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Drinking Patterns and Attitudes toward Alcoholism of Australian Human-Service Students

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SUMMARY. Drinking patterns and attitudes toward alcoholism of 1449 students in medicine, law, pharmacy, social work, applied psychology, police science, religion and nursing in Australia are reported, revealing primarily similarities with results of studies in other English-speaking countries.

AUSTRALIA has the highest per capita consumption of alcoholic beverages among English-speaking cultures and ranks tenth worldwide (1, 2). Although numerous studies have been conducted with students in other English-speaking countries, whose drinking patterns usually reflect those of their culture, only a few have been carried out with Australian students (1, 3-5).

Reports from various countries have shown that such variables as sex, year in school, religious background and course of study are associated with the quantity and frequency of alcohol consumption among students (6-12). The present study examines whether these demographic variables are also important determinants of the drinking patterns of Australian students.

Human-service workers, such as social workers, psychologists, physicians, clergy and others, have a high probability of interacting with or becoming involved in the treatment or counseling of alcoholics. Some research has indicated that the attitudes of helping professionals toward alcoholism can influence the prognosis of alcoholic patients (13-17). Other studies have shown that as helping professional students go through their course of study they

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often become more negative toward alcoholics (18–20) and that different professional disciplines have different attitudes toward alcoholics (14, 17, 21–28).

Sex and religious background can also influence attitudes toward alcoholics (29–31); however, very little research concerning the attitudes of human-service workers or students toward alcoholics and alcoholism has been accomplished in Australia. It would be of interest to determine whether various demographic variables are factors in the attitudes of Australian human-service students toward alcoholism as they are in other English-speaking cultures. Thus the purposes of this study were to determine if sex, year in school, religious background or course of study are factors in the drinking patterns and attitudes of human-service students in Brisbane, Australia.

METHOD

Sample

All first- and final-year students from the law and pharmacy schools and the social work and applied psychology department and all first- and fourth-year students in the medical school (the last year for which medical students are together in large lecture classes) at Queensland University were asked to participate in the study. In addition, first- and last-year students at the police academy, all religious seminaries in the Brisbane area, and at four nursing schools (representing a large and a small public and private institution) were asked to take part in the project.

Before administration of the questionnaire, the purpose of the study, procedures used to safeguard respondents' anonymity and voluntary participation were discussed. From the total possible number of students, 130 (9%) either did not wish to participate in the study or returned questionnaires with obviously faked responses (e.g., reporting a daily consumption of 99 bottles of beer). This proportion ranged from 0 among the police cadets to 22% among the social work and applied psychology students. The final sample included 1449 students, of whom 55.5% were men, 44.5% were women, 49.3% were first-year students and 50.7% were last-year students. Of the total sample, 55.3% indicated that religion was important and 44.7% that religion was not important to them. The religions in which the respondents were brought up were: Church of England, 27.4%; other Protestant, 27.7%; Catholic, 33.5%; and other or none, 11.4%.

The Questionnaire

The questionnaire was compiled on the basis of World Health Organization recommendations for standardization in research on drug and alcohol behavior (32, p. 28; 33).

Drinking Patterns. The quantification of alcohol consumption was adapted from techniques developed by Khavari and Farber (34). Each respondent was asked to report average frequency of drinking and the usual amount consumed per occasion during the past year. The grams of absolute alcohol, whether in beer, wine or distilled spirits, were calculated for each respondent, based on the standard amount of alcohol in beer, wine and distilled spirits suggested by the beverage industry and other studies in Australia (1, 35).²

To determine the average amount of alcohol consumed per day the frequency of use was assigned "loading values"³ from 365 for those individuals who responded that they consumed the product every day to zero for those respondents who indicated that they had not used alcoholic beverages during the past year. The loading value was then multiplied by the quantity of each drink consumed and divided by 365 to obtain amount consumed on a daily basis.

To calculate the total amount of absolute alcohol consumed on a daily basis the amount of absolute alcohol consumed in the form of beer, wine and distilled spirits per day was then summed.

Based on World Health Organization recommendations (32, p. 28; 33) 0 to 19 g of absolute alcohol consumed per day is considered "light" drinking, 20 to 39 g per day "moderate" and 40 to 59 g per day "moderate-heavy" or "possible problem drinking." "At risk" or "heavy" drinking is from 60 to 79 g of absolute alcohol per day and "very heavy" drinking, which is considered to cause physical or psychosocial damage, is 80 + g of absolute alcohol per day (60 g of absolute alcohol is equivalent to about 6 drinks and 80 g is approximately 8 drinks).

Attitude Questions. The Attitudes toward Alcoholism Questionnaire (ATA) by Tolor and Tamerin (36) was used. It is easy to administer and has been used in previous studies with human-service workers (37). It is divided into six independent scales: Psychological Etiology, which refers to statements that embrace the notion that the causes of alcoholism are psychological; Physical-Genetic Etiology, which applies to statements presenting the idea that alcoholism has physical or inherited causes; Moral Weakness, which consists of assertions embracing the view that alcoholics have weak moral character; Medical Illness, which refers to propositions articulating the notion that alcoholics are sick and that alcoholism can be treated as an illness; Humanism, which contains assertions supporting a kind, fair and humanistic treatment of alcoholics; and Social Rejection, which refers to statements that support the view that alcoholics should be avoided or rejected. The higher the scale score the more the respondent agrees with the related concept. The scales are only minimally influenced

² Each 10 oz (285 ml) beer was considered to contain 10.4 g, each wine glass of wine (90 ml) was considered to contain 8.2 g and each "nip" (30 ml) of distilled spirits to contain 9.2 g of absolute alcohol.

³ The factors used in calculating the amount of beverage consumed were: Every day = 365, 3 or 4 times a week = 182, 1 or 2 times a week = 78, 2 to 4 times a month = 34, 2 or 3 times a year = 3.5, about once a year = 1.0, have used or experimented with = 0.1, never used = 0.

by sex, age and education of the respondent, according to the authors (36).

Reliability of the Questionnaire. A panel of individuals currently working as educators in the service-oriented professions was assembled to comment on the items under consideration for the questionnaire. A preliminary questionnaire was then constructed and presented to a group of teaching and health students. After revision the questionnaire was submitted to 82 other students, and the reliability of the instrument was tested by administering the questionnaire to the same students after 2 weeks. The reliability coefficients were calculated by use of the Pearson product-moment correlation. The test-retest reliability of the quantity and frequency of substance use ranged from .62 to .95. The reliability of the six attitude scales ranged from .38 to .77 (mean, .54)—much lower than the reliability obtained by Tolor and Tamerin (36), who reported a range of .53 to .77 and a median of .71. The low reliability with the Australian sample could be due to cultural difference in interpretation of the questions and different attitudes toward alcoholism. The factor of low reliability must be considered to be a limitation of the study and to the interpretation of results involving the six attitude scales.

RESULTS

Drinking Patterns

Most students (85.3%) reported that they drank at least once during the previous 12 months, over half (55.9%) once a month or more, about a fourth (26.4%) at least once a week and 1.4% once a day. Of these students, 57.4% drank beer, 49.7% drank distilled spirits and 55.9% drank wine once a month or more. On a yearly basis 67.9% drank beer, 85.3% wine and 75.8% spirits once a year or more. Although wine appears to be the most frequently consumed alcoholic beverage, beer is the beverage drunk in the greatest quantity, 100 l of beer, 13 l of wine and 6.5 l of spirits being consumed per year by those respondents who drink.

The average consumption of absolute alcohol for those students who drink was 7.1 l per year and 15.1 g per day (Table 1). Most students (67.9%) consumed up to 20 g of absolute alcohol on a daily basis and would be considered light drinkers, while 3.4% consumed over 60 g per day and would be considered heavy drinkers with a high probability of problems related to their drinking.

When the drinking patterns of these students are compared to the results of other studies of Australian tertiary students, fewer (85.3%) drink once a year or more, compared with the 90.6% reported by Krupinski and Stoller (3), although Bell et al. (4)

TABLE 1.—Mean (\pm SD) Grams of Alcohol Consumed per Day and Drinking Classification of the Students by Sex, Year in School, Importance of Religion and Course of Study, in Percent

| | N | ALCOHOL CONSUMPTION* (G per Day) | None | DRINKING CLASSIFICATION | | | | |
|-------------------------------|-----|--|------|-------------------------|-----------------------|---------------------------------|--------------------|---------------------------|
| | | | | Light (0-20 g) | Moderate (20-39 g) | Moderate- Heavy (40-59 g) | Heavy (60-79 g) | Very Heavy (80 + g) |
| <i>Sex</i> | | | | | | | | |
| Men | 803 | 20.3 \pm 37.9‡ | 14.7 | 58.4 | 15.8 | 5.2 | 2.9 | 3.0‡ |
| Women | 646 | 8.7 \pm 11.2 | 9.7 | 79.2 | 8.5 | 1.9 | 0.3 | 0.4 |
| <i>Year in School</i> | | | | | | | | |
| First | 715 | 13.6 \pm 36.1 | 13.8 | 69.1 | 11.3 | 3.6 | 0.7 | 1.4* |
| Last | 734 | 16.4 \pm 24.5 | 11.4 | 66.2 | 13.8 | 3.7 | 2.7 | 2.2 |
| <i>Importance of Religion</i> | | | | | | | | |
| Very | 801 | 11.9 \pm 39.8‡ | 18.5 | 67.5 | 10.1 | 2.3 | 0.8 | 0.9‡ |
| Not | 648 | 18.1 \pm 24.3 | 5.3 | 67.9 | 15.7 | 5.3 | 2.8 | 3.0 |
| <i>Means</i> | | 15.1 \pm 30.4 | 12.6 | 67.9 | 12.6 | 3.7 | 1.7 | 1.7 |
| <i>Course of Study</i> | | | | | | | | |
| Law | 244 | 25.9 \pm 55.5‡ | 4.9 | 56.5 | 23.0 | 7.4 | 3.7 | 4.5‡ |
| Medical | 431 | 13.2 \pm 21.4 | 10.7 | 72.8 | 9.5 | 3.0 | 1.9 | 2.1 |
| Nursing | 213 | 9.4 \pm 10.7 | 7.0 | 81.2 | 9.9 | 1.4 | 0.5 | 0 |
| Pharmacy | 147 | 15.1 \pm 19.3 | 5.4 | 70.1 | 13.6 | 7.5 | 2.7 | 0.7 |
| Police | 96 | 20.4 \pm 24.9 | 7.3 | 60.4 | 20.8 | 5.2 | 3.1 | 3.1 |
| Seminary | 130 | 5.6 \pm 6.1 | 55.8 | 40.3 | 3.1 | 0.8 | 0 | 0 |
| Social work- Psychology | 188 | 9.5 \pm 12.0 | 4.8 | 73.8 | 15.2 | 4.8 | 1.4 | 0 |
| <i>Means</i> | | 15.1 \pm 18.7 | 12.6 | 67.9 | 12.6 | 3.7 | 1.7 | 1.7 |

* The means are calculated from the number who drank per day, and not the total in each group. Ten grams of absolute alcohol are equal to about 1 drink.

† $P < .05$. ‡ $P < .001$.

reported similar results (85.5%). Also, fewer students in the present study drank on a weekly basis (26.4%), compared with the results of Krupinski and Stoller (29.9%) and Bell et al. (42.1%).

The students in the present study had a different drinking pattern from that reported for the Australian general population, consuming a much lower amount of absolute alcohol per year—7.1 l as compared with 10 l per capita per year and 17 l per drinker per year (38). More students (67.6%) appeared to be “light to moderate drinkers” (less than 40 g per day), compared with the total population of drinkers (52.1%) in the 1977 National Bureau of Statistics study (2) and the population of 18–24-year-olds in that study (54.5%). Fewer students (1.7%) were very heavy drinkers

(over 80 g per day), in comparison with those in the national study (2.2%). However, on the basis of grams of alcohol per day, more students (87.4%) consumed some alcohol, in comparison with the general population (61.8%) and the 18–24-year-olds (64.4%) in the national study. Fewer students were heavy drinkers in this sample than has been reported in some American studies. Engs (6), Wechsler and McFadden (8) and others (13) have reported that about 10% of students in their samples were heavy drinkers.

Less drinking by these students, as compared with the results of other studies, may be due to differences in sampling techniques, that the present subjects were a select group of professional and service-oriented students and not a cross-section of tertiary students randomly selected from a variety of courses of study, and to variations in calculations of the amount and frequency of alcohol consumption. The differences from American studies may also represent cross-cultural variances.

Sex. The men students consumed significantly greater amounts of alcohol than the women ($t = 7.5$, 817 df, $p < .001$), with a mean of 20.3 g per day, compared with 8.7 g per day per drinker among the women students (Table 1). An examination of Table 1 shows that there is a significant difference between the drinking practices of the men and the women ($\chi^2 = 85.5$, 5 df, $p < .001$). A higher percentage of the women respondents drink than men (90.3 and 85.3%, respectively); however, even though a greater percentage of the women drink, more of them are considered light drinkers (79.2%) compared with men (58.4%) and more men (5.9%) consume 60 g or more per day of absolute alcohol than do women (0.7%). The men students tend to drink beer and the women students tend to drink wine, with 60.9% of the men drinking beer and 63.9% of the women drinking wine once a month or more.

The men students in the present sample consume less alcohol (20.3 g per day) than men in Australia (28.1 g per day) or in Queensland (29 g per day). Fewer men in this study consumed over 80 g per day of absolute alcohol, compared with the sample of 18–24-year-olds (5.6%) in the Australian national study (38). The women students in the present sample drink less (8.7 g per day) than those in the national survey (10.5 g per day) and about the same as those in Queensland (8.8 g per day). Most studies in other cultures have indicated that men drink more frequently and consume more alcohol in comparison with women (6, 8–11, 13).

Year in School. Final-year students drink more, but not significantly more, grams of absolute alcohol per day than first-year students (16.4 vs 13.6; $t = 1.7$, 1084 df, $p = .08$). Last-year students have significantly different drinking patterns ($\chi^2 = 13.6$, 5 df, $p < .05$), compared with first-year students, with 88.6% versus 86.2% being drinkers and 4.9% versus 2.1% being heavy drinkers (over 60 g of absolute alcohol per day). Other studies, including Singh and Singh (11), Wechsler and McFadden (8), Engs (6) and McKay et al. (12), have also shown that students change their drinking patterns as they mature. This may be due to increased age or adaptation to peer influences as they go through tertiary education.

Religion and Importance of Religion. There was a significant difference ($\chi^2 = 105$, 15 df, $p < .0001$) in the drinking patterns of those raised in different religious denominations: 93.4% of those with Church of England backgrounds, 76.2% of other Protestants, 94.2% of Roman Catholics and 80% of other religions or no religious group consumed alcohol at some point during the past year. Although over 70% of all groups consumed up to an average of 20 g of alcohol per day, more "heavy and very heavy" drinkers (over 60 g per day) were of Roman Catholic backgrounds (4.6%), followed by Church of England (3.5%), other Protestants (2.5%) and other or no religious backgrounds (1.8%).

Individuals who considered religion not to be important drank significantly ($t = 3.7$, 1189 df, $p < .001$) more alcohol per day (18.1 g) than those who considered religion to be important to them (11.9 g). There was also a significant difference in their drinking patterns ($\chi^2 = 84.5$, 5 df, $p < .001$). More individuals who considered religion unimportant consumed alcohol at least once a year (94.7%), compared with individuals who considered religion important (81.5%), and fewer individuals who considered religion important (1.7%), compared with those who considered religion unimportant (5.8%), were heavy drinkers, consuming over 60 g of absolute alcohol per day. Other studies have also shown that religious background and the importance of religion in a person's life are factors in drinking patterns (7, 8, 13). Most studies have indicated that Roman Catholics tend to consume more alcohol in comparison with other groups, as is the case in the present study. Also, most studies have indicated that the more religious persons are the less they are apt to drink, as was found in this study.

Course of Study. A significant difference was found in the amount of alcohol consumed and in the drinking patterns of students with different courses of study ($p < .001$). The law students were the highest consuming group, with a mean of 25.9 g per day, which is above the national mean of 21 g per day. The lowest alcohol-consuming group was the seminary students, with a mean of 5.6 g per day. All groups other than the law and police students were below the Australian mean (Table 1).

The law and police students in the sample were also heavier drinkers than students in other courses with 4.5 and 3.1%, respectively, consuming over 80 g of absolute alcohol per day (equivalent to 8 drinks). Compared with the national average of 2.3% for 18–24-year-olds and 2.2% for all adults, more police and law students were very heavy drinkers. However, if one takes into consideration that all police cadets and 70% of the law students were men, this rate of heavy drinking is actually lower than the national average of 18–24-year-old men, of whom 5.6% consume over 80 g of absolute alcohol daily. However, about 70% of the medical students were men and their mean daily consumption (13.2 g) is much lower than either the law or police students, so other factors beside sex probably account for the significant difference between the amount of alcohol consumed per day among students in the different courses. About 80% of the seminarians were men, and all of them reported that religion was important to them. Even though most of this group were men the importance of religion may have accounted for lower drinking among this group. However, in each of the other groups about half of the students expressed feelings of the importance of religion and when the analysis excluded the seminarians there was no significant difference between the groups.

The mean age of the total sample was 20.5 years, and the mean age in each group was 18.7 years among the police cadets, 18.8 among the pharmacy students, 19.2 among the medical students, 19.8 among the nursing students, 20.9 among the law students, 25.0 among the social work–psychology students, and 27.2 among the seminarians. Various studies (6, 8, 11, 12) have shown that older students are more likely to drink than younger ones. However, the two groups in this study with the highest mean age (seminarians and social work–psychology students) had some of the lowest alcohol consumption patterns, while the police cadets, with

the lowest mean age, and law students, with a mean age close to the age of the total group, were the heaviest drinkers. Age does not appear to have influenced the drinking patterns between courses in this study.

Students in the health-related professions of nursing, medicine and pharmacy consumed much less alcohol than either the police or law students. The social work students also had a lower consumption of alcohol, which may be accounted for by about 60% of them being women, as did nursing students, of whom 92% were women. However, the reasons for the significant difference between the consumption patterns and amount of alcohol consumed by students in these different courses of study is not clear and further research in this area needs to be done.

TABLE 2.—Mean (\pm SD) Scores on the Attitudes towards Alcoholism Questionnaire by Sex, Year in School, Importance of Religion and Course of Study

| | N ^a | Psychological Etiology | Social Rejection | Physical- Genetic | Humanism | Moral Weakness | Medical Illness |
|------------------------------------|----------------|---------------------------|---------------------|----------------------|-----------------|-------------------|--------------------|
| Sex | | | | | | | |
| Men | 803 | 12.0 \pm 1.9† | 10.3 \pm 2.3 | 9.3 \pm 2.2 | 12.2 \pm 2.0* | 7.9 \pm 2.5* | 9.9 \pm 1.9 |
| Women | 646 | 12.5 \pm 1.8 | 10.2 \pm 2.3 | 9.5 \pm 2.7 | 12.6 \pm 1.8 | 7.3 \pm 2.4 | 10.1 \pm 2.1 |
| Year in School | | | | | | | |
| First | 715 | 12.2 \pm 1.9 | 10.2 \pm 1.8 | 9.9 \pm 2.1† | 12.1 \pm 1.9* | 7.7 \pm 2.5* | 10.3 \pm 2.1† |
| Last | 734 | 12.3 \pm 1.9 | 10.3 \pm 1.9 | 9.2 \pm 2.2 | 12.5 \pm 2.0 | 7.4 \pm 2.3 | 9.7 \pm 1.2 |
| Importance of Religion | | | | | | | |
| Very | 801 | 12.1 \pm 1.9* | 10.2 \pm 1.9 | 9.3 \pm 1.8* | 12.3 \pm 1.8 | 7.9 \pm 2.5† | 10.2 \pm 1.9* |
| Not | 648 | 12.4 \pm 2.0 | 10.4 \pm 1.9 | 9.7 \pm 1.9 | 12.3 \pm 1.9 | 7.1 \pm 2.3 | 9.8 \pm 2.1 |
| Means | | 12.2 \pm 1.9 | 10.3 \pm 2.0 | 9.5 \pm 2.2 | 12.3 \pm 1.9 | 7.6 \pm 2.4 | 10.0 \pm 2.1 |
| Course of Study^b | | | | | | | |
| Law | 242 | 11.8 \pm 1.8 | 10.2 \pm 2.4 | 9.4 \pm 2.1 | 12.2 \pm 2.1 | 7.4 \pm 2.4 | 10.0 \pm 2.2 |
| Medical | 431 | 12.2 \pm 1.9 | 10.1 \pm 2.3 | 9.2 \pm 2.2 | 13.3 \pm 1.9 | 7.5 \pm 2.5 | 10.1 \pm 2.1 |
| Nursing | 213 | 12.7 \pm 1.9 | 10.1 \pm 2.4 | 9.9 \pm 2.3 | 12.5 \pm 1.8 | 7.5 \pm 2.5 | 10.3 \pm 2.1 |
| Pharmacy | 147 | 12.2 \pm 1.9 | 10.4 \pm 2.2 | 9.8 \pm 2.0 | 12.1 \pm 1.9 | 7.7 \pm 2.4 | 10.2 \pm 1.9 |
| Police | 96 | 12.2 \pm 2.1 | 10.4 \pm 2.2 | 9.9 \pm 2.0 | 11.8 \pm 2.1 | 8.2 \pm 2.6 | 10.6 \pm 2.1 |
| Seminary | 130 | 12.3 \pm 1.9 | 10.4 \pm 2.1 | 9.2 \pm 2.3 | 12.3 \pm 1.7 | 8.2 \pm 2.5 | 9.5 \pm 2.4 |
| Social work- Psychology | 188 | 12.3 \pm 1.9 | 10.5 \pm 2.2 | 9.3 \pm 2.3 | 12.8 \pm 1.8 | 7.0 \pm 2.0 | 9.2 \pm 2.6 |
| Means | | 12.2 \pm 1.9 | 10.3 \pm 2.3 | 9.5 \pm 2.2 | 12.3 \pm 1.9 | 7.6 \pm 2.4 | 10.0 \pm 2.2 |

^a Total possible number in each category.

^b The difference between courses of study and the Psychological Etiology scale was significant at $p < .001$, and between the courses of study and the Physical-Genetic, Humanism, Moral Weakness and Medical Illness scales at $p < .05$.

* $P < .05$. † $P < .001$.

Attitudes toward Alcoholism

Sex, Year in School and Importance of Religion. Table 2 shows that significantly more women than men students had higher scores ($t = 3.5$, 1348 df, $p < .001$) on the Psychological Etiology and Humanism scales ($t = -3.3$, 1420 df, $p < .05$). The men students scored higher on the Moral Weakness scale ($t = 2.8$, 1385 df, $p < .05$).

The first-year students had significantly higher scores ($t = 6.8$, 1387 df, $p < .001$) on the Physical-Genetic Etiology and the Medical Illness ($t = 5.6$, 1409 df, $p < .001$) conception of alcoholism. The first-year students also had significantly higher scores ($t = 2.6$, 1423 df, $p < .05$) on the Moral Weakness scale compared with last-year students. The last-year students had significantly higher scores ($t = -2.8$, 1420 df, $p < .05$) on the Humanism scale, however.

Individuals who felt that religion was important to them had significantly higher scores on the Moral ($t = -6.5$, 1602 df, $p < .001$) and Medical Illness scales ($t = -3.0$, 1556 df, $p < .05$). Individuals to whom religion was not very important scored higher on the Psychological ($t = -2.6$, 1443 df, $p < .01$) and Physical-Genetic conceptions of alcoholism ($t = -3.0$, 1489 df, $p < .01$).

It appears that the women students subscribed more so than the men to the concept that alcoholism is caused by physical-genetic problems and are more humanistic and feel less that alcoholism is a moral weakness. This is in contrast to the results of Tolor and Tamerin (36), who found no difference between men and women on their attitudes toward alcoholics, and to those of Kilty (29), who found that men were more apt to view alcoholism as a physical disease. First-year students tended to see alcoholism as a moral weakness as well as a medical and physical-genetic problem, while last-year students were more humanistic and less moralistic in their attitudes toward alcoholics. This appears to be in contrast with other studies, which show more negative attitudes toward alcoholics as students progress in school. A study by Eron (18) reported that nursing students become less humanistic as they progress through school. A study by Ferneau and Gertler (19) indicated that as psychiatry students go through their residency, they become more negative toward alcoholics. However, some other studies have indicated no differences in attitude between beginning and more advanced students (14, 20).

Respondents who were religious tended to view alcoholism as a moral problem and less as a psychological and physical-genetic problem, but they also tended to see it as a medical illness, unlike individuals who did not consider religion important to them.

Course of Study. An examination of Table 2 shows that there is a significant difference between the courses of study and all attitude scales with the exception of social rejection. Scores on the Psychological Etiology scale were highest among nurses and lowest among law students ($F = 4.4, 6 \text{ df}, p < .001$). The concept that alcoholism is the result of physical-genetic problems was rated highest by nurses and police cadets and lowest by medical and seminary students ($F = 5.1, 6 \text{ df}, p < .001$). The supposition that alcoholism is a medical illness was highest among police cadets and lowest among social work and applied psychology students ($F = 7.0, 6 \text{ df}, p < .001$). Social work students had the most humanistic view toward alcoholics and police cadets had the least ($F = 7.9, 6 \text{ df}, p < .001$). Police students and seminarians had the highest scores on Moral Weakness and social work-psychology students had the least ($F = 8.0, 6 \text{ df}, p < .001$).

Nurses had the highest scores on the belief that alcoholism was the result of psychological and physical-genetic problems. These results agree with the results of a study by Lemos and Moran (21) which also reported that nurses, compared with psychiatrists, were more likely to view alcoholism as a psychological and physical illness. Another study, by Ferneau and Morton (39), reported that nurses indicated that alcoholism was an illness more strongly than the norm.

Social work-psychology students in this study had the lowest scores on the Medical Illness and Moral Weakness scales and the highest on the Humanism scale. These results appear to agree with some other studies. Pittman and Sterne (28) found that social workers were least moralistic, followed by physicians, both of whom were less moralistic than nurses or clergy. Bailey (27) also indicated low moralistic feelings by social workers.

The medical students were least likely to view alcoholism as a physical-genetic problem; a study by Wolf et al. (40) also indicated that physicians tended not to view alcoholics as having a physical illness. Gray et al. (41) and Mendelson et al. (16) found that physicians were not apt to have humanistic attitudes toward alcoholics. In contrast, Dorsch and Talley (14) reported that physicians were more likely to view alcoholism as a disease, in

comparison with clergy, lawyers, and professionals in human-service fields. Sowa and Cutter (17), in a study of various helping professionals, indicated that physicians and social workers had more negative attitudes toward alcoholics compared with nurses and clergy.

The police and seminary students in the present study tended to view alcoholics as morally weak and had the least humanistic feelings toward them. Pittman and Sterne (28) and Dorsch and Talley (14) also found that clergy, compared with other helping professionals, had more moralistic attitudes toward alcoholics. McKay et al. (12) reported that police officers, along with counselors, social workers and physicians, associated undesirable characteristics with alcoholics.

SUMMARY AND CONCLUSIONS

Most of the human-service students surveyed drank alcoholic beverages; however, they consumed less alcohol and more of them tended to be light to moderate drinkers in comparison with other general student populations and adults in studies accomplished in Australia. Law students, men, individuals who did not consider religion important and students in their last year of study tended to drink more than respondents in the other groups. These results concur with those of other studies which have indicated that sex, religious factors and year in school affect drinking patterns.

As to attitudes toward alcoholism and alcoholics, police and seminary students, men first-year students, and students who regarded religion as important had more moralistic and negative attitudes toward alcoholics. On the other hand, social work-psychology students, women students, those in the last year of their course and individuals who did not consider religion to be important had more positive and humanistic attitudes toward alcoholics. Nurses, women and nonreligious students were more likely to believe that alcoholism is caused by psychological or physical illness, while social work-psychology students were not.

These results are similar to some studies conducted in other English-speaking countries on attitudes toward alcoholism with regard to profession, sex, year in school, and religious variables and suggest transcultural relevance.

The results of the present study suggest that since law and police students appeared to be the most heavily drinking groups an effort needs to be made to introduce more information about alcohol and

alcoholism into their curriculum. Similarly, since police cadets and seminary students were more apt to have negative and moralistic attitudes toward alcoholics, information about the nature of alcoholism should be included in their training.

In view of the different patterns of drinking and varying attitudes toward alcoholism among this group of human-service students, additional studies should be conducted to determine what factors might be influencing these differences. Further studies should be carried out in other countries, particularly non-English-speaking countries, with human-service professionals and students to determine, in depth, if the differences in attitudes toward alcoholism and drinking patterns are cross-cultural in nature.

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