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ABSTRACT

Research into the effects of alcohol on women suggests that women cannot adopt male drinking patterns and expect similar short and long term effects. To investigate the alcohol consumption rates of women employed in managerial and professional occupations, the extent of knowledge about the effects of alcohol, especially those specifically relevant to women, and to assess personal predictions of alcohol effects, 147 women and 94 men were surveyed. The subjects, who were employed in business and professional positions, completed a questionnaire including demographic information, the Alcohol Information Questionnaire (AIQ), and a measure of alcohol consumption. In addition, participants' personal predictions of alcohol effects in three conditions were combined with their weight, corrected for gender, to obtain a blood alcohol concentration (BAC) for each condition. Results showed that the majority of men and women report drinking alcoholic beverages; analysis of consumption by gender did not yield significant results. Large numbers of respondents had general information about alcohol, while fewer respondents answered questions dealing with directly useful information. There was no significant difference between male and female participants on knowledge of alcohol effects on women. Large numbers of respondents were unable to correlate amount of alcohol consumed with the effects of that consumption. (Four data tables and the AIQ are appended.) (MCF)

Knowledge and Use of Alcohol Among Business and Professional Women

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Abstract

Women and men in management and professional positions were surveyed regarding their alcohol consumption and knowledge of information about alcohol. Ninety-seven percent of the 147 females in the sample drink alcoholic beverages, with 11% rated as heavy drinkers. Single women reported higher levels of heavy drinking than did married women. Contrary to some expectations, the increase in women who drink does not appear to be accompanied by an increase in numbers of heavy drinkers. The data suggest that business and professional women may not be following the male model of heavy alcohol use.

Responses to a twenty-one item Alcohol Information Questionnaire suggest that both men and women are lacking information on the drug and how it works, especially information of a more practical nature. Respondents of both genders performed poorly on questions concerning the effects of alcohol on women. There was anecdotal evidence of female participants' reluctance to acknowledge gender differences in alcohol effects.

When asked to estimate the amount of alcohol they would need to reach various levels of intoxication, neither men nor women performed very well, with more people over- or underestimating then correctly estimating their capacity. Women over-estimated their capacity in greater numbers than did men.

Results are discussed in terms of the drinking environment of business women and future prevention and education programming.

Introduction

Concern has been expressed that, as they move into higher level male-dominated positions, maladaptive behaviors such as abusive drinking would increase among women (Gomberg, 1977; Kleeman & Googins, 1983; Wilsnack, 1978). Part of the concern rests with the fact that higher level business and professional positions are more likely to involve increased exposure to alcohol, both on the job and in social or social/business situations (Johnson, 1982). In addition to increased exposure to drinking situations and new drinking norms, occupational stress and stresses specific to females in new roles are seen as potential precipitants of heavy or abusive drinking.

Research into the effects of alcohol on women (e.g., Blume, 1982; Hill, 1978; Saunders et al., 1981; Smith, 1981) suggests that women cannot adopt male drinking patterns and expect similar short- and long-term effects, and that to engage in such initative behavior could be dangerous. However, if women are unaware of these differences they may not be able to make rational decisions on alcohol use both within and beyond the business setting. Further, knowledge of general information on alcohol effects is needed for safe use of the drug. Such knowledge should go beyond basic facts to include an understanding of one's capacity and an ability to predict the effects of consumption on one's own functioning.

The purpose of this study was to investigate the alcohol consumption rates of women employed in managerial and professional occupations. The extent of knowledge about the effects of alcohol, especially those

effects specifically relevant to women, was also investigated. Finally, a method of assessing accuracy of personal predictions of alcohol effects was developed and used with this group of business men and women.

Method

Subjects were 147 women and 94 men employed in business and professional positions in a moderately-large midwestern city. Participation was solicited through professional organizations and participants included attorneys, administrative and purchasing managers, accountants, personnel and public administrators, advertising personnel, and business owners.

The questionnaire included demographic information, an Alcohol Information Questionnaire developed for this study (appendix I), and a Quantity-Frequency (Q-F) measure of alcohol consumption originally developed by Jessor et al. (1968). Scores in the Q-F scale were converted to drinking categories (Ford & Meyer, 1978). Personal predictions of alcohol effects were obtained by asking each participant to indicate the number of drinks he/she could have in one hour before (1) feeling the effects of the alcohol, (2) becoming impaired in functioning, and (3) becoming drunk. Estimates were combined with respondents' weight, corrected for gender (Johnson, 1982) to obtain a Blood Alcohol Concentration (BAC) for each condition.

Results

Table 1 presents demographic information on the participants in this study.

Alcohol Consumption

The vast majority both of the women (96.6%) and of the men (94.7%) report drinking alcoholic beverages at least infrequently. When broken down by level of consumption (Figure 1), women appear to report lower

amounts consumed, although the analysis of consumption by gender did not yield statistically significant differences.

Among the women, marital status was significantly correlated with level of consumption (Chi square = 32.93, df = 16, $p < .01$). As illustrated in Table 2, more single, separated, and divorced women report heavy drinking than do married women. Heavy drinking occurred more frequently among single men than among married men, but differences did not reach a statistically significant level.

Religious affiliation or type of job was not significantly related to consumption. Among males the correlation between age and consumption attained statistical significance ($r = -0.187$, $p < .05$), while among females the correlation approached ($r = -0.127$, $p = 0.065$) but did not attain significance.

Knowledge of Alcohol

The mean number of correct responses to the twenty-one items on the Alcohol Information Questionnaire was 12.5 (S.D. = 2.6). The mean number correct for females was 12.4 (S.D. = 2.7), with no significant difference between females and males. No differences were found based on education or income level.

Significant correlations were found between the questionnaire scores and levels of consumption among females ($r = 0.211$, $p < .01$), with scores rising as consumption increases. Post-hoc paired comparisons using the Scheffe test found significant differences between abstainers and all four of the other Q-F categories ($p = .05$).

The percentage of correct responses to individual questions ranged from 20.6% to 97.6%. Questions dealing with general information about alcohol were correctly answered by relatively large numbers of respondents while questions dealing with more directly useful information

were answered correctly by fewer. For example, 97.3% of the women knew that alcohol affects thinking as well as coordination and balance, but only 62% knew that a beer, a glass of wine, and a shot of whiskey are roughly equivalent in alcohol content.

Alcohol Effects on Women

The five questions dealing with alcohol effects in relation to women, with responses for male and female participants, are presented in Table 3.

There was no significant difference between female ($x = 2.4$, S.D $= 1.2$) and male ($x = 2.4$, S.D. $= 1.1$) performance on these questions. No significant correlations were found between scores and income, education, or level of alcohol consumption.

Prediction of Alcohol Effects

For the purpose of this study a BAC of .02 to .049 was presumed to be the level at which one would begin to feel the effect of the alcohol; a BAC of .05 to .099 the level of beginning impairment of function; and a BAC of .10 to .149 the level of drunkenness. Participants whose responses placed them in those BAC categories were considered to have correctly estimated the effect of alcohol on themselves. BAC levels above and below these levels were seen as under- and over-estimates, respectively. Table 4 presents the data collapsed on the basis of predictive accuracy.

It should be noted that a number of respondents chose to omit the personal effects questions. Among the females the first question was unanswered by 15% of the sample, 39.5% omitted the second, and 51.7% omitted the third. In response to the third questions, some respondents wrote in comments to the effect that they never drink to drunkenness.

Conclusions

Alcohol Consumption by Females

Surveys generally report that from 56% to 80% of the female population drinks (Gomberg, 1982; Hingson et al., 1981; Smith, 1981; Wechsler, 1978). A recent survey by Parker et al. (1983) found an 89% drinking rate among employed women in Detroit. The present 96.6% drinking rate appears, therefore, to be one of the highest rates found among women. The present sample, while not representative of professional and business women in general, suggests that women in these positions are drinking in numbers comparable to their male colleagues.

The eleven percent heavy drinking rate appears, on the surface, to be comparable to female heavy drinking rates found in other studies (Johnson, 1982; Smith, 1981; Wechsler, 1978). However, the high proportion of drinkers in the sample may affect the interpretation of these data, in that others who report similar rates have higher numbers of abstainers in their samples. Johnson (1982), for example, reports that, when abstainers are excluded from her sample, the "heavier" drinking rate rises from 9% to 16%. The exclusion of abstainers in the present sample leaves the heavy drinking rate essentially unchanged.

Concern has been expressed that, as women join the ranks of users of alcohol the numbers of heavy drinkers among them will rise proportionally or in greater than proportional amounts (Whitehead & Ferrence, 1977). The present data do not support these predictions. The women in this group do not appear to have reacted to exposure to the drinking world or to the stress of the work role, discrimination, or other pressures with heavy drinking. Perhaps they have rejected the male model of drinking or are drinking merely in order to conform to the non-abstinent norm among their male peers. They may also feel that the expectation to "drink like a lady" remains in effect despite their

relatively high occupational status.

The significantly higher proportion of heavy drinking among single, separated, and divorced women is consistent with others' reports of heavier drinking among unmarried women and men (Johnson, 1982; Wechsler, 1978) and suggests that unmarried adults might be considered to be at higher risk for alcohol problems than married people. Those in high level professional positions, where exposure to drinking situations may be greater and controls over behavior weaker, may be especially vulnerable to the reinforcing effects of alcohol consumption.

Alcohol Information

Interpretation of the extent of alcohol knowledge, as measured by the Alcohol Information Questionnaire, depends on the establishment of a "passing grade" on the questionnaire. The average of 59.5% of questions correctly answered by this group can be compared with studies by Buckalew (1979) and Engs (1978), whose samples attained 58.7% and 56% correct answers, respectively. Both authors interpreted their findings as indicative of a lack of alcohol awareness and a need for alcohol education. In addition, the present sample is composed almost entirely of users of the drug, while the samples in the studies cited included higher proportions of abstainers who might be expected to have less alcohol information and have less use for that information.

With one exception, the poor performance on questions dealing with gender differences in alcohol effects points to inadequate dissemination of this new information to the public. The question on drinking during pregnancy, which was correctly answered by most participants, suggests that educational efforts concerning fetal alcohol effects have been successful, at least within this sample, which is largely composed of

people within the main adult childbearing years.

Despite the fact that the questions on gender differences in alcohol effects would be more relevant to women, they knew no more did the men. In addition, a few women expressed reluctance to admit to gender differences as they felt that it would run counter to their belief in equality of the sexes. Efforts to educate women should take into account feminist philosophical stances and skepticism or rejection of statements about "natural" differences between the sexes. This may be even more pertinent to career women who might fear that acknowledgment of such differences would be used to justify discrimination against them.

Responses to the questions asking the participant to estimate his/her capacity for alcohol suggest that a large number of participants are unable to correlate amount of alcohol consumed with the physiological and/or psychological concomitants of that consumption. Again, this lack of predictive ability is evidenced in a group 82% of whom are at least light drinkers. Factors which might contribute to this lack of accuracy include lack of experience and lack of experience with higher levels of intoxication, both of which might be more applicable to female than to male drinkers. Lack of attention to the effect alcohol is having, due to the relaxation effect of the drug itself, attention to other activities, and/or desire to ignore or deny personal drinking habits, may also be involved.

Whatever the reasons for the lack of ability to predict the effect of consumption, if the inaccurate estimators are using their predictions in actual drinking situations, they may be driving or engaging in other activities while at unplanned for levels of intoxication. These activities might also include business events at which full cognitive functioning and professional decorum would be valued. Thus, increased understanding of general, gender specific, and personal alcohol effects

could enable women and men to use alcohol in business and social settings more effectively and safely.

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TABLE 1

DEMOGRAPHIC DATA ON PARTICIPANTS

	TOTAL SAMPLE (N = 247)		FEMALES (N = 147)		MALES (N = 94)	
	N	%	N	%	N	%
RACE						
WHITE	227	91.9	137	93.2	87	92.6
BLACK	3	1.2	1	0.7	2	2.1
HISPANIC	5	2.0	3	2.0	2	2.1
NATIVE - AMERICAN	4	1.6	2	1.4	2	2.1
RELIGION						
PROTESTANT	138	55.9	75	51.0	61	64.9
CATHOLIC	36	14.6	23	15.6	13	13.8
JEWISH	1	0.4	1	0.7	0	0
OTHER	29	11.7	23	15.6	4	4.3
MARITAL STATUS*						
MARRIED	172	69.2	92	62.6	75	79.8
SINGLE	29	11.7	20	13.6	9	9.6
SEPARATED	4	1.6	4	2.7	0	0
DIVORCED	36	14.6	27	18.4	8	8.5
WIDOWED	4	1.6	4	2.7	0	0
EDUCATION						
HIGH SCHOOL GRADUATE	24	9.7	18	12.2	6	6.4
SOME COLLEGE	64	25.9	43	29.3	20	21.3
A.A./A.S.	6	2.4	3	1.4	3	3.2
B.A./B.S.	97	39.3	56	38.1	37	39.4
M.A./M.S.	35	14.2	17	11.6	18	19.1
M.D.	1	0.4	0	0	1	1.1
Ph.D./Ed.d.	3	1.2	2	1.4	1	1.1
OTHER	17	6.9	9	6.1	8	8.5
TYPE OF JOB						
MANAGERIAL	61	24.7	26	17.7	34	36.2
PROFESSIONAL	60	24.3	39	26.5	19	20.2
ADMINISTRATIVE	52	21.1	34	23.1	15	16.0
SALES	24	9.7	16	10.9	8	8.5
CLERICAL	7	2.8	7	4.8	0	0
PRODUCTION	6	2.4	4	2.7	2	2.1
OTHER	25	10.1	12	8.2	13	13.8

MEAN AGE - FEMALES - 38.5 years old (S.D. = 9.89)**
MALES - 40.4 years old (S.D. = 11.70)

MEAN YEARS ON JOB FEMALES - 4.2 years (S.D. = 4.42)***
MALES - 9.0 years (S.D. = 8.93)

MEAN YEARS IN FIELD - FEMALES - 8.0 years (S.D. = 6.42)***
MALES - 12.9 years (S.D. = 10.58)

*Difference between genders statistically significant, $p < .01$
**Difference between genders statistically significant, $p = .025$
***Difference between genders statistically significant, $p = .0000$

TABLE 2

ALCOHOL CONSUMPTION BY MARITAL STATUS

FEMALES ONLY

	MARRIED		SINGLE		SEPARATED		DIVORCED		WIDOWED	
	N	%	N	%	N	%	N	%	N	%
ABSTAINER	3	3.3	1	5.0	0	0	0	0	1	25.0
INFREQUENT	18	19.6	2	10.0	0	0	5	18.5	0	0
LIGHT	49	53.3	8	40.0	1	25.0	11	40.7	1	25.0
MODERATE	16	17.4	6	30.0	0	0	7	25.9	2	50.0
HEAVY	6	6.5	3	15.0	3	75.0	4	14.8	0	0

Table 3

Women and Alcohol Questions

Alcohol Information Questionnaire

	Correct Answers (%)			
	Males		Females	
	N	%	N	%
Alcohol affects males and females differently due to hormonal differences between the genders.	29	30.9	43	29.3
Women "on the pill" absorb alcohol faster than those not taking oral contraceptives.	21	22.3	33	22.4
A male and a female of the same weight can drink equal amounts of alcohol and experience the same effects.	55	58.5	69	46.9
Abusive or alcoholic drinking causes medical problems at the same rate for men or for women.	36	38.3	56	38.1
A woman should limit or stop drinking during pregnancy.	93	98.9	139	94.6

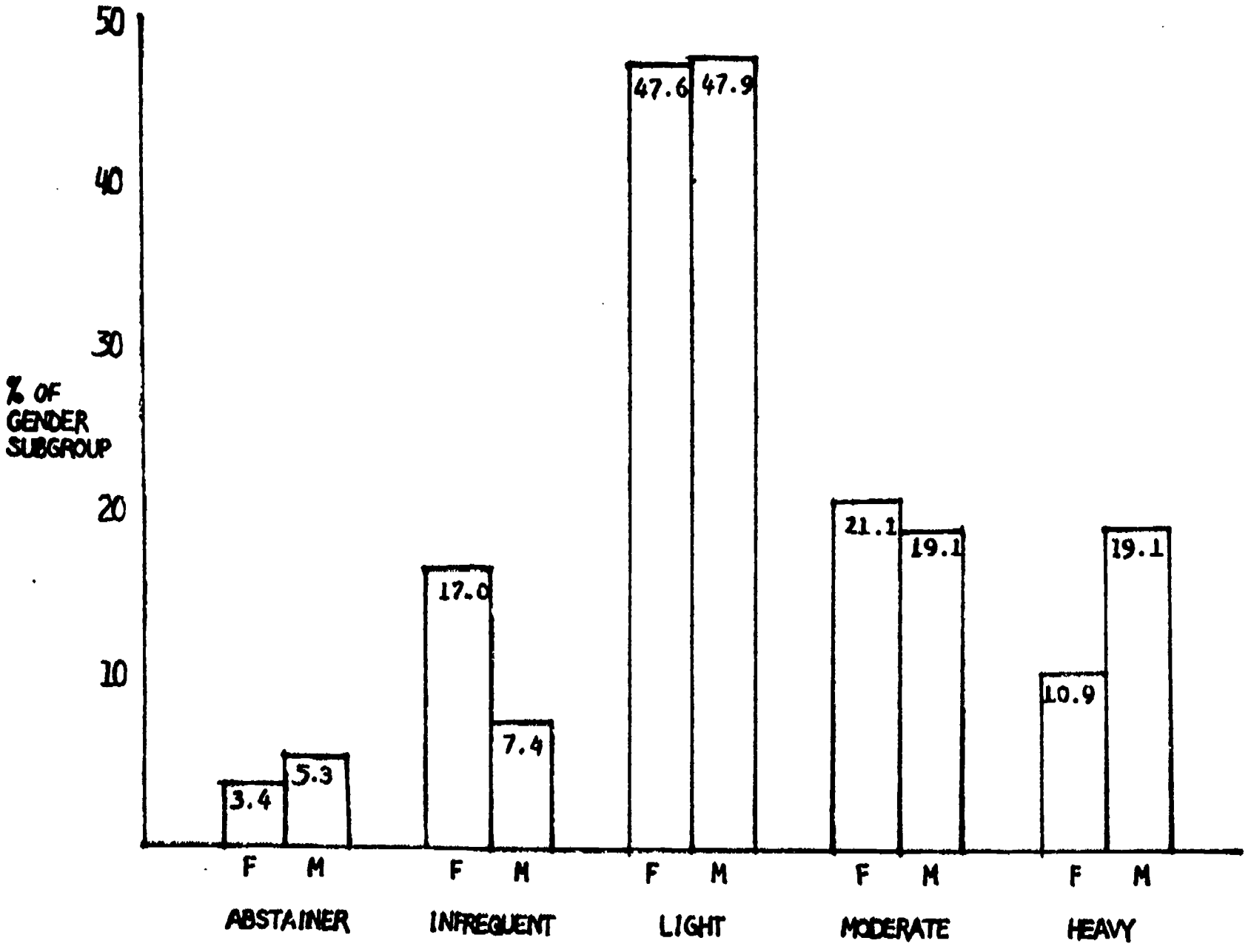
TABLE 4

ACCURACY OF ESTIMATES OF ALCOHOL EFFECT

	TOTAL SAMPLE %	MALES %	FEMALES %
BAC level to "feel the effects":			
Underestimate	3.5	6.5	1.6
Correct Estimate (BAC .02 - .049)	39.6	45.5	36.0
Overestimate	56.9	48.1	62.4
BAC level to "become impaired":			
Underestimate	9.2	13.5	6.7
Correct Estimate (BAC .05 - .099)	44.0	57.7	36.0
Overestimate	46.8	28.9	57.3
BAC level to "get drunk":			
Underestimate	25.3	34.9	19.7
Correct Estimate (BAC .10 - .149)	39.5	39.5	39.4
Overestimate	25.2	25.6	40.8

FIGURE 1

QUANTITY-FREQUENCY OF ALCOHOL CONSUMPTION



RESULTS OF ALCOHOL INFORMATION QUESTIONNAIRE

Alcohol Information Questions	Correct Answers: Total Sample N	Total Sample %	Males N	Males %	Females N	Females %
1. Alcohol is similar to food in that it must be digested. (F*)	143	57.9	61	64.9	78	53.1
2. Alcohol affects coordination and balance but does not affect thinking ability. (F)	241	97.6	93	98.9	143	97.3
3. There is approximately the same amount of alcohol in a 1-ounce shot of 100 proof distilled spirits, an 4-ounce glass of table wine, and a 12-ounce can of beer. (T)	158	64.0	64	68.1	91	61.9
4. A cold shower, exercise, or coffee should help you sober up faster. (F)	158	64.0	61	64.9	93	63.3
5. What alcohol does for you depends, in part, on your mood before you start drinking. (T)	177	71.7	62	66.0	112	76.2
6. Beverage alcohol has a depressant effect on the central nervous system. (T)	224	90.7	89	94.6	130	88.4
7. Alcohol affects males and females differently due to hormonal differences between the sexes. (T)	73	29.6	29	30.9	43	29.3
8. One way to slow down the effect of alcohol is to dilute the drink. (T)	139	56.3	54	57.4	81	55.1
9. A mixed drink which is carbonated will make you intoxicated faster than a non-carbonated drink. (T)	63	25.5	18	19.1	43	29.3
10. Women on "the pill" absorb alcohol faster than those not taking oral contraceptives. (T)	56	22.7	21	22.3	33	22.4
11. Having food in your stomach will slow down the rate at which alcohol is absorbed. (T)	220	89.1	85	90.4	130	88.4
12. Sweet mixed drinks produce worse hangovers than non-sweet drinks. (T)	129	52.2	48	51.1	76	51.7
13. A male and a female of the same weight can drink equal amounts of alcohol and experience the same effects. (F)	128	51.8	55	58.5	69	46.9
14. One way to slow down the rate of alcohol entering the bloodstream is to drink slower. (T)	159	64.4	59	62.8	97	66.0
15. Abusive or alcoholic drinking causes medical problems at the same rate for men or for women. (F)	94	38.1	36	38.3	56	38.1
16. The passage of time is the only cure for intoxication. (T)	199	80.6	74	78.7	120	81.6
17. A heavier person must drink more alcohol to become intoxicated. (T)	131	53.0	50	53.2	79	53.7
18. A woman should limit or stop drinking during pregnancy. (T)	238	96.4	93	98.9	139	94.6
19. In Kansas you are driving while intoxicated (DWI) if the percentage of alcohol in you bloodstream has reached ____%	51	20.6	24	25.5	27	18.4
20. Liquor that is 90 proof contains _____ % alcohol.	55	22.3	35	37.2	20	13.6
21. Alcohol affects behavior by affecting which part of the body?	201	81.4	81	86.2	116	78.9

*correct response