers with each year of college, and the senior girls were the best informed with 42 per cent correct. The only noticeable difference between the sexes was in the senior class, and the girls were better informed than the boys by 11 per cent.

Nicotine has a greater addicting effect on women than on men. After smoking one cigarette there is a 33 per cent change in blood volume of women as compared to only 19 per cent change in the men. Because of this, women tend to smoke cigarettes with lower tar and nicotine content, which lowers the cancer-producing tars they take into their lungs and accounts for the low percentage of women with lung cancer. Statistics show that only one out of 20 women who try to quit smoking are able to do so (1).

Table 17. Utah's rank with other states in packs of cigarettes smoked for every man, woman, and child is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) High	12	4	8	4	20	4
(b) Above average	41	13	36	18	77	15
(c) Average	79	25	60	30	139	27
(d) Below average	136	42	74	37	210	40
(e) <u>Low</u>	54	16	22	11	76	14
Sophomores						
(a) High	3	3	5	5	8	4
(b) Above average	11	10	12	11	23	10
(c) Average	28	25	36	33	64	29
(d) Below average	59	52	40	37	99	45
(e) <u>Low</u>	12	10	15	14	27	12
Juniors						
(a) High	9	6	11	7	20	7
(b) Above average	11	7	28	19	39	13
(c) Average	26	17	42	28	68	22
(d) Below average	79	50	50	34	129	42
(e) <u>Low</u>	32	20	17	12	49	16
Seniors						
(a) High	6	5	0	0	6	3
(b) Above average	15	13	9	17	24	14
(c) Average	28	24	15	28	43	25
(d) Below average	46	39	23	43	69	41
(e) <u>Low</u>	22	19	7	12	29	17
Total college						
(a) High	30	4	24	5	54	4
(b) Above average	78	11	85	17	163	14
(c) Average	161	23	153	30	314	26
(d) Below average	302	44	187	37	489	41
(e) <u>Low</u>	120	18	61	11	181	15

Table 18. Women smokers have a more difficult time quitting than men smokers.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>True</u>	58	17	34	17	92	17
(b) <u>False</u>	134	40	80	40	214	40
(c) I don't know	139	43	86	43	225	43
Sophomores						
(a) <u>True</u>	30	25	27	24	57	24
(b) <u>False</u>	44	37	40	35	84	36
(c) I don't know	46	38	46	41	92	40
Juniors						
(a) <u>True</u>	51	32	42	28	93	30
(b) <u>False</u>	64	41	55	38	119	40
(c) I don't know	43	27	50	34	93	30
Seniors						
(a) <u>True</u>	36	31	24	42	60	35
(b) <u>False</u>	43	38	20	35	63	36
(c) I don't know	37	31	13	22	50	29
Total college						
(a) <u>True</u>	175	24	85	18	260	22
(b) <u>False</u>	285	39	195	41	480	40
(c) I don't know	265	37	195	41	460	38

Question 19. Cancer is the only serious disease associated with smoking. (a) true, (b) false, (c) I don't know.

Ninety per cent of the students responded correctly to this question. During the past ten years there has been enough publicity and articles written on the effects of tobacco that most of the students realize there is more to think about than cancer in their decision to smoke. The only difference between the sexes was in the sophomore

class where the boys were considerably higher than the girls with 96 and 88 per cent correct respectively. Even though most of the students knew there are many harmful effects from the use of tobacco, they continue to smoke. Too many students have the idea that they will quit when they feel like it or that "It won't happen to me."

Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action. Cancer is the second in number of premature deaths in the United States caused by smoking, and heart disease is first. Other diseases caused by smoking are: bronchitis, emphysema, cardiovascular diseases, and Buerger's disease (1, 2, 7, 32, 40, 42, 43).

Question 20. The report to the surgeon general of the United States Public Health Service on "smoking and health" left some doubts that smoking really is harmful. (a) true, (b) false, (c) I don't know.

Only 72 per cent answered this question correctly, with 15 per cent responding, "I don't know." In the previous question, 90 per cent of the students said they knew that cancer was not the only serious disease caused by smoking, yet only 72 per cent answered this question correctly. Apparently many of the students are still questioning the effects of tobacco, showing that the literature and research published on the effects of tobacco are not clearly studied by many of the students. Educators need to emphasize the available information so that students will erase the doubts existing in the minds of some.

"Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action." (40, p. 33)

Table 19. Cancer is the only serious disease associated with smoking.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) True	21	6	6	3	27	5
(b) <u>False</u>	297	89	188	90	485	89
(c) I don't know	16	5	14	7	30	6
<hr/>						
Sophomores						
(a) True	1	1	2	2	3	2
(b) <u>False</u>	108	96	100	88	208	92
(c) I don't know	4	3	12	10	16	6
<hr/>						
Juniors						
(a) True	6	4	5	3	11	3
(b) <u>False</u>	143	91	133	90	276	92
(c) I don't know	8	5	9	7	17	5
<hr/>						
Seniors						
(a) True	5	4	0	0	5	3
(b) <u>False</u>	104	90	53	91	157	90
(c) I don't know	7	6	5	9	12	7
<hr/>						
Total college						
(a) True	33	4	13	2	46	4
(b) <u>False</u>	652	91	474	90	1126	90
(c) I don't know	35	5	40	8	75	6

Question 21. Nicotine causes a dilation of the superficial blood vessels. (a) true, (b) false, (c) I don't know.

Only 12 per cent of the students answered this question correctly, with 35 per cent admitting they did not know. Fifty-three per cent answered "true", which is just the opposite of constriction caused by nicotine. Students may have associated tobacco effects with that of alcohol. Apparently the majority of the students do not understand the

Table 20. The report to the surgeon general of the United States Public Health Service on "smoking and health" left some doubts that smoking really is harmful.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) True	56	16	21	10	77	14
(b) <u>False</u>	234	69	150	73	384	70
(c) I don't know	50	15	33	17	83	16
Sophomores						
(a) True	22	19	13	12	35	15
(b) <u>False</u>	85	73	76	68	161	70
(c) I don't know	10	8	23	20	33	15
Juniors						
(a) True	22	14	15	10	37	12
(b) <u>False</u>	121	75	107	73	227	74
(c) I don't know	17	11	24	17	41	14
Seniors						
(a) True	12	11	5	9	17	10
(b) <u>False</u>	83	75	42	78	125	76
(c) I don't know	16	14	7	13	23	14
Total college						
(a) True	112	15	54	10	166	13
(b) <u>False</u>	523	72	375	73	898	72
(c) I don't know	93	13	87	17	180	15

action of nicotine on the superficial blood vessels. The junior boys (28 per cent correct) were the best informed, and the junior and senior classes were better informed than the freshmen and sophomores.

Nicotine has been recognized for many years as a deadly poison. Even small amounts taken into the system by means of one cigarette causes the superficial blood vessels to constrict, raises the blood pressure, and increases the heart rate (1, 7, 32, 40, 43).

Table 21. Nicotine causes a dilation of the superficial blood vessels.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) True	169	51	103	52	272	43
(b) <u>False</u>	39	12	14	7	53	8
(c) I don't know	124	37	82	41	306	49
<hr/>						
Sophomores						
(a) True	60	51	61	53	121	52
(b) <u>False</u>	11	9	11	9	22	9
(c) I don't know	46	40	43	38	89	39
<hr/>						
Juniors						
(a) True	64	51	88	61	152	56
(b) <u>False</u>	35	28	10	7	45	17
(c) I don't know	26	21	47	32	73	27
<hr/>						
Seniors						
(a) True	68	58	31	55	99	57
(b) <u>False</u>	19	16	8	14	27	16
(c) I don't know	30	26	17	31	47	27
<hr/>						
Total college						
(a) True	361	52	283	55	644	53
(b) <u>False</u>	104	15	43	8	147	12
(c) I don't know	226	33	189	37	415	35

Question 22. The confirmed smoker develops an immunity to the physiological effects of smoking: (a) true, (b) false, (c) I don't know.

The majority of the students (68 per cent) answered this question correctly. They seem to be better informed with each year in school beginning with the freshmen (61 per cent correct) and up to the seniors (79 per cent correct). There was no noticeable difference between the boys and the girls. Eighteen per cent of the students answered "true,"

and this may be because people develop an immunity to many physiological effects, and they think this will happen with smoking.

The harmful effects of smoking are the same for a person who has smoked 20 years as they are for a beginning smoker. Some of these effects are: constriction of the superficial blood vessels, rise in blood pressure, increased heart rate, cancer, smoker's cough, emphysema, and all smokers have chronic bronchitis (1, 7, 32, 40, 43).

Table 22. The confirmed smoker develops an immunity to the physiological effects of smoking.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) True	75	23	41	20	116	22
(b) <u>False</u>	205	63	120	60	325	61
(c) I don't know	48	14	41	20	89	17
Sophomores						
(a) True	28	22	19	16	47	19
(b) <u>False</u>	79	63	77	68	156	65
(c) I don't know	18	15	18	16	36	16
Juniors						
(a) True	19	12	19	13	38	12
(b) <u>False</u>	119	75	111	78	230	78
(c) I don't know	21	13	12	9	33	10
Seniors						
(a) True	17	15	8	14	25	14
(b) <u>False</u>	91	78	45	80	136	79
(c) I don't know	8	7	3	6	11	7
Total college						
(a) True	139	19	87	17	226	18
(b) <u>False</u>	494	68	353	67	847	68
(c) I don't know	95	13	74	16	169	14

Question 23. Smoking two cigarettes only half way will result in the same nicotine intake as smoking one cigarette as short as possible. (a) true, (b) false, (c) I don't know.

Fifty-one per cent of the students answered "false," which is the correct answer, with the boys much better informed than the girls. The girls were better informed with each year in school until in their senior year they were only three per cent from the boys in correct responses. The senior boys were the best informed with 69 per cent correct; however, the freshman boys were better informed than the sophomore or junior boys. Twenty-six per cent of the students answered "true," and 23 per cent admitted they did not know. People do not realize that the shorter a cigarette is smoked the more tars and nicotine are taken into the lungs. This is why the longer cigarettes (101's) are such a step backwards. By the time the smoker takes the last few drags, more tars and nicotine are taken into the lungs.

When the smoke is drawn through the cigarette, the tars and nicotine tend to concentrate in the butt because the cigarette acts as a filter; however, since the tars and nicotine concentrate in the last part of the cigarette more tar and nicotine are drawn into the lungs on the last few drags than on the first (31).

Summary. The responses to the questions related to knowledge were considerably lower than they should have been with only 40 per cent correct answers. The total boys (42 per cent correct) were better informed on all the knowledge questions than were the girls (38 per cent); however, the senior girls (48 per cent correct) were better informed than the senior boys (46 per cent correct). There was an increase in the per cent of correct responses with each college year

Table 23. Smoking two cigarettes only half way will result in the same nicotine intake as smoking one cigarette as short as possible.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) True	72	22	66	33	138	26
(b) <u>False</u>	204	61	58	29	262	49
(c) I don't know	58	17	78	38	136	25
<hr/>						
Sophomores						
(a) True	34	28	36	32	70	30
(b) <u>False</u>	66	55	34	30	100	43
(c) I don't know	19	17	42	38	61	27
<hr/>						
Juniors						
(a) True	39	25	47	33	86	29
(b) <u>False</u>	91	58	58	43	149	50
(c) I don't know	27	17	35	24	62	21
<hr/>						
Seniors						
(a) True	16	14	13	23	29	17
(b) <u>False</u>	81	69	37	66	118	68
(c) I don't know	20	17	6	11	26	15
<hr/>						
Total college						
(a) True	161	22	162	32	323	26
(b) <u>False</u>	442	61	187	37	629	51
(c) I don't know	124	17	161	31	285	23
<hr/>						

for both the boys and the girls. The girls were a little better informed than the boys on eight of the questions with an average difference of three per cent. The boys were considerably higher than the girls on questions dealing specifically with cigarettes, such as taste, nicotine content, reaction of the body to nicotine, and amount of cigarettes smoked to effect life expectancy. Although most students understood that cigarettes are harmful to health, they did not realize how they are harmful or to what extent they are harmful.

Student opinions and attitudes toward smoking

The following questions deal with student opinions and attitudes toward smoking and the extent or control of the use of tobacco at Utah State University and other public places. The attitudes and opinions of the students are reflected by their answers.

Question 24. According to your opinion: (a) smoking costs more than the pleasure is worth, (b) there is nothing wrong with smoking, (c) smoking is a dirty habit, (d) there is nothing wrong with smoking as long as a person smokes moderately.

It was believed by 49 per cent of the students that "smoking costs more than the pleasure is worth," and 39 per cent of the students said that "smoking is a dirty habit." The girls tended to be more conservative than the boys about the cost of smoking and also leaned toward smoking as a dirty habit. Only six per cent believed that "there is nothing wrong with smoking as long as a person smokes moderately."

The attitudes of smokers and non-smokers are reflected by their answers. Those using tobacco feel there is nothing wrong with it, while those who think it is a dirty habit usually abstain. Students working to put themselves through college find it difficult to make enough money to spend on tobacco. In a different setting students may not feel that the cost would not be as important as it seems to be now. This was found to be true by Dunn (11) while studying college freshmen. Only 20 per cent smoked that were putting themselves through, while more than half of those whose parents gave them full financial support used tobacco.

Table 24. According to your opinion:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Smoking costs more than the pleasure is worth	160	47	99	47	259	47
(b) There is nothing wrong with smoking	14	4	7	3	21	4
(c) Smoking is a dirty habit	133	39	103	49	236	43
(d) There is nothing wrong with smoking as long as a person smokes moderately	33	10	2	1	35	6
Sophomores						
(a) Smoking costs more than the pleasure is worth	53	43	59	50	112	47
(b) There is nothing wrong with smoking	10	9	2	2	12	5
(c) Smoking is a dirty habit	51	42	46	39	97	41
(d) There is nothing wrong with smoking as long as a person smokes moderately	8	6	10	9	18	7
Juniors						
(a) Smoking costs more than the pleasure is worth	85	49	86	55	171	52
(b) There is nothing wrong with smoking	22	13	8	5	30	9
(c) Smoking is a dirty habit	51	29	56	36	107	33
(d) There is nothing wrong with smoking as long as a person smokes moderately	15	9	6	4	21	6
Seniors						
(a) Smoking costs more than the pleasure is worth	54	47	30	54	84	49
(b) There is nothing wrong with smoking	14	12	3	5	17	10
(c) Smoking is a dirty habit	43	37	21	38	64	37
(d) There is nothing wrong with smoking as long as a person smokes moderately	5	4	2	3	7	4

Table 24. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) Smoking costs more than the pleasure is worth	352	47	274	51	626	49
(b) There is nothing wrong with smoking	60	8	20	4	80	6
(c) Smoking is a dirty habit	278	37	226	41	504	39
(d) There is nothing wrong with smoking as long as a person smokes moderately	61	8	20	4	81	6

Question 25. Do you think students should be allowed to smoke at school? (a) no, not at all, (b) yes, in designated places, (c) yes, where they please, (d) no, not on school property, (e) it is the student's own business and he should do as he likes.

The majority (53 per cent) of the students were of the opinion that smoking should be allowed in designated areas, which is the policy at Utah State University since a special smoking room was designated in the Student Union Building. Ten per cent felt they should be allowed to smoke where they please, and 17 per cent thought it was the student's own business and he should do as he likes. This again reflects the attitude of those using tobacco. It is interesting to see the student responses to "no, not at all," which increases with each college year, beginning with the freshmen with 12 per cent and going up to the seniors with 17 per cent. Only seven per cent thought it should not be allowed on school property. Many of the students at Utah State University link smoking with the Latter-Day Saint Church and feel that prohibiting smoking anywhere on campus is showing church influence. This may account for many who think it should be allowed and feel it should be no one else's business.

Table 25. Do you think students should be allowed to smoke at school?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) No, not at all	36	11	28	13	64	12
(b) Yes, in designated areas	190	56	126	60	316	58
(c) Yes, where they please	32	9	8	4	40	7
(d) No, not on school property	24	7	19	9	43	8
(e) It is the student's own business and he should do as he likes	57	17	28	14	85	15
Sophomores						
(a) No, not at all	15	13	10	11	25	12
(b) Yes, in designated areas	56	47	40	45	96	46
(c) Yes, where they please	15	13	9	10	24	12
(d) No, not on school property	8	6	6	7	15	7
(e) It is the student's own business and he should do as he likes	25	21	23	27	48	23
Juniors						
(a) No, not at all	20	19	12	8	32	13
(b) Yes, in designated areas	36	35	92	63	128	51
(c) Yes, where they please	18	17	9	6	27	11
(d) No, not on school property	9	9	7	5	16	6
(e) It is the student's own business and he should do as he likes	21	20	27	18	48	19
Seniors						
(a) No, not at all	19	20	7	12	26	17
(b) Yes, in designated areas	38	40	36	62	74	48
(c) Yes, where they please	20	21	0	0	20	13
(d) No, not on school property	6	6	2	3	8	5
(e) It is the student's own business and he should do as he likes	12	13	13	23	24	17
Total college						
(a) No, not at all	90	14	57	11	147	13
(b) Yes, in designated areas	320	49	294	59	614	53
(c) Yes, where they please	85	13	26	5	111	10
(d) No, not on school property	47	7	34	7	81	7
(e) It is the student's own business and he should do as he likes	115	17	91	18	206	17

Question 26. Do you think you will want your children to smoke?

- (a) No, I will forbid it, (b) No, I will caution them against it,
(c) I will let them choose for themselves, (d) yes, I think there
is nothing wrong with it, (e) I am undecided.

Eighty-four per cent of the students do not want their children to smoke, with more boys than girls stating they would forbid it. This may be because the boys have had more exposure to the use of tobacco and seen more of its effects and are therefore more demanding. Fifteen per cent of the students responded that they would let their children choose for themselves, with six per cent more seniors responding to this than freshmen.

It is gratifying to see that less than one per cent of the students said, "Yes, there is nothing wrong with it." This shows that there are many who smoke who are dissatisfied with their habit and do not want their children to be smokers. It is important for students to know that the best way to prevent their children from smoking is to set an example. There is a much higher percentage of children who smoke coming from homes in which their parents use tobacco, and evidence that the mother's example is much more important than the father's.

Question 27. Do you think people should smoke in public wherever and whenever they please? (a) yes, (b) no, (c) not sure.

The students responded to this question much the same as they did on the question of smoking at school. Seventy-four per cent of the students thought people should not smoke in public wherever and whenever they please. The senior girls (86 per cent) responded the highest to "no," not letting people smoke when they please, and the total girls

Table 26. Do you think you will want your children to smoke?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) No, I will forbid it	112	34	62	31	174	33
(b) No, I will caution them about it	164	49	116	59	280	53
(c) I will let them choose for themselves	53	16	18	9	71	13
(d) Yes, I think there is nothing wrong with it	0	0	0	0	0	0
(e) I am undecided	4	1	2	1	6	1
Sophomores						
(a) No, I will forbid it	25	21	19	16	44	19
(b) No, I will caution them about it	65	55	75	65	140	60
(c) I will let them choose for themselves	26	22	19	16	45	19
(d) Yes, I think there is nothing wrong with it	1	1	1	1	2	1
(e) I am undecided	1	1	2	2	3	1
Juniors						
(a) No, I will forbid it	37	23	29	20	66	22
(b) No, I will caution them about it	94	59	102	69	196	64
(c) I will let them choose for themselves	24	16	15	10	39	12
(d) Yes, I think there is nothing wrong with it	0	0	2	1	2	1
(e) I am undecided	3	2	0	0	3	1
Seniors						
(a) No, I will forbid it	25	22	7	14	32	19
(b) No, I will caution them about it	64	55	36	71	100	60
(c) I will let them choose for themselves	24	20	8	15	32	19
(d) Yes, I think there is nothing wrong with it	2	2	0	0	2	1
(e) I am undecided	1	1	0	0	1	1

Table 26. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) No, I will forbid it	199	28	117	22	316	26
(b) No, I will caution them about it	387	53	329	64	716	58
(c) I will let them choose for themselves	127	18	60	12	187	15
(d) Yes, I think there is nothing wrong with it	3	0	3	1	6	0
(e) I am undecided	9	1	4	1	13	1

(83 per cent) were much higher than the boys (68 per cent). Sixteen per cent of the students thought people should smoke where they wanted, with the senior boys most tolerant of other people's smoking habits with 28 per cent answering "yes." It was found in question 28 that 13 per cent of the students smoke regularly, which corresponds with the 16 per cent who think they should smoke when and where they please. It is evident from the question that the attitudes and opinions of smokers and non-smokers are reflected in their answers.

Summary. The majority (88 per cent) of the students were of the opinion that smoking is a "dirty habit" or it "costs more than the pleasure is worth." This left 12 per cent who felt smoking was okay. Fifty-three per cent of the students agree with the college administration that smoking should be allowed in designated areas; however, 20 per cent thought it should not be allowed at all. Seventy-four per cent thought smoking should be controlled in all public places. Eighty-four per cent do not want their children to be smokers, with less than one per cent saying there is nothing wrong with smoking.

Table 27. Do you think people should smoke in public wherever and whenever they please?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) Yes	69	18	16	8	85	15
(b) No	245	65	167	84	412	72
(c) Not sure	61	17	15	8	76	13
<hr/>						
Sophomores						
(a) Yes	24	21	19	15	43	18
(b) No	84	72	100	78	184	75
(c) Not sure	9	7	9	7	18	7
<hr/>						
Juniors						
(a) Yes	31	20	14	10	45	15
(b) No	117	74	123	84	240	79
(c) Not sure	10	6	10	6	20	6
<hr/>						
Seniors						
(a) Yes	32	28	5	9	37	22
(b) No	73	63	48	86	121	70
(c) Not sure	11	9	3	5	14	8
<hr/>						
Total college						
(a) Yes	156	20	54	10	210	16
(b) No	519	68	438	83	957	74
(c) Not sure	91	12	37	7	128	10
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Smoking experiences

Student responses to the following questions determine the percentage of the students using tobacco, the extent of their use of tobacco, and the reasons they continue to use tobacco.

Question 28. Have you ever smoked or do you now smoke? (a) I smoke half a pack or more of cigarettes almost every day, (b) I smoke cigarettes almost every day, but less than a half a pack, (c) I don't smoke cigarettes

every day, but I do smoke at least once a week, (d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time, (e) I have never smoked.

The large number of students attending Utah State University belonging to the Church of Jesus Christ of Latter-Day Saints may account for the high per cent (50 per cent) of students never using tobacco and the 37 per cent who have tried smoking but do not smoke regularly at present. Only 13 per cent of the students were smokers, with 18 per cent of the boys using tobacco as compared to eight per cent of the girls. Research has shown that smoking increases with each college year; however, the freshmen in this study, especially the boys, were higher than the sophomores in their use of tobacco. There was an increase in the use of tobacco from the sophomores up through the seniors, with the senior boys and girls smoking considerably more heavily than the other classes.

Question 29. Do your parents smoke? (a) both of my parents smoke, (b) my father smokes, (c) my mother smokes, (d) neither of my parents smoke.

Seventy-one per cent of the students said neither of their parents smoke. This is probably because of the influence of the Church of Jesus Christ of Latter-Day Saints in the State of Utah and its effect on the out-of-state students coming into Utah to go to the University. Twenty-five per cent of the fathers and 11 per cent of the mothers are regular smokers. The boys responded that six per cent more of their fathers and two per cent more of their mothers smoke than for the girls. The girls in all four classes had a higher percentage of neither of

Table 28. Have you ever smoked or do you now smoke?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) I smoke half a pack or more of cigarettes almost every day	19	6	4	2	23	4
(b) I smoke cigarettes almost every day, but less than a half a pack	25	8	7	3	32	6
(c) I don't smoke every day, but I do smoke at least once a week	18	5	0	0	18	3
(d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time	164	50	36	18	200	37
(e) I have never smoked	105	31	158	77	263	50
Sophomores						
(a) I smoke half a pack or more of cigarettes almost every day	4	3	4	3	8	3
(b) I smoke cigarettes almost every day, but less than a half a pack	3	3	1	1	4	2
(c) I don't smoke every day, but I do smoke at least once a week	7	6	6	5	13	6
(d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time	47	40	30	26	77	33
(e) I have never smoked	56	48	75	65	131	56
Juniors						
(a) I smoke half a pack or more of cigarettes almost every day	10	6	6	4	16	5
(b) I smoke cigarettes almost every day, but less than a half a pack	5	3	4	3	9	3

Table 28. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
(c) I don't smoke every day, but I do smoke at least once a week	14	9	5	3	19	6
(d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time	82	51	34	23	116	38
(e) I have never smoked	49	31	97	67	146	48
Seniors						
(a) I smoke half a pack or more of cigarettes almost every day	15	13	6	11	21	12
(b) I smoke cigarettes almost every day, but less than a half a pack	3	3	1	2	4	2
(c) I don't smoke every day, but I do smoke at least once a week	5	4	1	2	6	4
(d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time	57	49	10	18	67	39
(e) I have never smoked	36	31	37	67	73	43
Total college						
(a) I smoke half a pack or more of cigarettes almost every day	48	7	20	4	68	5
(b) I smoke cigarettes almost every day, but less than a half a pack	36	5	13	2	49	4
(c) I don't smoke every day, but I do smoke at least once a week	44	6	12	2	56	4

Table 28. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
(d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time	350	48	110	21	460	37
(e) I have never smoked	246	34	367	71	613	50

their parents smoking than did the boys. Studies indicate that the majority of students that smoke come from homes where parents smoke. In the previous question, 13 per cent of the students are smokers, as compared to 29 per cent of the parents. It is also interesting to see that more of the boys' parents smoke and there are also more boys that smoke than girls. Parents' habits seem to have a great influence on their children.

Question 30. How long have you smoked? (a) 6 months or less, (b) 1 year, (c) 2 years, (d) 3 years or more.

Thirteen per cent of the students at Utah State University indicated that they use tobacco regularly (question 28), and 42 per cent of those who do smoke have smoked for "3 years or more." This does not agree with other studies that have shown the average age at which people begin their smoking is 15. The difference here may be attributed to the large number of Latter-Day Saints at Utah State University; however, many of those who do smoke are not members of the Church of Jesus Christ of Latter-Day Saints. Fifty per cent of the boys had smoked for three years or more, as compared to only 19 per cent of the girls. It is

Table 29. Do your parents smoke?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Both of my parents smoke	17	5	18	8	35	6
(b) My father smokes	71	21	36	17	107	20
(c) My mother smokes	11	3	5	2	16	3
(d) Neither of my parents smoke	242	71	155	73	397	71
Sophomores						
(a) Both of my parents smoke	10	9	7	6	17	7
(b) My father smokes	23	20	19	17	42	19
(c) My mother smokes	8	7	3	3	11	5
(d) Neither of my parents smoke	74	64	83	74	157	69
Juniors						
(a) Both of my parents smoke	12	7	8	5	20	6
(b) My father smokes	29	18	15	10	44	14
(c) My mother smokes	10	6	4	3	14	5
(d) Neither of my parents smoke	112	69	119	82	231	75
Seniors						
(a) Both of my parents smoke	12	10	2	4	14	8
(b) My father smokes	26	22	6	11	32	19
(c) My mother smokes	10	9	3	5	13	7
(d) Neither of my parents smoke	68	59	44	80	112	66
Total college						
(a) Both of my parents smoke	51	7	35	7	86	7
(b) My father smokes	149	20	76	14	225	18
(c) My mother smokes	39	5	15	3	54	4
(d) Neither of my parents smoke	496	68	401	76	897	71

evident that the boys use tobacco more than the girls at all age levels. Many of the freshman girls (43 per cent) began using tobacco after they started college, whereas, 46 per cent of the freshman boys had been smoking for three years or more. This study agrees with other studies in that there is an increase in the use of tobacco with each college year.

Since 82 per cent of the freshman boys and 56 per cent of the freshman girls began smoking before entering college, it is necessary for educators to initiate better programs so the students can be better informed of the effects of tobacco late in their elementary school years before they begin. Tobacco education on the college level is too late, because by then most of those who will smoke have already been smoking for several years.

Question 31. I continue to smoke because: (a) it soothes my nerves, (b) it is a habit, (c) it is accepted by my social group, (d) it gives me something to do with my hands, (e) it gives me a lift.

"It soothes my nerves" and "It gives me something to do with my hands" both received the same per cent (25 per cent) of responses. Twenty-four per cent indicated "It is a habit." These three responses are closely related. Twenty-four per cent realize they are addicted, while 50 per cent will not admit it but gave answers that are symptoms of being addicted. The pharmacological actions of nicotine play an important part in making smoking such a difficult habit to break (32). Twenty-eight per cent of the seniors indicated smoking gave them a lift. The total boys responded to "It gives me a lift" four per cent more than the girls, although research indicates that women are affected more by smoking than men. There is a 33 per cent increase in blood volume for women as compared to 19 per cent increase in men from the use of cigarettes, therefore women should indicate a greater lift from cigarettes than men.

Summary. Thirteen per cent of the students are regular smokers (smoke at least once a week) with 37 per cent having tried smoking but not smoking regularly at present. Of those who do smoke, 42 per

Table 30. How long have you smoked?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) 6 months or less	11	18	3	43	14	21
(b) 1 year	14	23	2	28	16	24
(c) 2 years	8	13	2	28	10	15
(d) 3 years or more	27	46	0	0	27	40
Sophomores						
(a) 6 months or less	1	7	3	33	4	17
(b) 1 year	6	39	2	22	8	33
(c) 2 years	4	27	4	45	8	33
(d) 3 years or more	4	27	0	0	4	17
Juniors						
(a) 6 months or less	1	4	1	7	2	5
(b) 1 year	5	22	5	33	10	26
(c) 2 years	6	26	5	33	11	29
(d) 3 years or more	11	48	4	27	15	40
Seniors						
(a) 6 months or less	1	5	0	0	1	4
(b) 1 year	1	5	0	0	1	4
(c) 2 years	1	5	1	20	2	8
(d) 3 years or more	17	85	4	80	21	84
Total college						
(a) 6 months or less	14	12	7	17	21	13
(b) 1 year	26	22	9	22	35	22
(c) 2 years	19	16	17	42	36	23
(d) 3 years or more	59	50	8	19	67	42

cent have smoked for three years or more, 23 per cent have been smoking for two years, and 22 per cent have been smoking for one year.

The reasons students gave for continuing smoking are: it soothes my nerves (25 per cent), it is a habit (24 per cent), and it gives me something to do with my hands (25 per cent). Only 14 per cent continue

Table 31. I continue to smoke because:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) It soothes my nerves	14	22	3	38	17	24
(b) It is a habit	13	20	3	38	16	22
(c) It is accepted by my social group	10	11	0	0	10	14
(d) It gives me something to do with my hands	19	31	2	24	21	29
(e) It gives me a lift	8	14	0	0	8	11
Sophomores						
(a) It soothes my nerves	3	30	1	10	4	20
(b) It is a habit	1	10	2	20	3	15
(c) It is accepted by my social group	1	10	3	30	4	20
(d) It gives me something to do with my hands	5	50	3	30	8	40
(e) It gives me a lift	0	0	1	10	1	5
Juniors						
(a) It soothes my nerves	9	50	5	24	14	36
(b) It is a habit	3	17	4	19	7	18
(c) It is accepted by my social group	3	17	3	14	6	15
(d) It gives me something to do with my hands	1	5	7	34	8	21
(e) It gives me a lift	2	11	2	9	4	10
Seniors						
(a) It soothes my nerves	2	12	2	40	4	18
(b) It is a habit	9	53	2	40	11	50
(c) It is accepted by my social group	0	0	0	0	0	0
(d) It gives me something to do with my hands	1	6	0	0	1	4
(e) It gives me a lift	5	29	1	20	6	28
Total college						
(a) It soothes my nerves	28	26	11	25	39	25
(b) It is a habit	26	24	11	25	37	24
(c) It is accepted by my social group	14	13	6	14	20	14
(d) It gives me something to do with my hands	26	24	12	27	38	25
(e) It gives me a lift	15	13	4	9	19	12

to smoke because it was accepted by their social group, and 12 per cent continue because it gives them a lift.

Seventy-one per cent of the students indicated that neither of their parents used tobacco, seven per cent indicated that both of their parents smoke, 18 per cent said their father smokes, and four per cent said their mother smokes.

The influence of certain factors on smoking status

There are many determining factors in a person's decision to smoke or not to smoke. Among these factors are: religious training, health implications, expense, parents' objections, freedom from parental control, advertising, parents' smoking as an influence, and influence from social groups. The following questions attempt to show how much each of these factors has on the students' smoking decisions.

Question 32. How important is religion in why you are a non-smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Fifty per cent of the students considered religion a "great influence" on why they were non-smokers. Religion seems to have a greater influence on the girls, especially in their freshman year (71 per cent) and in their senior year (67 per cent). Twenty-five per cent indicated that religion had some influence on why they were non-smokers, with ten per cent responding to "little influence." Fifteen per cent indicated that religion had "no influence" on why they were non-smokers, with the boys indicating this ten per cent more than the girls. There seems to be a high relationship between importance of religion in the lives of the students and smoking. Fifty per cent of the students

(question 24) have never smoked, and 50 per cent considered religion a "great influence" on why they were non-smokers. A higher percentage of girls indicated that religious training was important in their being non-smokers, and there are less girls that smoke than boys. Nelson (28) also found this relationship to be true in a study of the high school students in Utah.

Question 33. How important are health implications in why you are a non-smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Sixty-one per cent of the students thought health had a "great influence" in their being non-smokers, with another 24 per cent responding to "some influence." The freshmen and sophomores seem to be more concerned about their health than the juniors and seniors, which would be natural because more seniors smoke than freshmen. Tobacco has such an addicting effect on people that health matters are pushed aside. It doesn't seem to matter what they see or hear about the effects of tobacco, they continue to use it thinking, "It won't happen to me." Although the majority of the students in this study are not too well informed as to the effects of tobacco, they have gleaned enough information to realize that it is harmful to their health. Only five per cent indicated that health had "no influence" in their decision not to smoke.

Question 34. How important is expense in why you are a non-smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Table 32. How important is religious training in why you are a non-smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	145	51	139	71	284	59
(b) Some influence	64	22	33	17	97	20
(c) Little influence	36	12	8	4	44	9
(d) No influence	41	15	15	8	56	12
Sophomores						
(a) Great influence	48	44	62	61	110	52
(b) Some influence	27	25	25	25	52	25
(c) Little influence	8	7	8	8	16	8
(d) No influence	25	24	7	6	32	15
Juniors						
(a) Great influence	56	41	74	47	130	49
(b) Some influence	35	25	30	23	65	24
(c) Little influence	18	13	14	11	32	12
(d) No influence	29	21	11	9	40	15
Seniors						
(a) Great influence	41	41	35	67	76	50
(b) Some influence	27	27	12	23	39	26
(c) Little influence	7	7	4	8	11	7
(d) No influence	25	25	1	2	26	17
Total college						
(a) Great influence	290	46	213	56	503	50
(b) Some influence	153	24	100	26	253	25
(c) Little influence	69	11	34	9	103	10
(d) No influence	120	19	34	9	154	15

Each answer received approximately the same per cent of responses ranging from 22 to 29 per cent. The freshmen were the most concerned about expense (26 per cent) but this decreased with each college year until the seniors indicated that only 16 per cent thought expense was a "great influence." The freshmen are probably more money-conscious

Table 33. How important are health implications in why you are a non-smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	172	64	135	63	307	64
(b) Some influence	66	24	40	19	106	22
(c) Little influence	20	8	25	12	45	9
(d) No influence	10	4	14	6	24	5
Sophomores						
(a) Great influence	65	62	64	62	129	62
(b) Some influence	21	20	27	26	48	23
(c) Little influence	9	8	9	9	18	9
(d) No influence	10	10	4	3	14	6
Juniors						
(a) Great influence	81	57	72	55	153	56
(b) Some influence	40	28	39	30	79	29
(c) Little influence	15	10	15	12	30	11
(d) No influence	6	5	4	3	10	4
Seniors						
(a) Great influence	56	58	36	63	92	60
(b) Some influence	19	20	14	24	33	21
(c) Little influence	13	13	7	13	20	13
(d) No influence	9	9	0	0	9	6
Total college						
(a) Great influence	374	61	307	61	681	61
(b) Some influence	146	24	120	24	266	24
(c) Little influence	57	9	55	11	112	10
(d) No influence	35	6	22	4	57	5

because they have been cautioned by their parents before leaving home for probably the first time in their lives. However, as they get closer to graduation and find that their parents will continue to send them the money they need they become less concerned. It is quite evident that expense is not as important as religious training or health implications in why students are non-smokers.

Table 34. How important is expense in why you are a non-smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	73	27	47	24	120	26
(b) Some influence	76	29	45	23	121	27
(c) Little influence	68	25	41	21	109	23
(d) No influence	48	18	65	32	113	24
Sophomores						
(a) Great influence	25	24	25	25	50	24
(b) Some influence	22	21	21	20	43	21
(c) Little influence	27	26	21	20	48	23
(d) No influence	29	29	35	35	64	32
Juniors						
(a) Great influence	22	16	25	19	47	17
(b) Some influence	34	25	27	21	61	23
(c) Little influence	46	33	32	25	78	29
(d) No influence	36	26	46	35	82	31
Seniors						
(a) Great influence	15	16	8	16	23	16
(b) Some influence	19	20	13	25	32	22
(c) Little influence	28	29	13	25	41	27
(d) No influence	33	35	17	32	50	35
Total college						
(a) Great influence	135	22	105	22	240	22
(b) Some influence	151	25	106	22	257	24
(c) Little influence	169	28	107	22	276	25
(d) No influence	146	25	163	34	309	29

Question 35. How important are your parents' objections in why you are a non-smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Forty per cent of the students indicated that parental influence had a "great influence" in why they were non-smokers. There was a

considerable difference between the sexes and parental objection. Fifty per cent of the girls said parental objections had a "great influence" as compared to 31 per cent of the boys; however, 41 per cent of the boys indicated that parental objection had "some influence" as to their being non-smokers as compared to 27 per cent of the girls. This is probably because of the basic make-up of the sexes. The girls do not mind saying that they are influenced by parents, whereas the boys seem to think this shows weakness and want to make people think they are the ones who determine what they will do, so they indicate that parents have just "some influence" in why they are non-smokers. The girls are closer to their mothers, and studies show that mothers have the greatest influence on their children. They are also closer to the church and indicated that religious training had more influence on why they were non-smokers than did the boys.

Question 36. How important is freedom from parental control in why you are a smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

The majority (54 per cent) of the students indicated that freedom from parental control had no influence in why they were smokers. Forty-one per cent of the freshmen indicated "some" or a "great influence" to this question; however, this influence decreases with age. Eighty per cent of the freshman girls said that freedom from parental control had "some" or a "great influence" in why they were smokers, as did 66 per cent of the senior girls. The sophomore and junior girls were considerably lower on this question with 27 per cent each. The majority of the girls are influenced more by their parents than the boys; however, 40 per cent

Table 35. How important are your parents' objections in why you are a non-smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	109	43	92	48	201	46
(b) Some influence	87	34	59	31	144	33
(c) Little influence	29	12	23	12	52	12
(d) No influence	28	11	16	9	44	9
Sophomores						
(a) Great influence	25	26	56	54	81	41
(b) Some influence	41	43	24	23	65	33
(c) Little influence	18	19	9	9	27	13
(d) No influence	12	12	14	14	26	13
Juniors						
(a) Great influence	16	15	68	53	84	35
(b) Some influence	55	52	31	24	86	36
(c) Little influence	20	18	17	13	27	16
(d) No influence	16	15	13	10	29	13
Seniors						
(a) Great influence	19	20	21	44	40	28
(b) Some influence	42	45	14	29	56	40
(c) Little influence	14	15	4	8	18	13
(d) No influence	18	20	9	18	27	19
Total college						
(a) Great influence	169	31	237	50	406	40
(b) Some influence	225	41	128	27	353	34
(c) Little influence	81	15	53	12	134	13
(d) No influence	74	13	52	11	126	13

of those who do smoke after they leave home do so to show they have achieved their independence. There are not enough girls that smoke at Utah State University included in this study to draw too many conclusions.

Table 36. How important is freedom from parental control in why you are a smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	8	13	1	20	9	13
(b) Some influence	16	25	3	60	19	28
(c) Little influence	11	17	0	0	11	16
(d) No influence	29	45	1	20	30	43
Sophomores						
(a) Great influence	2	10	1	9	3	10
(b) Some influence	5	25	2	18	7	22
(c) Little influence	1	5	3	27	4	13
(d) No influence	12	60	5	46	17	55
Juniors						
(a) Great influence	0	0	0	0	0	0
(b) Some influence	6	26	4	27	10	26
(c) Little influence	5	22	3	20	8	21
(d) No influence	12	52	8	53	20	53
Seniors						
(a) Great influence	2	10	1	16	3	11
(b) Some influence	1	5	3	50	4	15
(c) Little influence	2	10	1	16	3	11
(d) No influence	16	75	1	17	17	63
Total college						
(a) Great influence	12	9	3	8	15	6
(b) Some influence	28	22	12	32	40	24
(c) Little influence	19	15	7	19	26	16
(d) No influence	69	54	15	41	84	54

Question 37. How important is advertising of some type (TV, radio, etc.) in why you are a smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Eighty-six per cent of the students felt that advertising had little or no influence in why they were smoking. Nineteen per cent of the freshmen indicated that advertising had "some" or a "great influence" in their smoking; however, this decreases with age. The freshman girls (17 per cent) indicated that advertising had the greatest influence in why they were smokers. Apparently people are not conscious of the influence of advertising on their decisions. Cigarette companies could not afford to spend millions of dollars each year on advertising if it influenced only 14 per cent of the people. It is gratifying to see that advertising on television by the American Cancer Society is also showing the harmful aspects of smoking, which will help the young people in their smoking decisions.

Question 38. How much influence has your parents' smoking had on why you are a smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Sixty-three per cent of the students who use tobacco indicated that parents' smoking had no influence on their smoking. This does not agree with the study conducted by Dunn (11) on college freshmen. She found that parents' smoking had a great influence on the children smoking and found that it had the same influence on children if both parents or just one of them used tobacco. Apparently students are not conscious of their parents' influence on their behavior. Five per cent indicated that parental influence and use of tobacco was a "great influence" in their smoking status, with 13 per cent indicating parents' smoking had only "some influence." The junior girls (six per cent) were the only girls indicating that parents' smoking had influenced their smoking, while the

Table 37. How important is advertising of some type (TV, radio, etc.) in why you are a smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	4	6	1	17	5	7
(b) Some influence	9	13	0	0	9	12
(c) Little influence	18	27	2	33	20	28
(d) No influence	35	53	3	50	38	53
Sophomores						
(a) Great influence	0	0	1	9	1	3
(b) Some influence	2	10	1	9	3	10
(c) Little influence	7	35	2	18	9	29
(d) No influence	11	55	7	64	18	58
Juniors						
(a) Great influence	1	5	0	0	1	3
(b) Some influence	3	14	1	6	4	10
(c) Little influence	3	14	1	6	4	10
(d) No influence	14	67	15	88	29	77
Seniors						
(a) Great influence	1	5	0	0	1	4
(b) Some influence	0	0	0	0	0	0
(c) Little influence	4	19	2	40	6	23
(d) No influence	16	76	3	60	19	73
Total college						
(a) Great influence	6	7	2	5	8	5
(b) Some influence	14	11	2	5	16	9
(c) Little influence	32	25	7	18	39	23
(d) No influence	76	57	28	72	104	63

junior boys were the only boys who did not feel parents' smoking had any effect on their smoking. Parents should realize that their example and influence in the home has a greater influence on their children than health classes.

Table 38. How much influence has your parents' smoking had on why you are a smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	5	7	0	0	5	7
(b) Some influence	9	13	2	33	11	15
(c) Little influence	10	15	2	33	12	16
(d) No influence	43	65	2	34	45	62
Sophomores						
(a) Great influence	1	6	0	0	1	4
(b) Some influence	1	6	1	10	2	7
(c) Little influence	4	21	6	60	10	36
(d) No influence	12	67	3	30	15	53
Juniors						
(a) Great influence	0	0	1	6	1	3
(b) Some influence	4	17	2	12	6	8
(c) Little influence	6	26	3	17	9	19
(d) No influence	13	57	11	65	24	60
Seniors						
(a) Great influence	1	5	0	0	1	4
(b) Some influence	2	10	0	0	2	8
(c) Little influence	2	10	2	40	4	15
(d) No influence	16	75	3	60	19	73
Total college						
(a) Great influence	7	5	1	3	8	5
(b) Some influence	16	12	5	13	21	13
(c) Little influence	22	17	13	34	35	19
(d) No influence	84	66	19	50	103	63

Question 39. How much influence has your social group had on why you are a smoker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Fifty-eight per cent of the students said that their social group had influenced their smoking, which indicates that 42 per cent of the students are not conscious of the pressure of their social group. Brotherson (8) found that those who smoke associated with friends who smoke, and they are influenced by this kind of friends. The seniors (38 per cent) and the sophomores (26 per cent) said they were less affected by social groups than the freshmen and juniors.

There was a noticeable difference between the sexes, especially in the freshman and senior classes. The girls indicated that their social groups had much more of an influence on their behavior than did the boys. Seventy per cent of the girls as compared to 55 per cent of the boys indicated that social groups had influenced their smoking habits. It seems that girls are influenced more than the boys by the people they associated with. If the girls are close to their parents they have a great influence on them; however, if they associate with a certain group they seem to be affected by that group.

Summary. There were a number of factors influencing the non-smokers in their decision not to smoke. Health implications had the greatest influence (61 per cent), and this was followed by religious training (50 per cent). Forty per cent of the students felt that parental objections had a "great influence" in why they were non-smokers, with another 34 per cent indicating it had "some influence." Only 22 per cent of the students felt that expense was a "great influence" in their being non-smokers.

Of all the factors studied (freedom from parental control, TV and radio advertising, parents' smoking, and the influence of their social group), only the influence of their social group was rated as having a

Table 39. How much influence has your social group had on why you are a smoker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	19	28	5	72	24	32
(b) Some influence	24	36	1	14	25	34
(c) Little influence	10	15	1	14	11	15
(d) No influence	14	21	0	0	14	19
Sophomores						
(a) Great influence	3	16	3	25	6	19
(b) Some influence	7	32	3	25	10	32
(c) Little influence	4	21	3	25	7	23
(d) No influence	5	31	3	25	8	26
Juniors						
(a) Great influence	5	25	7	47	12	34
(b) Some influence	5	25	5	33	10	29
(c) Little influence	5	25	1	7	6	17
(d) No influence	5	25	2	13	7	20
Seniors						
(a) Great influence	3	14	7	47	12	35
(b) Some influence	3	14	2	40	5	15
(c) Little influence	3	14	1	20	4	12
(d) No influence	12	58	1	20	13	38
Total college						
(a) Great influence	30	24	16	41	46	28
(b) Some influence	39	31	11	29	50	30
(c) Little influence	22	17	6	15	28	17
(d) No influence	36	28	6	15	42	25

"great influence" in why they were smoking. This was rated by 23 per cent of the students with the others all being below six per cent.

Source and credibility of tobacco information

The following two questions pertain to the source of information that students have about tobacco and smoking and the credibility of the information.

Question 40. Where did you get most of your information about smoking and tobacco? (a) parents or members of my family, (b) friends, (c) health classes, (d) from smoking experiences, (e) physicians, (f) church leaders, (g) newspapers, (h) magazines, (i) seminary or religious teachers, (j) other.

An examination of the data shows that "health classes" are the best source of information about smoking and tobacco. This appears to be followed in order by: parents or members of my family, seminary or religion teachers, church leaders, magazines, newspapers, friends, and from smoking experiences. When seminary or religion teachers and church leaders are combined and called a religious teaching source of information, they are ranked second to the health classes. The influence of the Church of Jesus Christ of Latter-Day Saints in Utah and its emphasis upon total abstinence from tobacco would contribute to a different situation than would be found in most other universities outside the state. This indicates that health teachers and religious teachers should have a good background and be qualified to teach tobacco education.

Question 41. How reliable do you consider the two best sources of your information about smoking and tobacco? (a) extremely reliable, (b) good reliability, (c) average reliability, (d) fair reliability, (e) poor reliability.

Ninety-two per cent of the students think their information is average or above in reliability, with the girls (44 per cent) higher than the boys (36 per cent) in thinking their source of information extremely reliable. The freshmen (44 per cent) feel they are the best informed; however, there is a decrease in this feeling with each year.

Table 40. Where did you get most of your information about smoking and tobacco? If more than one answer, rank 1, 2, 3 in the best order.

Parents or members of my family			
Girls	1--106	2--31	3--37
Boys	1--139	2--42	3--23
Friends			
Girls	1-- 36	2--26	3--10
Boys	1-- 66	2--22	3--15
Health classes			
Girls	1--237	2--46	3--32
Boys	1--287	2--66	3--43
From smoking experiences			
Girls	1-- 15	2-- 9	3-- 6
Boys	1-- 55	2--28	3--13
Physicians			
Girls	1-- 22	2--12	3--15
Boys	1-- 45	2--19	3--23
Church leaders			
Girls	1-- 52	2--51	3--36
Boys	1-- 75	2--53	3--31
Newspapers			
Girls	1-- 31	2--28	3--32
Boys	1-- 65	2--37	3--30
Magazines			
Girls	1-- 47	2--39	3--46
Boys	1-- 63	2--39	3--39
Seminary or religion teachers			
Girls	1-- 56	2--53	3--37
Boys	1-- 72	2--29	3--35
Other			
Girls	1-- 16	2-- 3	3-- 5
Boys	1-- 50	2-- 6	3--13

The seniors (30 per cent) are the lowest, and apparently are beginning to realize that they have a lot yet to learn. It seems that the younger students have more confidence in their teachers; however, by the time they become seniors they begin to realize that some of their former

teachers were not too well informed and have some doubts. With the research and studies undertaken during the past ten years, health and religion teachers should be well informed and teach reliable information so students can depend on what they learn in these classes.

Table 41. How reliable do you consider the two best sources of your information about smoking and tobacco?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Extremely reliable	123	38	104	53	227	44
(b) Good reliability	124	39	61	31	185	36
(c) Average reliability	44	14	24	12	68	13
(d) Fair reliability	23	7	2	1	25	5
(e) Poor reliability	6	2	4	3	10	2
Sophomores						
(a) Extremely reliable	49	43	42	38	91	41
(b) Good reliability	37	32	44	41	81	36
(c) Average reliability	18	16	16	14	34	15
(d) Fair reliability	7	6	5	5	12	5
(e) Poor reliability	4	3	2	2	6	3
Juniors						
(a) Extremely reliable	47	32	56	40	103	36
(b) Good reliability	62	42	47	34	109	38
(c) Average reliability	27	18	26	19	53	19
(d) Fair reliability	4	3	8	6	12	4
(e) Poor reliability	6	5	1	1	7	3
Seniors						
(a) Extremely reliable	33	29	19	34	52	30
(b) Good reliability	50	43	22	40	72	42
(c) Average reliability	21	18	9	16	30	18
(d) Fair reliability	10	9	3	6	13	8
(e) Poor reliability	1	1	2	4	3	2
Total college						
(a) Extremely reliable	252	36	221	44	473	40
(b) Good reliability	273	39	174	35	447	37
(c) Average reliability	110	16	75	15	185	15
(d) Fair reliability	44	6	18	4	62	5
(e) Poor reliability	17	3	9	2	26	3

Summary. Health classes were the students' best source of information about smoking and tobacco, and this was followed in order by: a religious source of information, parents or members of the family, magazines, newspapers, friends, and from smoking experience. Ninety-two per cent of the students indicated that they felt their two best sources of information to be average or above in reliability.

Alcohol and Health

The following questions were designed to determine the students' understanding, attitudes, and opinions concerning the effects of alcohol and alcoholism. A number of questions in this section were compiled by the researcher and the rest were taken from the Alcohol Education Quiz in the Senior High School Health Guide, Unit II, Alcohol and Health, Utah State Department of Public Instruction, and were previously used by Nelson (28) in the high schools of Utah.

This section contains questions in the following areas: (a) specific knowledge as it relates to alcohol and health, (b) student opinions and attitudes toward drinking, (c) drinking experiences, (d) the influence of certain factors on drinking status, and (e) source and credibility of alcohol information.

Specific knowledge as it relates to alcohol and health

The following questions were used to determine student knowledge and understanding of the effects of alcohol on health. These questions were taken from the Alcohol Education Quiz in the Senior High School Health Guide, Unit II, Alcohol and Health, Utah State Department of Public Instruction. Students in the State of Utah should have covered much of this material in their high school health classes.

Question 42. What per cent of alcoholics are of the skid row type?

- (a) 5 per cent, (b) 20 per cent, (c) 50 per cent, (d) 75 per cent,
(e) 90 per cent, (f) I don't know.

Only 14 per cent of the students answered this question correctly, with the boys being better informed than the girls in all four classes. The majority (52 per cent) indicated that they did not know, which means they are poorly informed on this point. Sixteen per cent answered that 20 per cent are of the skid row type, which is far from true.

Only a small percentage of the alcoholics are the visible skid row type. Over 90 per cent of this country's alcoholics are to be found in their homes and at their jobs trying to lead normal lives. The best studies indicate that about three per cent of the alcoholics are found on skid row; this is where they gravitate (23, 27).

Question 43. The alcohol used for all beverages is: (a) methyl, (b) amyl, (c) propyl, (d) ethyl, (e) I don't know.

Only 18 per cent of the students knew the kind of alcohol in alcoholic beverages. The boys (22 per cent) were better informed than the girls (13 per cent); however, both groups should be better informed. Students at this stage should have been taught that there are many types of alcohol and be informed as to their effects. Many deaths have been caused because of drinking the wrong type of alcohol. For example, a girl attending Utah State University died after drinking some ditto fluid which contains methyl alcohol, not realizing what the effect would be.

Table 42. What per cent of alcoholics are of the skid row type?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>5 per cent</u>	35	29	19	9	54	10
(b) 20 per cent	57	17	27	13	84	15
(c) 50 per cent	18	5	8	4	26	5
(d) 75 per cent	27	8	6	3	33	6
(e) 90 per cent	27	8	15	7	42	8
(f) I don't know	173	53	133	64	306	56
Sophomores						
(a) <u>5 per cent</u>	15	13	12	11	27	12
(b) 20 per cent	24	21	19	17	43	19
(c) 50 per cent	9	8	7	6	16	7
(d) 75 per cent	2	2	6	5	8	4
(e) 90 per cent	6	5	13	12	19	8
(f) I don't know	59	51	54	49	113	50
Juniors						
(a) <u>5 per cent</u>	26	17	22	15	58	20
(b) 20 per cent	23	14	20	14	43	14
(c) 50 per cent	9	6	13	9	22	7
(d) 75 per cent	8	5	4	3	12	4
(e) 90 per cent	10	6	14	9	24	7
(f) I don't know	84	52	74	50	158	48
Seniors						
(a) <u>5 per cent</u>	33	28	10	19	43	25
(b) 20 per cent	20	17	8	14	28	16
(c) 50 per cent	2	2	1	2	3	2
(d) 75 per cent	4	3	4	7	8	4
(e) 90 per cent	8	7	1	2	9	5
(f) I don't know	49	43	31	56	80	46
Total college						
(a) <u>5 per cent</u>	109	15	63	12	172	14
(b) 20 per cent	124	17	74	14	198	16
(c) 50 per cent	38	5	29	6	67	5
(d) 75 per cent	41	6	20	4	61	5
(e) 90 per cent	51	7	43	8	94	8
(f) I don't know	365	50	292	56	657	52

The alcohol used for all beverages is ethyl alcohol. The alcohols known as methyl, butyl, propyl, amyl, and others are useful in industry and commercial purposes, but they are dangerous to consume, causing blindness and even death (24, 37, 41).

Table 43. The alcohol used for all beverages is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Methyl	73	24	35	20	108	23
(b) Amyl	24	8	9	5	33	7
(c) Propyl	11	4	3	2	14	3
(d) <u>Ethyl</u>	54	17	24	14	78	16
(e) I don't know	147	47	99	59	246	51
Sophomores						
(a) Methyl	21	19	12	12	33	15
(b) Amyl	8	7	4	4	12	6
(c) Propyl	8	7	7	7	15	7
(d) <u>Ethyl</u>	21	19	11	10	32	15
(e) I don't know	51	48	70	67	121	57
Juniors						
(a) Methyl	18	11	22	16	40	14
(b) Amyl	8	5	7	5	15	5
(c) Propyl	10	6	8	6	18	6
(d) <u>Ethyl</u>	30	19	15	11	45	15
(e) I don't know	80	59	81	62	161	60
Seniors						
(a) Methyl	22	19	13	23	35	20
(b) Amyl	7	6	2	4	9	5
(c) Propyl	3	3	1	2	4	2
(d) <u>Ethyl</u>	42	36	9	16	51	30
(e) I don't know	41	36	31	55	72	43
Total college						
(a) Methyl	134	20	82	18	216	19
(b) Amyl	47	7	22	5	69	6
(c) Propyl	32	5	19	4	51	4
(d) <u>Ethyl</u>	147	22	59	13	206	18
(e) I don't know	319	46	281	60	600	53

Question 44. "100 proof" on a distilled beverage means what per cent is alcohol? (a) 25 per cent, (b) 50 per cent, (c) 75 per cent, (d) 100 per cent, (e) I don't know.

Forty-two per cent of the students answered this question correctly, with the boys (56 per cent correct) much better informed than the girls (20 per cent correct) indicating perhaps that this information was not obtained in a formal class. Students seemed to be better informed with each year in school for both the boys and girls. Twenty-two per cent admitted that they did not know, while 29 per cent thought "100 proof" meant it was 100 per cent. This is probably part of the group that said they have never drunk or had any experience with alcoholic beverages.

The term "proof" designates the alcoholic content of distilled liquors. It comes from an old English test of whiskey. Gunpowder was moistened with whiskey and a flame applied to it. If it burned it was 100 per cent "proof" that it contained at least 50 per cent alcohol. Thus, 90-proof whiskey contains 45 per cent alcohol by volume (23, 41).

Question 45. Alcohol is oxidized at what rate in the average person (150 pounds)? (a) 1/3 ounce per hour, (b) 3/4 ounce per hour, (c) one ounce per hour, (d) two ounces per hour, (e) I don't know.

The majority (68 per cent) of the students admitted they did not know the answer. Only 14 per cent of the boys and nine per cent of the girls answered this question correctly. This kind of information is not taught very often in the classroom, and students are not well informed.

Each individual burns alcohol at his own rate, depending on physical condition of the boy, the weight of the person, and the size of the person's liver. Most people dispose of alcohol at the average speed

Table 44. "100 proof" on a distilled beverage means what per cent is alcohol?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) 25 per cent	7	2	5	3	12	2
(b) <u>50 per cent</u>	180	52	23	13	203	39
(c) 75 per cent	20	6	7	4	27	5
(d) 100 per cent	88	25	82	46	170	32
(e) I don't know	49	15	62	34	111	22
Sophomores						
(a) 25 per cent	1	1	4	4	5	2
(b) <u>50 per cent</u>	68	59	28	24	96	42
(c) 75 per cent	9	8	5	4	14	6
(d) 100 per cent	22	19	37	32	59	26
(e) I don't know	16	13	40	36	56	24
Juniors						
(a) 25 per cent	4	3	2	1	6	2
(b) <u>50 per cent</u>	90	59	34	24	124	42
(c) 75 per cent	12	8	6	4	18	6
(d) 100 per cent	26	17	56	40	82	28
(e) I don't know	21	13	44	31	65	22
Seniors						
(a) 25 per cent	1	1	3	5	4	2
(b) <u>50 per cent</u>	70	60	15	26	85	49
(c) 75 per cent	9	7	2	4	11	6
(d) 100 per cent	18	16	29	50	47	27
(e) I don't know	18	16	8	15	26	16
Total college						
(a) 25 per cent	13	2	14	3	27	2
(b) <u>50 per cent</u>	408	56	100	20	508	42
(c) 75 per cent	50	7	20	4	70	5
(d) 100 per cent	154	21	204	41	358	29
(e) I don't know	104	14	154	32	258	22

of 1/3 ounce of alcohol per hour. At this rate the concentration of alcohol in the blood stream will decrease by approximately 0.015 per cent per hour (24, 41).

Table 45. Alcohol is oxidized at what rate in the average person (150 pounds)?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>1/3 ounce per hour</u>	37	11	15	8	52	10
(b) <u>3/4 ounce per hour</u>	18	5	14	7	32	6
(c) One ounce per hour	29	9	15	8	44	8
(d) Two ounces per hour	17	5	2	1	19	4
(e) I don't know	227	70	142	76	369	72
Sophomores						
(a) <u>1/3 ounce per hour</u>	11	9	6	5	17	7
(b) <u>3/4 ounce per hour</u>	11	9	5	4	16	7
(c) One ounce per hour	20	17	12	11	32	14
(d) Two ounces per hour	12	10	4	3	16	7
(e) I don't know	63	55	83	77	146	65
Juniors						
(a) <u>1/3 ounce per hour</u>	17	12	15	10	32	11
(b) <u>3/4 ounce per hour</u>	10	7	6	4	16	6
(c) One ounce per hour	18	12	10	7	28	9
(d) Two ounces per hour	2	1	7	5	9	3
(e) I don't know	98	68	107	74	205	71
Seniors						
(a) <u>1/3 ounce per hour</u>	33	28	11	18	44	25
(b) <u>3/4 ounce per hour</u>	3	3	4	7	7	4
(c) One ounce per hour	13	11	4	7	17	10
(d) Two ounces per hour	5	12	2	3	7	4
(e) I don't know	64	36	39	65	103	57
Total college						
(a) <u>1/3 ounce per hour</u>	98	14	47	9	145	12
(b) <u>3/4 ounce per hour</u>	42	6	29	6	71	6
(c) One ounce per hour	80	11	41	8	121	10
(d) Two ounces per hour	36	5	15	3	51	4
(e) I don't know	452	64	371	74	823	68

Question 46. Utah's rank with other states in per capita consumption of alcoholic beverages is: (a) high, (b) above average, (c) average, (d) below average, (e) low, (f) I don't know.

Fourteen per cent of the students answered this question correctly with 28 per cent responding to "below average." Forty-two per cent of the students rank Utah as average or above with 18 per cent admitting they do not know. Students will usually take the middle ground when uncertain. Apparently the health classes have neglected to inform the students of Utah's position in the consumption of alcohol.

Utah is one of the lowest states in consumption of alcohol and is ranked approximately 46th in the fifty states, being the lowest in the western states. Alcoholism rates are also low in Utah (48th) (23).

Question 47. What is antabuse? (a) tranquilizer used by alcoholics, (b) central nervous system stimulant, (c) substance found in alcoholic beverages, (d) inert substance which makes one sick when combined with alcohol, (e) active drug which makes people not want alcoholic beverages, (f) I don't know.

Most students (92 per cent) are not very well informed about the treatment of alcoholism. Only eight per cent answered this question correctly. Most of the students have never been in a situation where antabuse has been discussed or explained and commented on their questionnaires that they had never heard the word used before. Antabuse is so commonly used in the treatment of alcoholism by rehabilitation teams that it should be better understood by the general public.

Antabuse, a drug used to control the intake of alcohol, is effective because it inhibits the oxidation of acetaldehyde. It is used by rehabilitation teams to help in the treatment of alcoholism. After the patient has been given a dose there is no apparent effect as long as he stays away from liquor; however, if the patient drinks, the acetaldehyde formed accumulates with extremely unpleasant symptoms: hot

Table 46. Utah's rank with other states in per capita consumption of alcoholic beverages is:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) High	23	7	16	8	39	7
(b) Above average	50	15	26	13	76	14
(c) Average	55	17	41	20	96	18
(d) Below average	95	27	54	26	149	28
(e) <u>Low</u>	52	16	20	10	72	13
(f) I don't know	57	18	47	23	104	22
Sophomores						
(a) High	9	7	8	6	17	7
(b) Above average	13	11	23	18	36	14
(c) Average	31	26	30	23	61	24
(d) Below average	39	32	26	20	65	26
(e) <u>Low</u>	14	12	25	19	39	16
(f) I don't know	14	12	17	14	31	13
Juniors						
(a) High	9	5	18	12	27	8
(b) Above average	33	20	28	19	61	20
(c) Average	24	14	33	23	57	18
(d) Below average	55	33	39	27	94	30
(e) <u>Low</u>	24	14	13	9	37	12
(f) I don't know	22	14	15	10	37	12
Seniors						
(a) High	13	11	2	3	17	10
(b) Above average	20	18	14	25	34	20
(c) Average	14	12	11	20	25	15
(d) Below average	33	30	15	27	48	28
(e) <u>Low</u>	16	14	8	14	24	14
(f) I don't know	17	15	6	11	23	13
Total college						
(a) High	54	7	44	8	98	8
(b) Above average	116	16	91	17	207	16
(c) Average	124	17	115	21	239	18
(d) Below average	222	30	134	25	356	28
(e) <u>Low</u>	106	14	66	12	172	14
(f) I don't know	110	16	85	17	195	16

flashes, tortuous headaches, nausea, vomiting, gasping for breath, and a racing heartbeat. If a patient drinks after taking antabuse it can be very dangerous unless a doctor understands what has happened; therefore, it is used only under a prescription (23, 42).

Question 48. Oxidation of alcohol begins in the: (a) brain, (b) stomach, (c) kidneys, (d) blood vessels, (e) liver, (f) I don't know.

It is evident from the number of responses to each possible answer that the majority of the students were guessing; however, 20 per cent answered the liver, which is correct. Twenty-four per cent of the students admitted they didn't know, while 22 per cent said the stomach, which seems to be a good, logical guess if one did not know. Students should be better informed as to the physiological aspects of alcohol. There was an increase in understanding with each year with the exception of the sophomores, and they stayed about equal with the freshmen.

Because alcohol is such a small molecule, it is absorbed into the blood from the stomach and small intestines and is transported to the liver, where the oxidation begins (23, 24, 37, 41).

Question 49. Utah laws permit the use of alcohol by all persons choosing to do so after attaining the age of: (a) 18, (b) 21, (c) I don't know.

The age limit in Utah is 21, and 94 per cent of the students answered this question correctly. It is interesting to note that the girls were a little better informed than the boys. It is expected that the students would know this, since most states have an age limit of 21, and it would be a good guess even if they were not sure.

Table 47. What is antabuse?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Tranquilizer used by alcoholics	4	2	0	0	4	1
(b) Central nervous system stimulant used to keep people from drinking	5	2	4	2	9	2
(c) Substance found in alcoholic beverages	5	2	4	2	9	2
(d) <u>Inert substance which makes one sick when combined with alcohol</u>	12	5	4	2	16	3
(e) Active drug which makes people not want alcoholic beverages	28	12	15	8	43	8
(f) I don't know	280	77	168	86	448	84
Sophomores						
(a) Tranquilizer used by alcoholics	4	3	4	3	8	3
(b) Central nervous system stimulant used to keep people from drinking	6	5	1	1	7	3
(c) Substance found in alcoholic beverages	5	4	1	1	6	3
(d) <u>Inert substance which makes one sick when combined with alcohol</u>	6	5	1	1	7	3
(e) Active drug which makes people not want alcoholic beverages	8	7	15	12	23	10
(f) I don't know	91	76	96	82	187	78
Juniors						
(a) Tranquilizer used by alcoholics	4	3	4	3	8	2
(b) Central nervous system stimulant used to keep people from drinking	7	4	3	2	10	3
(c) Substance found in alcoholic beverages	2	1	3	2	19	6
(d) <u>Inert substance which makes one sick when combined with alcohol</u>	16	10	3	2	19	6

Table 47. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
(e) Active drug which makes people not want alcoholic beverages	9	6	17	12	26	9
(f) I don't know	117	76	117	79	234	74
Seniors						
(a) Tranquilizer used by alcoholics	3	2	0	0	3	2
(b) Central nervous system stimulant used to keep people from drinking	3	2	3	5	6	3
(c) Substance found in alcoholic beverages	4	3	2	4	6	3
(d) <u>Inert substance which makes one sick when combined with alcohol</u>	17	15	12	21	29	17
(e) Active drug which makes people not want alcoholic beverages	11	9	0	0	11	6
(f) I don't know	78	69	40	70	118	69
Total college						
(a) Tranquilizer used by alcoholics	15	2	8	2	23	2
(b) Central nervous system stimulant used to keep people from drinking	21	3	11	2	32	3
(c) Substance found in alcoholic beverages	16	2	10	2	26	2
(d) <u>Inert substance which makes one sick when combined with alcohol</u>	51	7	20	4	71	8
(e) Active drug which makes people not want alcoholic beverages	56	8	47	9	103	8
(f) I don't know	566	78	421	81	987	77

Many of the students would also know from experience that identification cards showing that they are 21 are needed to buy alcoholic beverages.

Table 48. Oxidation of alcohol begins in the:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Brain	31	9	25	12	56	10
(b) Stomach	82	25	31	15	113	21
(c) Kidneys	23	7	7	10	30	5
(d) Blood vessels	63	19	50	25	113	21
(e) <u>Liver</u>	68	20	36	18	104	19
(f) I don't know	66	20	54	20	120	25
Sophomores						
(a) Brain	7	7	8	7	15	7
(b) Stomach	32	33	17	15	49	23
(c) Kidneys	9	9	15	13	24	11
(d) Blood vessels	15	15	23	20	38	18
(e) <u>Liver</u>	17	17	21	19	38	18
(f) I don't know	18	19	29	26	47	23
Juniors						
(a) Brain	11	7	18	12	29	10
(b) Stomach	34	22	29	20	63	21
(c) Kidneys	4	3	7	5	11	4
(d) Blood vessels	25	16	36	24	61	20
(e) <u>Liver</u>	41	26	21	14	62	20
(f) I don't know	40	26	36	25	76	25
Seniors						
(a) Brain	5	4	4	7	9	5
(b) Stomach	33	28	13	24	45	26
(c) Kidneys	5	4	0	0	5	3
(d) Blood vessels	20	17	15	27	35	20
(e) <u>Liver</u>	26	22	12	21	38	22
(f) I don't know	29	25	12	21	41	24
Total college						
(a) Brain	54	8	55	10	99	8
(b) Stomach	181	26	90	17	270	22
(c) Kidneys	41	6	29	6	70	6
(d) Blood vessels	123	17	124	24	247	20
(e) <u>Liver</u>	152	21	90	17	242	20
(f) I don't know	153	22	131	26	284	24

The legal age for drinking in the State of Utah is 21, and alcohol can be given to minors only by a parent, guardian, or doctor for medicinal purposes (24).

Table 49. Utah laws permit the use of alcohol by all persons choosing to do so after attaining the age of:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) 18	3	1	9	4	12	2
(b) <u>21</u>	305	96	189	92	484	95
(c) I don't know	8	3	8	4	16	3
Sophomores						
(a) 18	3	3	2	2	5	2
(b) <u>21</u>	107	94	108	96	215	96
(c) I don't know	3	3	2	2	5	2
Juniors						
(a) 18	4	3	3	5	7	3
(b) <u>21</u>	142	92	55	93	197	93
(c) I don't know	7	5	1	2	8	4
Seniors						
(a) 18	5	4	0	0	5	3
(b) <u>21</u>	111	96	53	96	164	96
(c) I don't know	0	0	2	4	2	1
Total college						
(a) 18	15	2	14	3	29	3
(b) <u>21</u>	665	95	405	96	1070	94
(c) I don't know	18	3	13	3	31	3

Question 50. Of those who use alcoholic beverages, how many will become alcoholics? (a) 1 out of 15, (b) 1 out of 20, (c) 1 out of 30, (d) 1 out of 40, (e) I don't know.

Thirty per cent of the students answered this question correctly with the girls (31 per cent correct) better informed than the boys (29 per cent correct). This left 70 per cent who either guessed or admitted that they did not know. Since alcoholism ruins so many lives and breaks up family relationships, it seems important that people be better informed as to the possibility of becoming an alcoholic.

Most people are able to control their consumption of alcohol. More than 80 million Americans drink, but at least one in 15 of these develops the disease of alcoholism, which is the inability to control the intake of alcohol. Alcoholism accounts for monumental losses to business and industry, estimated conservatively at two billion dollars per year. And the further loss due to personal and professional deterioration is beyond calculation (27).

Question 51. The reaction to alcohol after it gets into the blood stream is to: (a) stimulate, (b) depress, (c) I don't know.

Sixty-two per cent of the students understood that alcohol is a depressant; however, 34 per cent still think it is a stimulant. The boys (65 per cent correct) were better informed than the girls (57 per cent correct), with the senior boys (79 per cent correct) and the senior girls (70 per cent correct) much better informed than the other three classes. People seem more active when they drink, not because they are actually stimulated, but because they are exhibiting behavior that is otherwise kept under control. The inhibitions are removed, and other personality characteristics are observed.

Alcohol in any quantity produces a depressing, not a stimulating, action on the central nervous system. In small quantities drinking usually sharpens the appetite and may even aid digestion, because the

Table 50. Of those who use alcoholic beverages how many will become alcoholics?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>1 out of 15</u>	92	28	65	32	157	30
(b) <u>1 out of 20</u>	47	14	27	13	74	14
(c) <u>1 out of 30</u>	18	5	11	5	29	5
(d) <u>1 out of 40</u>	23	7	12	6	35	6
(e) I don't know	144	46	86	44	230	45
Sophomores						
(a) <u>1 out of 15</u>	37	34	33	30	70	32
(b) <u>1 out of 20</u>	21	19	29	27	50	23
(c) <u>1 out of 30</u>	8	7	9	8	17	8
(d) <u>1 out of 40</u>	12	11	7	6	19	9
(e) I don't know	32	39	30	29	62	28
Juniors						
(a) <u>1 out of 15</u>	41	27	42	29	83	28
(b) <u>1 out of 20</u>	29	19	28	19	57	19
(c) <u>1 out of 30</u>	9	6	14	10	23	8
(d) <u>1 out of 40</u>	13	8	15	10	28	9
(e) I don't know	60	40	45	32	105	36
Seniors						
(a) <u>1 out of 15</u>	33	29	18	32	51	30
(b) <u>1 out of 20</u>	16	14	14	25	30	18
(c) <u>1 out of 30</u>	5	4	2	4	7	4
(d) <u>1 out of 40</u>	8	7	5	9	13	7
(e) I don't know	52	46	17	30	69	41
Total college						
(a) <u>1 out of 15</u>	203	29	158	31	361	30
(b) <u>1 out of 20</u>	113	16	98	19	211	17
(c) <u>1 out of 30</u>	40	6	36	7	76	6
(d) <u>1 out of 40</u>	56	8	39	7	95	8
(e) I don't know	288	41	178	36	466	38

flow of digestive enzymes is increased, and this may aid in the misconception that alcohol is a stimulant. The releasing of tensions and inhibitions provides a feeling of stimulation but is really evidence of the depressing effect on the brain (24, 25, 41).

Table 51. The reaction to alcohol after it gets in the blood stream is to:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Stimulate	121	37	87	43	208	39
(b) Depress	188	58	106	53	294	56
(c) I don't know	16	5	9	4	25	5
Sophomores						
(a) Stimulate	42	36	38	33	80	34
(b) Depress	70	59	68	60	138	60
(c) I don't know	6	5	8	7	14	6
Juniors						
(a) Stimulate	36	23	59	40	95	31
(b) Depress	114	71	83	57	197	64
(c) I don't know	10	6	4	3	14	5
Seniors						
(a) Stimulate	25	21	16	28	41	23
(b) Depress	94	79	39	70	133	76
(c) I don't know	0	0	1	2	1	1
Total college						
(a) Stimulate	224	31	200	39	424	34
(b) Depress	465	65	296	57	762	62
(c) I don't know	32	4	22	4	54	4

Question 52. The American Medical Association classes alcoholism as: (a) a bad habit, (b) a disease, (c) neither one, (d) I don't know.

Twenty-one per cent of the students did not know that alcoholism was officially classified as a disease by the American Medical Association in 1952. It was also accepted by the World Health Organization in 1953 (28). The senior girls (91 per cent correct) were the best informed; however, the total boys were better informed than the girls.

Alcoholism is a disease. The alcoholic is a sick person who can be helped, and is just as worthy of help as a person sick with any other disease. Alcoholism is a national health problem and a public responsibility. The Council on Mental Health urges hospital administration and staffs of hospitals to look upon alcoholism as a medical problem and admit patients who are alcoholics to their hospitals for treatment (4).

Question 53. Blood alcohol concentration can be measured in different ways by taking a sample of: (a) urine, (b) breath, (c) blood, (d) all of the above, (e) none of the above.

Forty-three per cent of the students did not know that the blood alcohol concentration can be measured by samples of urine, breath, and blood. Thirty-four per cent responded to one of the three correct answers, with only nine per cent of the students indicating it could not be measured by any of the answers. The only noticeable difference between the sexes was in the sophomore class where the girls (72 per cent correct) were much better informed than the boys (59 per cent correct). Most students realize that there are ways of determining the alcohol concentration in the blood; however, they do not realize that all three of the above are very reliable. All three methods are acceptable in most court cases when the blood alcohol concentration pertains to law enforcement.

Table 52. The American Medical Association classes alcoholism as:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) A bad habit	25	7	8	3	33	6
(b) <u>A disease</u>	263	80	165	68	428	75
(c) Neither one	10	3	19	8	29	5
(d) I don't know	31	10	50	21	81	14
Sophomores						
(a) A bad habit	1	1	6	5	7	3
(b) <u>A disease</u>	97	84	91	80	188	82
(c) Neither one	10	9	6	5	16	7
(d) I don't know	8	6	11	10	19	8
Juniors						
(a) A bad habit	6	4	6	4	12	4
(b) <u>A disease</u>	122	77	126	86	248	81
(c) Neither one	13	8	5	4	18	6
(d) I don't know	18	11	9	6	27	9
Seniors						
(a) A bad habit	5	4	1	2	6	3
(b) <u>A disease</u>	93	80	51	91	144	84
(c) Neither one	5	4	0	0	5	3
(d) I don't know	13	12	4	7	17	10
Total college						
(a) A bad habit	37	5	21	4	58	4
(b) <u>A disease</u>	575	80	433	77	1008	79
(c) Neither one	38	5	30	5	68	5
(d) I don't know	70	10	74	14	144	12

Chemical tests for intoxication, employing the analysis of blood, urine, or breath for alcoholic content, are widely used. In the United States, 38 states have legislation providing for such tests in cases of alleged driving under the influence of alcohol, and courts in all the states have admitted in evidence these chemical tests for intoxication (24, 41).

Table 53. Blood alcohol concentration can be measured in different ways by taking a sample of:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Urine	19	6	14	7	33	6
(b) Breath	53	16	34	16	87	16
(c) Blood	71	21	40	20	111	21
(d) <u>All of the above</u>	177	53	102	50	279	51
(e) None of the above	16	6	14	7	30	6
Sophomores						
(a) Urine	8	7	7	6	15	6
(b) Breath	21	18	7	6	28	12
(c) Blood	11	9	8	7	19	8
(d) <u>All of the above</u>	67	59	82	72	149	64
(e) None of the above	11	7	10	9	21	10
Juniors						
(a) Urine	12	8	18	12	30	10
(b) Breath	10	6	10	7	20	7
(c) Blood	15	10	18	12	33	11
(d) <u>All of the above</u>	102	66	81	57	183	61
(e) None of the above	16	10	18	12	34	11
Seniors						
(a) Urine	5	4	4	7	9	5
(b) Breath	15	13	11	19	26	15
(c) Blood	9	8	4	7	13	7
(d) <u>All of the above</u>	72	61	31	56	103	60
(e) None of the above	16	14	6	11	22	13
Total college						
(a) Urine	44	6	43	8	87	7
(b) Breath	99	14	62	12	161	13
(c) Blood	106	15	70	13	176	14
(d) <u>All of the above</u>	418	58	296	57	714	57
(e) None of the above	59	7	48	10	107	9

Question 54. The following can tell a beginning drinker whether or not he will become an alcoholic: (a) clinical psychologist, (b) psychiatrist, (c) alcoholic, (d) sociologist, (e) none of the above.

Seventy-three per cent of the students realize that it is impossible to predict who will become an alcoholic. The girls (76 per cent correct) were better informed than the boys (72 per cent correct), with the sophomore girls the best informed with 82 per cent correct. Many people who drink have poorly adjusted personalities, and this may be why ten per cent of the students thought a clinical psychologist may tell whether or not a person would become an alcoholic.

There are tremendous individual differences in the response to alcohol and many kinds of alcoholics. Alcohol addiction is apparently no respecter of persons and no one can predict who will be an alcoholic. Social standing, professional position, or education--all present the same problem in who will become alcoholic. The individual may predict he won't become an alcoholic, and he can make this certain by refusing to drink (25, 30).

Question 55. Drinking alcohol beverages increases body temperature. (a) true, (b) false, (c) I don't know.

Only 27 per cent of the students answered this correctly, with 58 per cent thinking that alcohol increases the body temperature, which is just the opposite effect. This misconception is perpetuated because alcohol dilates the skin vessels, which contain the temperature registering nerves. This leaves the drinker with an entirely false sensation of warmth because this allows the heat to escape from the body and the body temperature is actually decreased. The boys were better informed than the girls; however, the majority (73 per cent) of the students have not had classes in which this information was taught.

Table 54. The following can tell a beginning drinker whether or not he will become an alcoholic:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Clinical psychologist	32	10	29	14	61	11
(b) Psychiatrist	29	9	14	7	43	8
(c) Alcoholic	28	8	10	5	38	7
(d) Sociologist	11	3	4	2	15	3
(e) <u>None of the above</u>	229	70	146	72	375	71
Sophomores						
(a) Clinical psychologist	15	13	10	8	25	11
(b) Psychiatrist	9	7	2	2	11	5
(c) Alcoholic	9	7	4	3	13	6
(d) Sociologist	7	6	6	5	13	6
(e) <u>None of the above</u>	77	67	97	82	174	72
Juniors						
(a) Clinical psychologist	11	7	11	7	22	7
(b) Psychiatrist	19	12	15	10	34	11
(c) Alcoholic	6	4	6	4	12	4
(d) Sociologist	2	1	3	2	5	2
(e) <u>None of the above</u>	123	76	111	77	234	76
Seniors						
(a) Clinical psychologist	11	9	4	7	15	9
(b) Psychiatrist	6	5	3	5	9	5
(c) Alcoholic	6	5	7	12	13	7
(d) Sociologist	3	2	2	3	5	3
(e) <u>None of the above</u>	90	79	40	73	130	76
Total college						
(a) Clinical psychologist	69	10	54	10	123	10
(b) Psychiatrist	63	8	34	6	97	8
(c) Alcoholic	49	7	27	5	76	6
(d) Sociologist	23	3	15	3	38	3
(e) <u>None of the above</u>	519	72	394	76	913	73

Alcohol dilates the superficial blood vessels causing an increased blood supply on the surface of the body. This allows the heat to escape from the body and the body temperature is actually decreased (23, 41, 42).

Table 55. Drinking alcohol beverages increases body temperature.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) True	170	53	127	64	297	57
(b) <u>False</u>	103	32	27	13	130	25
(c) I don't know	48	15	46	23	94	18
<hr/>						
Sophomores						
(a) True	68	57	70	61	138	59
(b) <u>False</u>	41	34	26	23	67	29
(c) I don't know	11	9	18	16	29	12
<hr/>						
Juniors						
(a) True	78	49	98	67	176	58
(b) <u>False</u>	59	37	32	22	91	30
(c) I don't know	22	14	17	11	39	12
<hr/>						
Seniors						
(a) True	68	59	34	61	102	60
(b) <u>False</u>	33	29	15	27	48	28
(c) I don't know	14	12	7	12	21	12
<hr/>						
Total college						
(a) True	384	54	329	64	713	58
(b) <u>False</u>	236	33	100	19	336	27
(c) I don't know	95	13	88	17	183	15
<hr/>						

Question 56. A person becomes an alcoholic when he or she develops an emotional and physical dependence on alcohol. (a) true, (b) false, (c) I don't know.

Most of the students are well informed as to the general description of an alcoholic as evidenced by the 89 per cent who answered correctly. The girls (92 per cent correct) were better informed than the boys; however, both girls and boys were better informed with each college year. With 6,500,000 alcoholics in the United States, and the extensive research that goes on each year, young people are expected to know what an alcoholic is. This is the only means by which they can help others and themselves.

Alcoholism is a disease, having as its chief symptom the inability to drink alcoholic beverages in moderation. Those who cannot control their drinking and develop an emotional and physical dependence on alcohol are classed as alcoholics (22).

Question 57. A respectable family background, good education, and success in business will keep a drinker from becoming an alcoholic. (a) true, (b) false, (c) I don't know.

Ninety per cent of the students realize that alcoholism is no respecter of persons. Seven per cent of the students fail to realize that anyone who drinks may become an alcoholic, regardless of position or education, with three per cent indicating they do not know.

Alcoholics come from all walks of life and have different personalities. Men and women of outstanding family and high educational and professional positions present the same problem as the unskilled laborer in their inability to control their drinking (25).

Question 58. Alcohol is habit forming. (a) true, (b) false, (c) I don't know.

Eighty per cent of the students gave what is considered to be the wrong answer. The definition of habit forming could be a point of

Table 56. A person becomes an alcoholic when he or she develops an emotional and physical dependence on alcohol.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) <u>True</u>	285	84	146	89	431	86
(b) <u>False</u>	36	11	12	7	48	9
(c) I don't know	17	5	6	4	23	5
Sophomores						
(a) <u>True</u>	99	85	103	90	202	88
(b) <u>False</u>	14	12	7	6	21	9
(c) I don't know	3	3	4	4	7	3
Juniors						
(a) <u>True</u>	143	92	139	95	282	93
(b) <u>False</u>	10	7	6	4	16	5
(c) I don't know	2	1	2	1	4	2
Seniors						
(a) <u>True</u>	110	95	54	95	164	95
(b) <u>False</u>	6	5	3	5	9	5
(c) I don't know	0	0	0	0	0	0
Total college						
(a) <u>True</u>	637	88	442	92	1079	89
(b) <u>False</u>	66	9	28	6	94	8
(c) I don't know	22	3	12	2	34	3

confusion. However, if alcohol were habit forming in the broad sense, all people who drink would develop the habit. Yet it is habit forming for some people. Sixty-eight per cent of the students indicated that alcohol is habit forming. This may be because they associate alcohol with tobacco, and alcohol with alcoholism, which is not entirely correct.

Since only one out of 13 drinkers become alcoholics or addicted, alcohol is not habit forming to 12 out of 13 drinkers. Yet it is

Table 57. A respectable family background, good education, and success in business will keep a drinker from becoming an alcoholic.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) True	33	10	11	5	44	8
(b) <u>False</u>	296	86	189	92	485	89
(c) I don't know	9	4	5	3	14	3
Sophomores						
(a) True	8	7	8	7	16	7
(b) <u>False</u>	109	93	103	90	212	92
(c) I don't know	0	0	3	3	3	1
Juniors						
(a) True	11	7	14	9	25	8
(b) <u>False</u>	143	91	131	88	274	89
(c) I don't know	4	2	4	3	8	3
Seniors						
(a) True	7	6	3	4	10	6
(b) <u>False</u>	108	93	51	92	159	92
(c) I don't know	1	1	2	3	3	2
Total college						
(a) True	59	8	36	7	95	7
(b) <u>False</u>	656	90	474	90	1130	90
(c) I don't know	14	2	14	3	28	3

habit forming or addicting to some people (27, 30). Students should understand that although all people who drink are not alcoholics, the risk of becoming one is too great to start drinking. Alcoholism is not the only danger associated with drinking. Highway accidents, crime, mental illness, and many other casualties are traced directly to drinking (22, 23, 27, 43).

Table 58. Alcohol is habit forming.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) True	251	71	169	56	420	64
(b) <u>False</u>	85	24	22	7	107	16
(c) I don't know	18	5	112	37	130	20
<hr/>						
Sophomores						
(a) True	87	76	84	56	171	64
(b) <u>False</u>	25	22	43	29	68	26
(c) I don't know	3	2	23	15	26	10
<hr/>						
Juniors						
(a) True	119	75	122	83	241	79
(b) <u>False</u>	34	21	22	15	56	18
(c) I don't know	6	4	3	2	9	3
<hr/>						
Seniors						
(a) True	70	63	46	81	116	69
(b) <u>False</u>	39	36	9	16	48	29
(c) I don't know	1	1	2	3	3	2
<hr/>						
Total college						
(a) True	527	71	421	64	948	68
(b) <u>False</u>	183	25	96	15	279	20
(c) I don't know	28	4	140	21	168	12
<hr/>						

Question 59. The alcohol found in wine is different from that found in beer or whiskey. (a) true, (b) false, (c) I don't know.

Fifty-four per cent of the students understood that the alcohol found in wine is the same as that found in beer or whiskey; however, only 18 per cent of the students (question 49) realize that the type of alcohol found in all alcoholic beverages is ethyl. Other types of alcohol, such as methyl, mistakenly consumed, can cause blindness and even death. The misconception that "winoes" behave differently than

those who drink whiskey because they drink wine is not true. The only intoxicating substance in all of the alcoholic beverages is ethyl alcohol. The only difference is in the amount of ethyl alcohol. The boys (65 per cent correct) were better informed than the girls (40 per cent correct), which indicates that perhaps this information was not obtained in a formal class; however, all students increased in their understanding of this question with age.

Ethyl alcohol is contained in all alcoholic beverages. The only intoxicating substance in all of the alcoholic beverages is ethyl alcohol. The only difference between wine, beer, whiskey, and the other alcoholic beverages is in the amount of ethyl alcohol (22, 41).

Question 60. Two bottles of beer on an empty stomach affect most people's ability to drive a car. (a) true, (b) false, (c) I don't know.

Eighty per cent of the students answered "true," which is correct. Intoxication begins with the first drop of alcohol entering the blood stream, and the effect on one's behavior also begins here. The driving ability of practically everyone will be significantly affected by the amount of alcohol contained in two bottles of beer, and the alcohol enters the blood very quickly from an empty stomach (22). The girls (82 per cent correct) were better informed than the boys (78 per cent correct). There were also 14 per cent of the boys answering "false," as compared to six per cent of the girls, indicating that this information was probably learned in a formal classroom situation.

Studies indicate that a 0.03 per cent concentration in the blood begins to be a factor in highway accidents. Two bottles of beer will put the blood alcohol concentration to 0.05, which is considerably higher than 0.03. Alcohol has a much greater effect on the individual

Table 59. The alcohol found in wine is different from that found in beer or whiskey.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) True	80	25	67	34	147	28
(b) <u>False</u>	190	59	68	35	258	50
(c) I don't know	53	16	60	31	113	22
<hr/>						
Sophomores						
(a) True	33	28	43	38	76	33
(b) <u>False</u>	75	64	46	41	121	53
(c) I don't know	9	8	23	21	32	14
<hr/>						
Juniors						
(a) True	29	19	43	30	72	24
(b) <u>False</u>	99	65	66	45	165	55
(c) I don't know	24	16	37	25	61	21
<hr/>						
Seniors						
(a) True	16	14	23	41	39	23
(b) <u>False</u>	94	81	26	46	120	70
(c) I don't know	6	5	7	13	13	7
<hr/>						
Total college						
(a) True	158	22	176	35	334	27
(b) <u>False</u>	458	65	206	40	664	54
(c) I don't know	92	13	127	25	219	19
<hr/>						

with an empty stomach than one who has been eating, and this would also vary with the amounts and kinds of food (23, 24, 28, 41).

Question 61. A fairly large percentage of alcoholics are mentally defective (low intelligence). (a) true, (b) false, (c) I don't know.

Sixty-seven per cent of the students realize that the majority of alcoholics are not mentally defective; however, 33 per cent of the students need to be better informed. Because a person does not think

Table 60. Two bottles of beer on an empty stomach affect most people's ability to drive a car.

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) <u>True</u>	250	75	165	80	415	78
(b) <u>False</u>	52	15	9	4	61	11
(c) I don't know	30	10	31	16	61	11
<hr/>						
Sophomores						
(a) <u>True</u>	94	81	98	85	192	83
(b) <u>False</u>	15	13	5	4	20	9
(c) I don't know	7	6	12	11	19	8
<hr/>						
Juniors						
(a) <u>True</u>	124	79	117	81	241	80
(b) <u>False</u>	20	13	13	9	33	11
(c) I don't know	12	8	15	10	27	9
<hr/>						
Seniors						
(a) <u>True</u>	95	82	48	86	143	83
(b) <u>False</u>	18	16	5	9	23	13
(c) I don't know	3	2	3	5	6	4
<hr/>						
Total college						
(a) <u>True</u>	563	78	428	82	991	80
(b) <u>False</u>	105	14	32	6	137	11
(c) I don't know	52	8	61	12	113	9
<hr/>						

as clearly or act as expected when he or she is drunk does not mean they are mentally defective. Most alcoholics are average or above average mentally when they are sober; however, long periods of drinking may seriously reduce one's ability to utilize his mental faculties. Again the girls (71 per cent correct) were better informed than the boys (64 per cent correct), with the senior girls (89 per cent correct) being the best informed.

Alcoholics come from all walks of life. Those with high education, wealth, position, or family background all present the same problem in their ability to control their drinking once they have begun. They began drinking with average or above average mental capacity; however, excessive drinking over long periods of time may reduce their ability to make judgments (25, 27, 30).

Table 61. A fairly large percentage of alcoholics are mentally defective (low intelligence).

	<u>Boys</u>		<u>Girls</u>		<u>Total</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
<hr/>						
Freshmen						
(a) True	79	24	28	14	107	20
(b) <u>False</u>	190	58	135	67	325	62
(c) I don't know	58	18	37	19	95	18
<hr/>						
Sophomores						
(a) True	24	21	13	12	37	16
(b) <u>False</u>	75	65	75	66	150	66
(c) I don't know	16	14	25	22	41	18
<hr/>						
Juniors						
(a) True	31	20	20	14	51	17
(b) <u>False</u>	104	66	108	73	212	70
(c) I don't know	23	14	19	13	42	13
<hr/>						
Seniors						
(a) True	16	14	4	7	20	11
(b) <u>False</u>	93	79	51	89	144	83
(c) I don't know	8	7	2	4	10	6
<hr/>						
Total college						
(a) True	150	21	65	12	215	17
(b) <u>False</u>	462	64	369	71	831	67
(c) I don't know	105	15	83	17	188	14

Summary. Although the responses to the questions related to alcohol knowledge were low, they were higher than the knowledge questions on smoking and tobacco. Fifty per cent of the total students responded correctly on this section, with the boys better informed than the girls. There was a higher percentage of correct responses with each class beginning with the freshmen (45 per cent correct) and up to the seniors with 54 per cent correct. The boys were considerably higher than the girls on questions which pertain specifically to drinking, such as: type of alcohol in all beverages, oxidation rate, where oxidation begins, reaction of alcohol after it gets into the blood stream, and the influence of alcohol on body temperature. The girls seemed to be better informed on questions which pertained to alcoholism, such as: who can tell a beginning drinker whether or not he will become an alcoholic, classification of an alcoholic, and the percentage of those who may become alcoholics.

Student opinions and attitudes toward drinking

The following questions deal with student opinions and attitudes toward drinking and places where drinking should be allowed. Their attitudes and opinions are reflected by their answers.

Question 62. In your opinion, people who have drinking problems come from what walks of life or social groups in the community? (a) professional groups mainly, (b) labor classes mainly, (c) mostly lower levels of society, (d) mostly upper levels of society, (e) all walks of life and all social groups, (f) I don't know.

Eighty-four per cent of the students responded to "all walks of life and all social groups," which is correct. Men and women from outstanding families with good education and professional position

present the same problem, as the unskilled laborer, in controlling their drinking once it has begun (23). Seven per cent of the students thought problem drinkers come "mostly from lower levels of society," and this is a common conclusion drawn by many people because this is an area many people do not understand. More than 80 million Americans drink, but one in 13 of these develops the disease of alcoholism. Every business or social group has at least one alcoholic. Only a small percentage (3 to 5 per cent) are the visible skid row type. Over 90 per cent of this country's alcoholics are to be found in their homes and at their jobs trying to lead normal lives. The approach to skid row is a gradual process, and over a period of many years drinking they gravitate there (23, 27).

Question 63. Do you think students should be allowed to drink beer at school? (a) no, not at all, (b) yes, in designated areas, (c) no, not on school property, (d) it is the student's own business and he should do as he likes.

Forty per cent of the students answered, "no, not at all," while 24 per cent indicated, "no, not on school property." Twenty-four per cent thought students should be allowed to drink in designated areas, with 12 per cent indicating that it is the student's own business and he should do as he likes. The majority of the people tend to go along with school regulations; however, the attitudes and opinions of drinkers and non-drinkers are reflected by their answers. Seventy-five per cent of the students at Utah State University are members of the Church of Jesus Christ of Latter-Day Saints, which teaches total abstinence from alcoholic beverages. This may help to account for the high percentage answering "no" to this question.

Table 62. In your opinion, people who have drinking problems come from what walks of life or social groups in the community?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Professional groups mainly	15	4	4	2	19	3
(b) Labor classes mainly	11	3	3	1	14	2
(c) Mostly lower levels of society	25	7	13	6	38	7
(d) Mostly upper levels of society	6	2	3	1	9	2
(e) <u>All walks of life and all social groups</u>	272	80	171	85	443	81
(f) I don't know	13	4	8	5	21	5
Sophomores						
(a) Professional groups mainly	0	0	3	3	3	1
(b) Labor classes mainly	1	1	1	1	2	1
(c) Mostly lower levels of society	15	13	6	5	21	9
(d) Mostly upper levels of society	3	3	4	4	7	4
(e) <u>All walks of life and all social groups</u>	95	82	96	87	191	85
(f) I don't know	1	1	0	0	1	0
Juniors						
(a) Professional groups mainly	4	2	6	4	10	3
(b) Labor classes mainly	3	2	3	2	6	2
(c) Mostly lower levels of society	9	6	7	5	16	5
(d) Mostly upper levels of society	6	4	3	2	9	3
(e) <u>All walks of life and all social groups</u>	136	85	128	86	264	86
(f) I don't know	1	1	1	1	2	1
Seniors						
(a) Professional groups mainly	2	2	1	2	3	2
(b) Labor classes mainly	1	1	3	5	4	2
(c) Mostly lower levels of society	5	4	4	7	9	5
(d) Mostly upper levels of society	103	88	50	84	153	87

Table 62. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
(e) <u>All walks of life and all social groups</u>	103	88	50	84	153	87
(f) I don't know	2	2	0	0	2	1
Total college						
(a) Professional groups mainly	21	3	14	3	35	3
(b) Labor classes mainly	16	2	10	2	26	2
(c) Mostly lower levels of society	54	7	30	6	84	7
(d) Mostly upper levels of society	19	2	11	2	40	2
(e) <u>All walks of life and all social groups</u>	606	84	445	85	1051	84
(f) I don't know	17	2	9	2	26	2

Question 64. Do you think you will want your children to drink?

- (a) no, I will forbid it, (b) no, I will caution them against it,
 (c) I will let them choose for themselves, (d) yes, I think there
 is nothing wrong with it, (e) I am undecided.

Seventy-three per cent of the students indicated they would forbid their children to drink or would caution them against it, with 21 per cent indicating they would let their children choose for themselves. Only three per cent said, "yes, there is nothing wrong with it," with an additional three per cent being undecided. This reflects the opinions and attitudes of those who drink and those who do not drink. There are apparently many who drink that are dissatisfied with the results and do not want their children to be drinkers. It is important for people to understand that the best way to influence their children not to drink is to set an example. The majority of those who drink come from homes where drinking is acceptable and parents drink (22, 38).

Table 63. Do you think students should be allowed to drink beer at school?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) No, not at all	114	35	101	51	215	41
(b) Yes, in designated areas	98	30	26	13	124	24
(c) No, not on school property	68	21	54	27	122	23
(d) It is the student's own business and he should do as he likes	46	14	17	9	63	12
Sophomores						
(a) No, not at all	45	38	47	41	92	40
(b) Yes, in designated areas	34	29	27	24	61	26
(c) No, not on school property	24	21	25	22	49	21
(d) It is the student's own business and he should do as he likes	14	12	15	13	29	13
Juniors						
(a) No, not at all	61	39	58	40	118	39
(b) Yes, in designated areas	38	24	29	20	67	22
(c) No, not on school property	37	24	42	29	79	26
(d) It is the student's own business and he should do as he likes	20	13	17	11	37	13
Seniors						
(a) No, not at all	44	38	18	33	62	36
(b) Yes, in designated areas	29	25	14	25	43	25
(c) No, not on school property	25	21	18	33	43	25
(d) It is the student's own business and he should do as he likes	18	16	5	9	23	14
Total college						
(a) No, not at all	264	37	224	44	488	40
(b) Yes, in designated areas	199	28	96	19	295	24
(c) No, not on school property	154	21	139	27	293	24
(d) It is the student's own business and he should do as he likes	98	14	54	10	152	12

The boys tended to be much more lenient in drinking tolerance and would give their children more choice than would the girls. This is probably because the boys drink more than the girls, and the girls are more influenced by religion and their parents than are the boys.

Question 65. Do you think people should drink in public wherever and whenever they please? (a) yes, (b) no, (c) not sure.

Eighty-five per cent of the students do not think people should drink in public as they please; however, seven per cent felt just the opposite. The students tend to be more lenient towards smoking in public (74 per cent on question 27) than they are in drinking in public (85 per cent); and the girls were more emphatic about this, in both smoking and drinking, than were the boys. Extensive research and education are making it possible for people to see the effects of alcoholic beverages and are making it less socially acceptable in many areas of the United States.

Question 66. According to your opinion: (a) drinking costs more than the pleasure is worth, (b) there is nothing wrong with drinking, (c) drinking is a bad habit, (d) there is nothing wrong with drinking as long as a person drinks moderately.

"Drinking is a bad habit" was the most popular response (35 per cent), which reflects the influence of some religious training, being followed by 32 per cent of the students indicating that "drinking costs more than the pleasure is worth." The 27 per cent who said that "there is nothing wrong with drinking as long as a person drinks moderately," fail to realize that this is impossible for all people to do. At least people are educated well enough to realize the harmful effects which result from drinking, as evidenced by only six per cent

Table 64. Do you think you will want your children to drink?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) No, I will forbid it	98	30	59	29	157	30
(b) No, I will caution them against it	133	41	101	50	234	45
(c) I will let them choose for themselves	80	25	20	10	100	19
(d) Yes, I think there is nothing wrong with it	9	4	7	3	16	3
(e) I am undecided	2	1	15	8	17	3
Sophomores						
(a) No, I will forbid it	28	22	17	15	45	19
(b) No, I will caution them against it	59	46	71	65	130	55
(c) I will let them choose for themselves	34	27	17	15	51	22
(d) Yes, I think there is nothing wrong with it	5	4	4	4	9	3
(e) I am undecided	1	1	1	1	2	1
Juniors						
(a) No, I will forbid it	35	22	36	23	71	23
(b) No, I will caution them against it	73	48	85	55	158	51
(c) I will let them choose for themselves	41	26	24	15	65	21
(d) Yes, I think there is nothing wrong with it	2	1	4	3	6	2
(e) I am undecided	4	3	5	4	9	4
Seniors						
(a) No, I will forbid it	16	13	13	23	29	16
(b) No, I will caution them against it	58	49	29	53	87	50
(c) I will let them choose for themselves	40	33	11	20	51	29
(d) Yes, I think there is nothing wrong with it	6	5	0	0	6	4
(e) I am undecided	0	0	2	4	2	1

Table 64. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) No, I will forbid it	177	24	125	24	302	24
(b) No, I will caution them against it	323	45	286	55	609	49
(c) I will let them choose for themselves	195	27	72	14	267	21
(d) Yes, I think there is nothing wrong with it	223	15	15	3	37	3
(e) I am undecided	7	1	23	4	30	3

indicating that there is nothing wrong with drinking. It is interesting to note that the better educated students become (number of years of college), the more they drink and indicate that there is nothing wrong with drinking. Apparently health education as presently programmed is not stressing the harmful effects of alcohol or admitting it entirely.

Summary. The majority (67 per cent) of the students were of the opinion that drinking is a "bad habit" or it "costs more than the pleasure is worth." However, 27 per cent felt there is nothing wrong with drinking as long as a person drinks moderately. Forty per cent indicated that students should not be allowed to drink while attending college, with another 24 per cent saying, "No, not on school property." An additional 24 per cent thought it was fine to drink in designated areas. Eighty-five per cent of the students were of the opinion that drinking should be controlled in all public places.

It was understood by eighty-four per cent of the students that people who have drinking problems come from all walks of life and all social groups. Seven per cent of the students were of the

Table 65. Do you think people should drink in public wherever and whenever they please?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
<hr/>						
Freshmen						
(a) Yes	28	9	4	2	32	6
(b) No	267	83	187	94	454	87
(c) Not sure	27	8	9	4	36	7
<hr/>						
Sophomores						
(a) Yes	8	7	7	6	15	6
(b) No	99	83	98	87	197	85
(c) Not sure	12	10	8	7	20	9
<hr/>						
Juniors						
(a) Yes	10	6	5	3	15	5
(b) No	131	84	131	89	262	86
(c) Not sure	15	10	11	8	26	9
<hr/>						
Seniors						
(a) Yes	17	15	7	13	24	14
(b) No	92	79	43	78	135	79
(c) Not sure	7	6	5	9	12	7
<hr/>						
Total college						
(a) Yes	63	9	23	4	86	7
(b) No	589	83	459	89	1048	85
(c) Not sure	61	8	33	7	94	8

opinion that those with drinking problems were mostly from lower levels of society. Seventy-three per cent do not want their children to drink; however, three per cent felt there is nothing wrong with drinking, and 21 per cent indicated they would let their children choose for themselves.

Table 66. According to your opinion:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Drinking costs more than the pleasure is worth	105	32	68	32	173	32
(b) There is nothing wrong with drinking	21	6	5	2	26	5
(c) Drinking is a bad habit	104	31	110	54	214	40
(d) There is nothing wrong with drinking as long as a person drinks moderately	101	31	26	12	127	23
Sophomores						
(a) Drinking costs more than the pleasure is worth	31	27	36	32	67	29
(b) There is nothing wrong with drinking	10	9	6	5	16	7
(c) Drinking is a bad habit	38	33	45	39	83	36
(d) There is nothing wrong with drinking as long as a person drinks moderately	35	31	27	24	62	28
Juniors						
(a) Drinking costs more than the pleasure is worth	61	38	53	35	114	37
(b) There is nothing wrong with drinking	11	7	7	5	18	6
(c) Drinking is a bad habit	35	22	59	39	94	30
(d) There is nothing wrong with drinking as long as a person drinks moderately	52	33	31	21	83	27
Seniors						
(a) Drinking costs more than the pleasure is worth	32	28	19	35	51	30
(b) There is nothing wrong with drinking	11	9	3	5	14	8
(c) Drinking is a bad habit	28	24	20	36	48	28
(d) There is nothing wrong with drinking as long as a person drinks moderately	45	39	13	24	58	34

Table 66. Continued

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Total college						
(a) Drinking costs more than the pleasure is worth	229	32	176	33	405	32
(b) There is nothing wrong with drinking	53	7	21	4	74	6
(c) Drinking is a bad habit	205	28	234	44	439	35
(d) There is nothing wrong with drinking as long as a person drinks moderately	233	33	97	19	330	27

Drinking experiences

Student responses to the following questions determine the percentage of the students using alcohol, the extent of their drinking, and the reasons they continue to drink.

Question 67. How long have you drunk alcoholic beverages? (a) 6 months or less, (b) 1 year, (c) 2 years, (d) 3 years or more.

Sixty-five per cent of the boys and 42 per cent of the girls have been drinking for three years or more. This shows that the majority of students begin drinking before they enter college. Studies (25, 28, 38, 44) indicate that the average age at which young people begin to drink is about fourteen. The boys begin to drink earlier than the girls, as evidenced by the 43 per cent of the girls who have been drinking for only two years. There is a high percentage of freshmen (55 per cent) that has been drinking for three years or more; however, from the sophomores up there is an increase in drinking with each year until the senior boys (83 per cent) have been drinking for three years or more.

Table 67. How long have you drunk alcoholic beverages?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) 6 months or less	11	11	2	14	13	11
(b) 1 year	14	14	2	14	16	14
(c) 2 years	21	20	5	36	26	22
(d) 3 years or more	57	55	5	36	62	53
Sophomores						
(a) 6 months or less	2	6	1	4	3	5
(b) 1 year	4	12	1	4	5	9
(c) 2 years	11	32	17	74	28	49
(d) 3 years or more	17	50	4	18	21	37
Juniors						
(a) 6 months or less	0	0	1	3	1	1
(b) 1 year	4	8	3	10	7	9
(c) 2 years	10	20	10	34	20	26
(d) 3 years or more	35	72	15	53	50	64
Seniors						
(a) 6 months or less	0	0	1	10	1	2
(b) 1 year	0	0	1	10	8	14
(c) 2 years	7	17	1	10	8	14
(d) 3 years or more	42	83	7	70	49	82
Total college						
(a) 6 months or less	13	5	5	6	18	6
(b) 1 year	22	9	7	9	29	9
(c) 2 years	49	21	33	43	82	26
(d) 3 years or more	151	65	31	42	182	59

Question 68. I continue to drink because: (a) it soothes my nerves, (b) it is a habit, (c) it is accepted by my social group, (d) it takes my mind off my worries, (e) I do not know why I drink.

Thirty-seven per cent said they drank because it was accepted by their social group, and 29 per cent indicated they did not know

why they drank. Thirty per cent said it soothes their nerves and takes their mind off their worries. The girls (53 per cent) responded much higher to "it is accepted by my social group" than the boys (33 per cent). This may be because many who drink do so because they are not part of a crowd or feel left out and follow the group. The motives behind a person who drinks are usually complicated, and there are no simple answers. Education needs to help people understand themselves and face problems rather than trying to find an easy way out. This type of training needs to begin early in life.

Question 69. About how frequently do you drink alcoholic beverages on the average? (a) I do not drink, (b) several times a week, (c) once a week, (d) one to three times a month, (e) once every 2 to 5 months, (f) once or twice a year.

The majority (54 per cent) of the students indicated they did not drink, with only seven per cent drinking several times a week. A much higher percentage of girls (73 per cent) than boys (48 per cent) said they did not drink. The seniors (both boys and girls) are much heavier drinkers than the other classes, with ten per cent drinking several times a week. Straus (38) found a higher percentage of students drinking in the 27 colleges he surveyed with the average about 68 per cent. This means that Utah State University is lower than the majority of colleges in the United States; however, it is expected that it be lower since 75 per cent of the students are members of the Church of Jesus Christ of Latter-Day Saints which teaches total abstinence from alcohol. Although Utah State University is lower than the majority of American colleges, it still agrees with the studies that show there is an increase in drinking with each year of high school and college.

Table 68. I continue to drink because:

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) It soothes my nerves	11	12	2	28	13	13
(b) It is a habit	7	8	0	0	7	7
(c) It is accepted by my social group	30	33	3	44	33	34
(d) It takes my mind off my worries	25	27	0	0	25	26
(e) I do not know why I drink	18	20	2	28	20	20
Sophomores						
(a) It soothes my nerves	3	10	2	10	5	10
(b) It is a habit	1	3	0	0	1	2
(c) It is accepted by my social group	10	23	11	55	21	43
(d) It takes my mind off my worries	5	19	3	15	8	16
(e) I do not know why I drink	10	34	4	20	14	29
Juniors						
(a) It soothes my nerves	9	20	0	0	9	13
(b) It is a habit	0	0	0	0	0	0
(c) It is accepted by my social group	13	29	13	50	26	37
(d) It takes my mind off my worries	7	15	1	4	8	11
(e) I do not know why I drink	16	36	12	46	28	39
Seniors						
(a) It soothes my nerves	6	14	0	0	6	12
(b) It is a habit	1	2	1	12	2	4
(c) It is accepted by my social group	15	36	5	64	20	40
(d) It takes my mind off my worries	6	14	1	12	7	14
(e) I do not know why I drink	14	34	1	12	15	30
Total college						
(a) It soothes my nerves	29	14	4	6	33	12
(b) It is a habit	9	4	1	1	10	4
(c) It is accepted by my social group	68	33	32	53	100	37
(d) It takes my mind off my worries	43	21	5	8	48	18
(e) I do not know why I drink	58	28	19	32	77	29

In 1966, Nelson (28) found that ten per cent of the high school students in Utah drank once a week or more often. The present study found that 13 per cent of the freshmen at Utah State University drank once a week or more often, and this was followed by 14 per cent of the sophomores, 15 per cent of the juniors, and 21 per cent of the seniors.

Summary. Seventeen per cent of the students drink regularly (at least once a week), with 29 per cent drinking occasionally. Of those who drink, 85 per cent have been drinking for two or more years, with nine per cent drinking for one year, and six per cent indicating they have been drinking for six months or less.

The most popular reason students gave for continuing to drink is that it is accepted by their social group (37 per cent), with 18 per cent drinking because "it takes my mind off my worries." Twenty-nine per cent indicated they did not know why they drank; however 12 per cent of the students indicated, "it soothes my nerves," and four per cent indicated they drank because, "it is a habit."

The influence of certain factors on drinking status

There are many determining factors in a person's decision to drink or not to drink. Among these factors are: parents' drinking, religious training, health implications, expense, parents' objections, freedom from parental control, advertising, influence from parents' drinking, and influence from their social group. The following questions show how much each of the above factors have on the students' drinking decisions.

Table 69. About how frequently do you drink alcoholic beverages on the average?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) I do not drink	150	46	165	81	315	60
(b) Several times a week	23	7	5	2	28	5
(c) Once a week	38	12	4	2	42	8
(d) One to three times a month	60	18	13	6	73	14
(e) Once every 2 to 5 months	28	9	4	2	32	6
(f) Once or twice a year	26	8	12	7	38	7
Sophomores						
(a) I do not drink	51	53	73	70	124	62
(b) Several times a week	3	3	2	2	5	2
(c) Once a week	15	16	8	8	23	12
(d) One to three times a month	15	16	11	10	26	13
(e) Once every 2 to 5 months	6	6	3	3	9	4
(f) Once or twice a year	6	6	7	7	13	7
Juniors						
(a) I do not drink	73	52	81	68	154	59
(b) Several times a week	9	6	10	8	19	7
(c) Once a week	12	8	8	7	20	8
(d) One to three times a month	22	16	6	5	28	11
(e) Once every 2 to 5 months	12	8	8	7	20	8
(f) Once or twice a year	13	10	6	5	19	7
Seniors						
(a) I do not drink	50	43	35	64	85	50
(b) Several times a week	13	11	5	9	18	10
(c) Once a week	17	15	2	4	19	11
(d) One to three times a month	23	20	3	5	26	15
(e) Once every 2 to 5 months	3	3	5	9	8	5
(f) Once or twice a year	9	8	5	9	14	9
Total college						
(a) I do not drink	324	48	354	73	578	54
(b) Several times a week	48	7	22	4	70	7
(c) Once a week	82	12	22	4	104	10
(d) One to three times a month	120	18	35	7	155	15
(e) Once every 2 to 5 months	49	7	20	4	69	6
(f) Once or twice a year	54	8	30	8	84	8

Question 70. Do your parents drink? (a) both my parents drink, (b) my father drinks, (c) my mother drinks, (d) neither of my parents drink.

The majority (68 per cent) of the parents do not use alcoholic beverages. This high percentage may be due to the large number that are members of the Church of Jesus Christ of Latter-Day Saints. Nineteen per cent of the students indicated that both of their parents drank, and 11 per cent said only their father used alcoholic beverages. Only two per cent indicated that their mothers used alcoholic beverages, and this may be a factor in why only 17 per cent of the students use alcohol more than two or three times a month. Parents' use of alcohol is a big influence on their children; however, the mother's example seems to have the most influence. More of the boys (seven per cent) indicated their fathers drank than did the girls, and more of the boys drink, which shows a relationship between the parents drinking and their children drinking.

Question 71. How important is religious training in why you are a non-drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Only 14 per cent of the students felt that religious training was not a factor in why they did not drink. It had a much greater influence on the girls (73 per cent) than the boys (56 per cent). The girls in several of the previous questions (questions 62, 63, 64, 65, and 66) had indicated less tolerance than the boys in the use of alcohol and did not hesitate to take a stand against it. Those coming from the Church of Jesus Christ of Latter-Day Saints have been taught by their parents and religious teachers that alcohol is harmful to their health.

Table 70. Do your parents drink?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Both of my parents drink	46	14	33	16	79	15
(b) My father drinks	40	12	18	9	58	11
(c) My mother drinks	7	2	3	1	10	2
(d) Neither of my parents drink	228	72	150	74	378	72
Sophomores						
(a) Both of my parents drink	22	19	26	24	48	21
(b) My father drinks	18	16	5	5	23	10
(c) My mother drinks	2	2	0	0	2	1
(d) Neither of my parents drink	73	63	78	71	151	68
Juniors						
(a) Both of my parents drink	33	21	27	18	60	20
(b) My father drinks	29	18	12	8	41	14
(c) My mother drinks	3	2	1	1	4	1
(d) Neither of my parents drink	91	59	106	73	197	65
Seniors						
(a) Both of my parents drink	34	29	7	12	41	23
(b) My father drinks	12	10	3	5	15	8
(c) My mother drinks	3	2	3	5	6	3
(d) Neither of my parents drink	69	59	44	78	113	66
Total college						
(a) Both of my parents drink	135	19	93	18	228	19
(b) My father drinks	99	14	38	7	137	11
(c) My mother drinks	15	2	7	1	22	2
(d) Neither of my parents drink	461	65	378	74	839	68

The Church teaches total abstinence from alcohol because it is a commandment of the Lord. Many of those who use alcohol at Utah State University may not be members of the Church of Jesus Christ of Latter-day Saints or come from religious denominations that do not stress the harmful effects of alcohol on the body.

Table 71. How important is religious training in why you are a non-drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	130	61	131	75	271	67
(b) Some influence	50	23	30	16	80	20
(c) Little influence	21	10	7	4	28	7
(d) No influence	13	6	10	5	23	6
Sophomores						
(a) Great influence	46	53	64	68	110	61
(b) Some influence	22	25	19	20	41	23
(c) Little influence	7	8	2	2	9	5
(d) No influence	11	14	9	10	20	11
Juniors						
(a) Great influence	56	52	84	71	140	62
(b) Some influence	32	30	20	17	52	23
(c) Little influence	8	7	7	6	15	7
(d) No influence	12	11	7	94	19	8
Seniors						
(a) Great influence	36	54	39	81	75	65
(b) Some influence	24	36	8	17	32	28
(c) Little influence	4	6	1	2	5	4
(d) No influence	3	4	0	0	3	3
Total college						
(a) Great influence	268	56	328	73	596	65
(b) Some influence	128	27	77	17	205	22
(c) Little influence	40	8	17	4	57	6
(d) No influence	39	9	26	6	65	8

Question 72. How important are health implications in why you are a non-drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Health implications seem to be of major importance in why students are non-drinkers as evidenced by 83 per cent of the students. The

freshmen (86 per cent) were the most concerned about their health, and there is a decline in the next three years of college. There was no noticeable difference between the sexes. By the time students are seniors in college they have usually established patterns and ideas which guide their actions and thinking. The small decline in those responding to health as reasons for not drinking may be the result of the students' experience. Drinking increases with each year of college, and this shows that many rationalize and think drinking will not harm them physically if they drink in moderation.

Question 73. How important is expense in why you are a non-drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

All answers received approximately the same per cent of responses from the boys and girls of the same class. The senior girls (12 per cent) are the least concerned about expense as a "great influence," however, 42 per cent indicated it had "some influence." The reason that students are not more concerned about expense is possibly that their parents are still paying their way through college. Although expense is of medium importance for not drinking, many of the students have other more important reasons such as religious training and health reasons, as evidenced by the previous two questions.

Question 74. How important are your parents' objections in why you are a non-drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Eighty per cent of the students indicated that their parents' objections to their drinking has influenced them. This agrees with other studies (5, 25, 28, 38) which show the great influence of

Table 72. How important are health implications in why you are a non-drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	131	58	125	63	256	61
(b) Some influence	64	28	40	20	104	25
(c) Little influence	22	10	18	9	40	9
(d) No influence	8	4	14	8	22	5
Sophomores						
(a) Great influence	48	57	49	53	97	55
(b) Some influence	20	24	29	31	49	28
(c) Little influence	9	11	8	8	17	10
(d) No influence	7	8	6	8	13	7
Juniors						
(a) Great influence	56	52	68	58	124	55
(b) Some influence	33	31	30	25	63	28
(c) Little influence	9	8	13	11	22	10
(d) No influence	10	9	6	6	16	7
Seniors						
(a) Great influence	34	55	22	45	56	50
(b) Some influence	17	27	15	31	32	29
(c) Little influence	8	13	9	18	17	15
(d) No influence	3	5	3	6	6	6
Total college						
(a) Great influence	269	56	264	58	533	57
(b) Some influence	134	28	114	25	248	26
(c) Little influence	48	10	48	10	96	10
(d) No influence	28	6	29	7	57	7

parents on their children. The majority of students who drink come from homes where parents drink and drinking is tolerated. Parents' example seems to be the most important factor in determining student behavior. The girls (54 per cent) are influenced more by their

Table 73. How important is expense in why you are a non-drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	66	29	51	27	117	28
(b) Some influence	74	32	46	24	110	26
(c) Little influence	64	28	36	19	100	24
(d) No influence	26	11	56	30	82	22
Sophomores						
(a) Great influence	24	28	18	19	42	23
(b) Some influence	23	27	25	26	48	27
(c) Little influence	19	22	23	24	42	23
(d) No influence	19	23	29	31	48	27
Juniors						
(a) Great influence	18	16	26	22	44	19
(b) Some influence	44	40	20	17	64	28
(c) Little influence	22	20	35	30	57	25
(d) No influence	26	24	36	31	62	28
Seniors						
(a) Great influence	15	25	6	12	21	19
(b) Some influence	19	31	21	42	40	36
(c) Little influence	13	21	7	14	20	18
(d) No influence	14	23	16	32	30	27
Total college						
(a) Great influence	123	25	101	22	224	24
(b) Some influence	160	33	112	25	272	29
(c) Little influence	118	24	101	22	219	23
(d) No influence	85	18	137	31	225	24

parents than are the boys (36 per cent); however, the boys responded higher to "some influence" than did the girls. The key seems to be in educating parents so they can train their children.

Table 74. How important are your parents' objections in why you are a non-drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	95	43	97	52	192	47
(b) Some influence	87	40	58	31	145	36
(c) Little influence	21	10	11	6	32	8
(d) No influence	16	7	21	11	37	9
Sophomores						
(a) Great influence	22	27	45	51	67	40
(b) Some influence	35	43	29	33	64	38
(c) Little influence	8	10	3	3	11	6
(d) No influence	16	20	11	13	27	16
Juniors						
(a) Great influence	36	34	73	63	109	49
(b) Some influence	48	45	21	18	69	31
(c) Little influence	14	13	12	10	26	12
(d) No influence	9	8	10	9	19	8
Seniors						
(a) Great influence	17	26	24	50	41	36
(b) Some influence	27	42	17	37	44	39
(c) Little influence	8	12	1	2	9	8
(d) No influence	12	8	6	11	18	17
Total college						
(a) Great influence	170	36	239	54	409	45
(b) Some influence	197	42	125	28	322	35
(c) Little influence	51	11	27	6	78	8
(d) No influence	53	11	48	12	101	12

Question 75. How important is freedom from parental control in why you are a drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Only nine per cent of the students feel that freedom from parental control has a great influence in their drinking; however, another 17 per

cent indicated it had "some influence." Twenty per cent of the freshman boys and 22 per cent of the senior girls indicated freedom from parental control was a great influence in their drinking; however none of the junior boys felt this way. More of the boys (27 per cent) are drinking to show freedom from parental control than are the girls (25 per cent), which indicates that girls are influenced by their parents more than the boys. Seventy-four per cent of the students indicated that freedom from parental control had little or no influence in why they were drinking. The motives behind a person who drinks are usually complicated and many of those who drink never stop to analyze just why they are drinking. If they would analyze their situation they may find that freedom from parental control has more influence in their drinking than they are now willing to admit.

Question 76. How important is advertising of some type (TV, radio, etc.) in why you are a drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Eighty-six per cent of the students indicated that advertising had "little" or "no influence" on their drinking. None of the girls thought advertising was a "great influence" in why they were drinking; however, ten per cent indicated it had "some influence." The girls (76 per cent) were higher than the boys (66 per cent) in indicating advertising had "no influence" in their drinking. Advertising seems to have more influence on people than they are aware. The increase in sales from advertising has shown that advertising affects a great many people.

Table 75. How important is freedom from parental control in why you are a drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	20	20	1	7	21	18
(b) Some influence	20	20	2	13	22	19
(c) Little influence	24	24	6	40	30	26
(d) No influence	36	36	6	40	42	37
Sophomores						
(a) Great influence	2	5	1	4	3	5
(b) Some influence	6	15	5	21	11	17
(c) Little influence	9	23	8	33	17	27
(d) No influence	22	57	10	42	32	51
Juniors						
(a) Great influence	0	0	1	3	1	1
(b) Some influence	10	18	8	27	18	21
(c) Little influence	14	25	5	17	19	22
(d) No influence	32	57	16	53	48	56
Seniors						
(a) Great influence	3	6	2	22	5	8
(b) Some influence	5	9	0	0	5	8
(c) Little influence	10	19	5	56	15	24
(d) No influence	35	66	2	22	37	60
Total college						
(a) Great influence	25	10	5	6	30	9
(b) Some influence	41	17	15	19	56	17
(c) Little influence	57	23	24	31	81	25
(d) No influence	125	50	34	44	159	49

Question 77. How much influence has your parents' drinking had on why you are a drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Thirty-two per cent of the students indicated their parents used alcoholic beverages (question 47); however, only 24 per cent indicated

Table 76. How important is advertising of some type (TV, radio, etc.) in why you are a drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	6	6	0	0	6	5
(b) Some influence	14	13	1	8	15	13
(c) Little influence	18	7	2	15	20	17
(d) No influence	65	74	10	77	75	65
Sophomores						
(a) Great influence	2	5	0	0	2	3
(b) Some influence	3	8	4	17	7	11
(c) Little influence	11	28	2	8	13	21
(d) No influence	23	59	18	75	41	65
Juniors						
(a) Great influence	1	2	0	0	1	1
(b) Some influence	7	12	1	3	8	8
(c) Little influence	10	17	6	17	16	17
(d) No influence	42	69	27	80	69	74
Seniors						
(a) Great influence	0	0	0	0	0	0
(b) Some influence	4	8	2	22	6	10
(c) Little influence	10	20	1	11	11	18
(d) No influence	37	72	6	67	43	72
Total college						
(a) Great influence	9	4	0	0	9	3
(b) Some influence	28	11	8	10	36	11
(c) Little influence	49	19	11	14	60	18
(d) No influence	167	66	61	76	228	68

that their parents' drinking has influenced their drinking. Parental drinking had a greater influence on the sophomore (41 per cent) and senior (20 per cent) girls than on the sophomore (28 per cent) and senior (ten per cent) boys. Students fail to realize how much parents

influence them without being aware of it. Anything their parents do is usually justified they feel and do not realize how much it had influenced their thinking.

Table 77. How much influence has your parents' drinking had on why you are a drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	12	12	0	0	12	11
(b) Some influence	16	16	4	28	20	17
(c) Little influence	19	19	4	28	23	30
(d) No influence	53	53	6	44	59	52
Sophomores						
(a) Great influence	2	6	2	9	4	7
(b) Some influence	8	22	7	32	15	26
(c) Little influence	8	22	6	27	14	24
(d) No influence	18	50	7	32	25	43
Juniors						
(a) Great influence	2	2	2	7	4	5
(b) Some influence	11	21	3	10	14	17
(c) Little influence	15	30	6	20	21	25
(d) No influence	25	47	19	63	44	53
Seniors						
(a) Great influence	0	0	0	0	0	0
(b) Some influence	5	10	2	20	7	12
(c) Little influence	16	32	2	20	18	30
(d) No influence	29	58	6	60	35	58
Total college						
(a) Great influence	16	7	4	5	20	6
(b) Some influence	41	17	16	21	57	18
(c) Little influence	58	24	18	24	76	24
(d) No influence	125	52	38	50	163	52

Question 78. How much influence has your social group had on why you are a drinker? (a) great influence, (b) some influence, (c) little influence, (d) no influence.

Sixty-three per cent admitted that their social group had an influence on why they were drinkers. The freshmen (71 per cent) and the juniors (67 per cent) indicated that their social group had more influence on them than did the sophomores (56 per cent) and seniors (50 per cent). Previous studies (30, 44) indicate that those who drink have friends who drink, and those who abstain have friends who abstain. Peer groups have more influence on people than they are willing to admit.

Summary. There were a number of factors influencing the non-drinkers in their decision not to drink. Religious training had the greatest influence (65 per cent), and this was followed by health implications (57 per cent). Forty-five per cent of the students felt that parental objections had a "great influence" in why they were non-drinkers, with another 35 per cent indicating it had some influence. Only 24 per cent of the students felt that expense was a "great influence" in their being non-drinkers.

Thirty-two per cent of the students indicated that one or both of their parents drank, and 24 per cent of those students who drank indicated that their parents' drinking had influenced their drinking. Of all the factors studied (freedom from parental control, TV and radio advertising, parents' drinking, and the influence of their social group), the influence of their social group seemed to be the factor having the greatest influence on why they were drinking.

Table 78. How much influence has your social group had on why you are a drinker?

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Great influence	31	31	3	23	34	30
(b) Some influence	42	40	5	38	47	41
(c) Little influence	12	12	3	23	15	13
(d) No influence	17	17	2	16	19	16
Sophomores						
(a) Great influence	6	20	8	35	14	26
(b) Some influence	9	30	7	31	16	30
(c) Little influence	8	27	4	17	12	23
(d) No influence	7	23	4	17	11	21
Juniors						
(a) Great influence	11	22	7	23	18	22
(b) Some influence	25	48	12	40	37	45
(c) Little influence	10	20	5	17	15	18
(d) No influence	5	10	6	20	11	15
Seniors						
(a) Great influence	11	22	1	12	12	20
(b) Some influence	15	30	3	33	18	30
(c) Little influence	10	20	3	33	13	22
(d) No influence	14	28	2	22	16	28
Total college						
(a) Great influence	59	25	19	25	78	25
(b) Some influence	91	39	27	36	118	38
(c) Little influence	40	17	15	20	55	18
(d) No influence	43	19	14	19	57	19

Source and credibility of alcohol information

The following two questions pertain to the source of information that students have about alcohol and alcoholism and the credibility of the information.

Question 79. Where did you get most of your information about alcohol and alcoholism? (a) parents or members of my family, (b) friends, (c) Health classes, (d) from drinking experiences, (e) physicians, (f) church leaders, (g) newspapers, (h) magazines, (i) seminary or religion teachers, (j) other.

The students indicated that "health classes" are by far the best source of information about alcohol and alcoholism. This is followed in order by: parents or members of my family, friends, seminary or religious teachers, church leaders, and from drinking experiences. When seminary or religious teachers and church leaders are combined as one source of information they are ranked third. Nelson (28) found that the high school students in Utah ranked health classes as first, parents or members of my family as second, and seminary or religious teachers as third. Friends as a source of information was ranked as sixth by the high school students; however, the college students ranked friends as third, with seminary or religious teachers as fourth. This indicates that health teachers, parents, and religious teachers need to be well informed so they can get reliable information to the students. Since many of the students get information from their friends, it is important that students are taught alcohol education at an early age (late elementary school) so they can pass proper information on to their friends.

Question 80. How reliable do you consider the two best sources of your information about alcohol and alcoholism? (check only one) (a) extremely reliable, (b) good reliability, (c) average reliability, (d) fair reliability, (e) poor reliability.

Table 79. Where did you get most of your information about alcohol and alcoholism? If more than one answer, rank 1, 2, 3, in the best order.

Parents or members of my family			
Girls	1--116	2--33	3--37
Boys	1--158	2--46	3--29
Friends			
Girls	1-- 76	2--24	3--20
Boys	1-- 94	2--38	3--17
Health classes			
Girls	1--221	2--43	3--24
Boys	1--268	2--55	3--40
From drinking experience			
Girls	1-- 21	2--16	3-- 9
Boys	1-- 86	2--32	2--23
Physicians			
Girls	1-- 13	2-- 3	3-- 8
Boys	1-- 30	2--11	3--10
Church leaders			
Girls	1-- 44	2--58	3--29
Boys	1-- 66	2--50	3--34
Newspaper			
Girls	1-- 29	2--26	3--32
Boys	1-- 58	2--27	3--26
Magazines			
Girls	1-- 38	2--36	3--36
Boys	1-- 58	2--35	3--41
Seminary or religion teachers			
Girls	1-- 53	2--57	3--43
Boys	1-- 71	2--34	3--34
Other			
Girls	1-- 24	2-- 0	3-- 7
Boys	1-- 57	2--10	3--11

Thirty-nine per cent of the students think their source of information about alcohol and alcoholism is extremely reliable, with the girls (42 per cent) responding higher than the boys (36 per cent). It is interesting

to note that 93 per cent of the students think their source of information is well above average reliability. This seems to indicate that students have confidence in their health and religious teachers; however, on the knowledge questions concerning alcohol and alcoholism their responses indicated they were not too well informed. This means that teachers need more and better information on alcohol and alcoholism so they can give better instruction to their students. Formal training in the area of alcohol studies is readily obtainable with scholarships available in Utah.

Summary. Health classes were the students' best source of information about alcohol and alcoholism, and this was followed in order by: parents or members of my family, a religious training source of information, friends, and from drinking experience. Ninety-three per cent of the students indicated that they felt their two best sources of information to be average or above in reliability, and 39 per cent of these students considered their sources to be extremely reliable.

Table 80. How reliable do you consider the two best sources of your information about alcohol and alcoholism? (Check only one)

	Boys		Girls		Total	
	No.	%	No.	%	No.	%
Freshmen						
(a) Extremely reliable	119	36	94	48	213	41
(b) Good reliability	127	39	69	35	196	38
(c) Average reliability	54	16	27	14	81	15
(d) Fair reliability	17	5	3	2	20	4
(e) Poor reliability	10	4	2	1	12	2
Sophomores						
(a) Extremely reliable	48	44	48	44	96	44
(b) Good reliability	38	35	43	39	81	37
(c) Average reliability	18	17	13	12	31	14
(d) Fair reliability	2	2	4	4	6	3
(e) Poor reliability	2	2	1	1	3	2
Juniors						
(a) Extremely reliable	47	34	51	37	98	35
(b) Good reliability	46	33	52	37	98	35
(c) Average reliability	31	22	24	17	55	20
(d) Fair reliability	7	5	10	7	17	6
(e) Poor reliability	8	6	2	2	10	4
Seniors						
(a) Extremely reliable	36	31	18	34	54	32
(b) Good reliability	47	41	12	23	59	36
(c) Average reliability	22	19	17	32	39	23
(d) Fair reliability	8	8	5	9	13	8
(e) Poor reliability	1	1	1	2	2	1
Total college						
(a) Extremely reliable	250	36	211	42	461	39
(b) Good reliability	258	37	176	35	434	37
(c) Average reliability	125	18	81	16	206	17
(d) Fair reliability	34	5	22	4	56	5
(e) Poor reliability	21	4	6	3	27	2

SUMMARY AND CONCLUSIONS

Summary

Since 1950, scientists have become increasingly interested in the effects of alcohol and tobacco on health and have taken a broad experimental and clinical approach in studying their effects on the body. A large amount of research has been published in this area, and many health agencies and school systems are trying to inform the students of the harmful effects of smoking and drinking so they can be better prepared to make proper decisions early in life.

This summary will be divided into the areas covered by the questionnaire: specific knowledge as it relates to smoking and health and alcohol and health, student opinions and attitudes toward smoking and drinking, smoking and drinking experiences, the influence of certain factors on smoking and drinking status, and the source and credibility of tobacco and alcohol information.

Specific knowledge as it relates to smoking and health

The responses to the questions related to knowledge were considerably lower than they should have been with only 40 per cent correct answers. The total boys (42 per cent correct) were better informed than the girls (38 per cent correct); however, the senior girls (48 per cent correct) were better informed than the senior boys (46 per cent correct). There was an increase in the per cent of correct responses with each college year for both the boys and the girls. The girls were a little better informed than the boys on eight of the questions with an average

difference of three per cent. The boys were considerably higher than the girls on questions dealing specifically with cigarettes, such as taste, nicotine content, reaction of the body to nicotine, and amount of cigarettes smoked to affect life expectancy. Although most students understood that cigarettes are harmful to health, they did not realize how they are harmful or to what extent they are harmful.

Student opinions and attitudes toward smoking

The majority (88 per cent) of the students were of the opinion that smoking is a "dirty habit" or it "costs more than the pleasure is worth." This left 12 per cent who felt smoking was okay. Fifty-three per cent of the students agree with the college administration that smoking should be allowed in designated areas; however, 20 per cent thought it should not be allowed at all. Seventy-four per cent thought smoking should be controlled in all public places. Eighty-four per cent do not want their children to be smokers, with less than one per cent saying there is nothing wrong with smoking.

Smoking experiences

Thirteen per cent of the students are regular smokers (smoke at least once a week) with 37 per cent having tried smoking but not smoking regularly at present. Of those who do smoke, 42 per cent have smoked for three years or more, 23 per cent have been smoking for two years, and 22 per cent have been smoking for one year.

The reasons students gave for continuing smoking are: it soothes my nerves (25 per cent), it is a habit (24 per cent), and it gives me something to do with my hands (25 per cent). Only 14 per cent continue

to smoke because it was accepted by their social group, and 12 per cent continue because it gives them a lift.

Seventy-one per cent of the students indicated that neither of their parents used tobacco, seven per cent indicated that both their parents smoke, 18 per cent said their father smoked, and four per cent said their mother smoked.

The influence of certain factors on smoking status

There were a number of factors influencing the non-smokers in their decisions not to smoke. Health implications had the greatest influence (61 per cent), and this was followed by religious training (50 per cent). Forty per cent of the students felt that parental objections had a "great influence" in why they were non-smokers, with another 34 per cent indicating it had some influence. Only 22 per cent of the students felt that expense was a "great influence" in their being non-smokers.

Of all the factors studied (freedom from parental control, TV and radio advertising, parents' smoking, and the influence of their social group), only the influence of their social group was rated as having a "great influence" in why they were smoking. This was rated by 28 per cent of the students with the others all being below six per cent.

Source and credibility of tobacco information

Health classes were the students' best source of information about smoking and tobacco, and this was followed in order by: a religious source of information, parents or members of my family, magazines, newspapers, friends, and from smoking experience. Ninety-two per cent of the students indicated that they felt their two best sources of information to be average or above in reliability.

Specific knowledge as it relates to alcohol and health

Although the responses to the questions related to alcohol knowledge were considerably low, they were higher than the knowledge questions on smoking and tobacco. Fifty per cent of the total students responded correctly on this section, with the boys better informed than the girls. There was a higher percentage of correct responses with each class beginning with the freshmen (45 per cent correct) and up to the seniors with 54 per cent correct. The boys were considerably higher than the girls on questions which pertain specifically to drinking, such as: type of alcohol in all beverages, oxidation rate, where oxidation begins, reaction to alcohol after it gets into the blood stream, and the influence of alcohol on body temperature. The girls seemed to be better informed on questions which pertain to alcoholism, such as: who can tell a beginning drinker whether or not he will become an alcoholic, classification of an alcoholic, and the percentage of those who may become alcoholics.

The students understood to some degree that alcohol has an adverse effect on the body, but they do not understand how alcohol affects the body or to what extent it may be harmful to the body.

Student opinions and attitudes toward drinking

The majority (67 per cent) of the students were of the opinion that drinking is a "bad habit" or it "costs more than the pleasure is worth." However, 27 per cent feel there is nothing wrong with drinking as long as a person drinks moderately. Forty per cent indicated that students should not be allowed to drink while attending college, with another 24 per cent saying "no, not on school property." An additional 24 per cent

think it is fine in designated areas. Eighty-five per cent of the students are of the opinion that drinking should be controlled in all public places.

It was understood by eighty-four per cent of the students that people who have drinking problems come from all walks of life and all social groups. Seven per cent of the students were of the opinion that those with drinking problems came mostly from lower levels of society. Seventy-three per cent of the students do not want their children to drink; however, three per cent feel there is nothing wrong with drinking and 21 per cent indicated they would let their children choose for themselves.

Drinking experiences

Seventeen per cent of the students drink regularly (at least once a week) with 29 per cent drinking occasionally. Of those who do drink, 85 per cent have been drinking for two or more years, with nine per cent drinking for one year and six per cent indicating they have been drinking for six months or less.

The most popular reason students gave for continuing to drink is that "it is accepted by my social group" (37 per cent), with 18 per cent drinking because "it takes my mind off my worries." Twenty-nine per cent indicated that they did not know why they drank; however, 12 per cent of the students indicated "it soothes my nerves," and four per cent indicated they drank because "it is a habit."

The influence of certain factors on drinking status

There were a number of factors influencing the non-drinkers in their decision not to drink. Religious training had the greatest

influence (65 per cent), and this was followed by health implications (57 per cent). Forty-five per cent of the students felt that parental objections had a "great influence" in why they were non-drinkers, with another 35 per cent indicating it had some influence. Only 24 per cent of the students felt that expense was a "great influence" in their being non-drinkers.

Thirty-two per cent of the students indicated that one or both of their parents drank, and 24 per cent of those students who drank indicated that their parents' drinking had influenced their drinking. Of all the factors studied (freedom from parental control, TV and radio advertising, parents' drinking, and the influence of their social group), the influence of their social group seemed to be the factor having the greatest influence on why they were drinking.

Source and credibility of alcohol information

Health classes were the students' best source of information about alcohol and alcoholism, and this was followed in order by: parents or members of my family, a religious training source of information, friends, and from drinking experiences. Ninety-three per cent of the students indicated that they felt their two best sources of information to be average or above in reliability, and 39 per cent of these students considered their sources to be extremely reliable.

Conclusions

Students at Utah State University were not very well informed concerning the harmful effects of alcohol and tobacco on the human body.

They were better informed about alcohol and alcoholism than they were about smoking and tobacco.

Students were of the opinion that smoking and drinking should be better controlled in public places.

The number of students who smoke and drink at Utah State University was less than in most other universities in the United States.

The men knew more about tobacco and alcohol and the effects of smoking and drinking than their female counterparts.

Since health classes and religious training sources of information were the students' best sources of information on tobacco and alcohol, teachers in these areas need to be better informed so they can better inform the students.

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APPENDIX

PART I

1. Sex: (a) Male; (b) Female.
2. Class: (a) Fresh; (b) Soph; (c) Jr.; (d) Sr.; (e) Grad.

PART II Mark the correct answer on the corresponding number on the answer sheet.

3. Excess deaths from cigarette smoking is a result of: (a) the number of cigarettes smoked daily; (b) the degree of inhalation, (c) smoking the cigarette very short; (d) all of the above; (e) I don't know.
4. Which of the following is an effect of smoking: (a) dilation of blood vessels, (b) decrease in blood pressure; (c) rise in skin temperature; (d) loss of oxygen-carrying capacity in the blood; (e) I don't know.
5. Smoking affects the lungs in which of the following ways: (a) increases the action of the cilia; (b) decreases the mucous secretion in the bronchials; (c) ruptures the air sacs; (d) increases the oxygen exchange with the blood; (e) I don't know.
6. Emphysema is: (a) constriction of the blood vessels; (b) too many white blood cells in the body; (c) over-inflation of the air sacs causing their destruction; (d) acute cirrhosis of the liver; (e) I don't know.
7. The average medium-to-heavy smoker (1-2 packs a day) forfeits how many years of his life: (a) the life span is not affected by smoking; (b) 5 years; (c) 10 years; (d) 15-20 years; (e) I don't know.
8. The nicotine content in the different types of tobacco: (a) is the same; (b) varies a great deal; (c) varies very little; (d) does not vary; (e) I don't know.
9. The main purpose for tobacco manufacturers putting menthol in cigarettes is to: (a) reduce the amount of heat in the mouth and lungs; (b) reduce the harmful material in the smoke; (c) change the taste of the smoke; (d) reduce irritation to the bronchial tubes; (e) I don't know.
10. The number of cigarettes needed to be smoked daily on a regular basis to affect the death rate of smokers is: (a) 1-3; (b) 5-7; (c) 10-12; (d) smoking does not affect the death rate; (e) I don't know.
11. The statistical evidence which links cigarette smoking to lung cancer is: (a) strongly suggestive as a cause of cancer; (b) insufficient to warrant serious concern on the part of smokers; (c) based on unreliable data; (d) inconclusive and unconvincing; (e) I don't know.

12. The smoking of one cigarette can raise the pulse rate: (a) 5-10 beats p/minute; (b) 15-30 beats p/minute; (c) 40-50 beats p/minute; (d) does not raise the pulse; (e) I don't know.
13. The smoking of one cigarette affects the heart rate for a normal period of: (a) up to 5 minutes; (b) up to 10 minutes; (c) up to 20 minutes; (d) does not affect the heart rate; (e) I don't know.
14. A good medical danger sign for lung cancer is: (a) low blood pressure; (b) phlegm with traces of blood; (c) occasional pains in the chest; (d) dimmed vision; (e) I don't know.
15. The substance in tobacco which appears to cause lung cancer is: (a) there is no substance in tobacco which will cause lung cancer; (b) nicotine; (c) some unknown factors in tobacco; (d) tobacco tars; (e) I don't know.
16. The work load (amount of work) of the heart of a habitual smoker is: (a) about the same as a non-smoker; (b) slightly higher than a non-smoker; (c) substantially higher than a non-smoker; (d) lower in the smoker than the non-smoker; (e) I don't know.
17. The so-called smoker's cough: (a) is a misnomer (not correctly named); (b) is found in both smokers and non-smokers; (c) is thought to be a nervous reaction to smoking; (d) is caused by the irritation of the mucous membrane of the nose and throat; (e) I don't know.
18. What per cent of the tar and other substances contained in cigarette smoke is retained in the lungs when the smoker inhales: (a) none; (b) 40 per cent, (c) 90 per cent; (d) 100 per cent; (e) I don't know.
19. Utah's rank with other states in packs of cigarettes smoked for every man, woman, and child is: (a) high; (b) above average; (c) average; (d) below average; (e) low.

PART III

20. According to your opinion: (a) smoking costs more than the pleasure is worth; (b) there is nothing wrong with smoking; (c) smoking is a dirty habit; (d) there is nothing wrong with smoking as long as a person smokes moderately.
21. Do you think students should be allowed to smoke at school: (a) no, not at all; (b) yes, in designated areas; (c) yes, where they please; (d) no, not on school property; (e) it is the student's own business and he should do as he likes.
22. Do you think you will want your children to smoke: (a) no, I will forbid it; (b) no, I will caution them about it; (c) I will let them choose for themselves; (d) yes, I think there is nothing wrong with it; (e) I am undecided.

23. Do you think people should smoke in public wherever and whenever they please: (a) yes; (b) no; (c) not sure.

PART IV

24. Have you ever smoked or do you now smoke? (a) I smoke half a pack or more of cigarettes almost every day; (b) I smoke cigarettes almost every day, but less than half a pack; (c) I don't smoke every day, but I do smoke at least once each week; (d) I have smoked cigarettes (including trying them just to see what they were like) but don't smoke them at all regularly (at least once a week) at the present time; (e) I have never smoked.
25. Do your parents smoke: (a) both of my parents smoke; (b) my father smokes; (c) my mother smokes; (d) neither of my parents smoke.

PART V Mark the following true-false questions in column (a) true; (b) false; (c) I don't know.

26. Women smokers have a more difficult time quitting than men smokers.
27. Cancer is the only serious disease associated with smoking.
28. The report to the surgeon general of the United States Public Health Service on "smoking and health" left some doubts that smoking really is harmful.
29. Nicotine causes a dilation of the superficial blood vessels.
30. The confirmed smoker develops an immunity to the physiological effects of smoking.
31. Smoking two cigarettes only half way will result in the same nicotine intake as smoking one cigarette as short as possible.

PART VI Non-smokers answer the following questions.

32. How important is religious training in why you are a non-smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
33. How important are health implications in why you are a non-smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
34. How important is expense in why you are a non-smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
35. How important are your parents' objections in why you are a non-smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.

PART VII Smokers answer the following questions.

36. How important is freedom from parental control in why you are a smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
37. How important is advertising of some type (TV, radio, etc.) in why you are a smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
38. How much influence has your parents' smoking had on why you are a smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
39. How much influence has your social group had on why you are a smoker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
40. How long have you smoked? (a) 6 months or less; (b) 1 year; (c) 2 years; (d) 3 years or more.
41. I continue to smoke because: (a) it soothes my nerves; (b) it is a habit; (c) it is accepted by my social group; (d) it gives me something to do with my hands; (e) it gives me a lift.

PART VIII

42. In your opinion, people who have drinking problems come from what walks of life or social groups in the community? (a) professional groups mainly; (b) labor classes mainly; (c) mostly lower levels of society; (d) mostly upper levels of society; (e) all walks of life and all social groups; (f) I don't know.
43. Do you think students should be allowed to drink beer at school? (a) no, not at all; (b) yes, in designated areas; (c) no, not on school property; (d) it is the student's own business, and he should do as he likes.
44. Do you think you will want your children to drink? (a) no, I will forbid it; (b) no, I will caution them against it; (c) I will let them choose for themselves; (d) yes, I think there is nothing wrong with it; (e) I am undecided.
45. Do you think people should drink in public wherever and whenever they please? (a) yes; (b) no; (c) not sure.
46. According to your opinion: (a) drinking costs more than the pleasure is worth; (b) there is nothing wrong with drinking; (c) drinking is a bad habit, (d) there is nothing wrong with drinking as long as a person drinks moderately.

PART IX

47. Do your parents drink? (a) both of my parents drink; (b) my father drinks; (c) my mother drinks; (d) neither of my parents drink.

PART X

48. What per cent of alcoholics are of the skid row type? (a) 5; (b) 20; (c) 50; (d) 75; (e) 90; (f) I don't know.
49. The alcohol used for all beverages is: (a) methyl; (b) amyl; (c) propyl; (d) ethyl; (e) I don't know.
50. "100 proof" on a distilled beverage means what per cent is alcohol? (a) 25; (b) 50; (c) 75; (d) 100; (e) I don't know.
51. Alcohol is oxidized at what rate in the average person (150 pounds)? (a) 1/3 ounce per hour; (b) 3/4 ounce per hour; (c) one ounce per hour; (d) two ounces per hour; (e) I don't know.
52. Utah's rank with other states in per capita consumption of alcoholic beverages is: (a) high; (b) above average; (c) average, (d) below average; (e) low; (f) I don't know.
53. What is antabuse? (a) tranquilizer used by alcoholics; (b) central nervous system stimulant used to keep people from drinking; (c) substance found in alcoholic beverages; (d) inert substance which makes one sick when combined with alcohol; (e) active drug which makes people not want alcoholic beverages; (f) I don't know.
54. Oxidation of alcohol begins in the: (a) brain; (b) stomach; (c) kidneys; (d) blood vessels; (e) liver; (f) I don't know.
55. Utah laws permit the use of alcohol by all persons choosing to do so after attaining the age of: (a) 18; (b) 21; (c) I don't know.
56. Of those who use alcoholic beverages how many will become alcoholics? (a) 1 out of 15; (b) 1 out of 20; (c) 1 out of 30; (d) 1 out of 40; (e) I don't know.
57. The reaction to alcohol after it gets in the blood stream is to: (a) stimulate; (b) depress; (c) I don't know.
58. The American Medical Association classes alcoholism as: (a) a bad habit; (b) a disease; (c) neither one; (d) I don't know.
59. Blood alcohol concentration can be measured in different ways by taking a sample of: (a) urine; (b) breath; (c) blood; (d) all of the above; (e) none of the above.
60. The following can tell a beginning drinker whether or not he will become an alcoholic: (a) clinical psychologist; (b) psychiatrist; (c) alcoholic; (d) sociologist; (e) none of the above.

PART XI Mark the following true-false questions in column (a) true; (b) false; (c) I don't know.

61. Drinking alcoholic beverages increases body temperature.
62. A person becomes an alcoholic when he or she develops an emotional and physical dependence on alcohol.
63. A respectable family background, good education, and success in business will keep a drinker from becoming an alcoholic.
64. Alcohol is habit forming.
65. The alcohol found in wine is different from that found in beer or whiskey.
66. Two bottles of beer on an empty stomach affect most people's ability to drive a car.
67. A fairly large percentage of alcoholics are mentally defective (low intelligence).

PART XII Non-drinkers answer the following questions.

68. How important is religious training in why you are a non-drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
69. How important are health implications in why you are a non-drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
70. How important is expense in why you are a non-drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
71. How important are your parents' objections in why you are a non-drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.

PART XIII Drinkers answer the following questions.

72. How important is freedom from parental control in why you are a drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
73. How important is advertising of some type (TV, radio, etc.) in why you are a drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.

74. How much influence has your parents' drinking had on why you are a drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
75. How much influence has your social group had on why you are a drinker? (a) great influence; (b) some influence; (c) little influence; (d) no influence.
76. How long have you drunk alcoholic beverages? (a) 6 months or less; (b) 1 year; (c) 2 years; (d) 3 years or more.
77. I continue to drink because: (a) it soothes my nerves; (b) it is a habit; (c) it is accepted by my social group; (d) it takes my mind off my worries; (e) I do not know why I drink.

PART XIV

78. About how frequently do you drink alcoholic beverages on the average? (a) I do not drink; (b) several times a week; (c) once a week; (d) three times a month; (e) twice a month; (f) once a month; (g) once every 2 or 3 months; (h) once every 4 or 5 months; (i) once or twice a year.
79. Where did you get most of your information about alcohol and alcoholism? NOTE: If more than one answer, rank 1, 2, 3 in the best order. (a) parents or members of my family; (b) friends; (c) health classes; (d) from drinking experiences; (e) physicians; (f) church leaders; (g) newspapers; (h) magazines; (i) seminary or religious teachers; (j) other.
80. How reliable do you consider the two best sources of your information about alcohol and alcoholism? (Check only one): (a) extremely reliable; (b) good reliability; (c) average reliability; (d) fair reliability; (e) poor reliability.
81. Where did you get most of your information about smoking and tobacco? NOTE: If more than one answer, rank 1, 2, 3 in the best order. (a) parents or members of my family; (b) friends; (c) health classes; (d) from smoking experiences; (e) physicians; (f) church leaders; (g) newspapers; (h) magazines; (i) seminary or religious teachers; (j) other.
82. How reliable do you consider the two best sources of your information about smoking and tobacco? (Check only one) (a) extremely reliable; (b) good reliability; (c) average reliability; (d) fair reliability; (e) poor reliability.

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