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# THE DRUG TAKING PATTERNS OF NURSING, MEDICAL, AND PHARMACY STUDENTS IN BRISBANE, AUSTRALIA

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Paper presented: *National Council on Alcoholism, Conference*, (Nursing Section), New Orleans, April 10, 1981

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## ABSTRACT

Medical, nursing and pharmacy students work with drugs on a daily basis. However, little information as to their substance use is known in Australia. A survey of 791 first- and final-year medical, nursing, and pharmacy students to determine their alcohol and drug use patterns was carried out during February to April, 1980 at Queensland University. This sample was part of a larger study of alcohol and drug-taking behaviors and attitudes towards alcoholics and alcoholism of pre-professional students in many helping professional fields. Another purpose of the overall study was to test the reliability of the instrument. The results indicated that about 89% currently drank (at least once during past year) and 70% were light drinkers. Around 88% drank coffee or tea, 85% used non-prescription analgesics, 32% used tobacco, 25% antihistamines, 9% marijuana, 9% sedatives, 6% tranquilizer. Fewer than 3% used hallucinogens, cocaine or opiates during the previous year. Reliability of the instrument was calculated by using the Pearson product-moment correlation. The test-retest reliability of the quantity and frequency of substance usage ranged from 0.62 to 0.95, with a mean of 0.72.

## INTRODUCTION

Individuals in helping professions such as nurses, physicians and pharmacists have a high probability of treating the drug- and alcohol-dependent person, teaching about drug or alcohol abuse, or being in the position to change or uphold the existing drug laws. Also it has been suggested that there is a high potential for drug and alcohol abuse among some of nurses, physicians, and pharmacists. Few studies in Australia have examined the drug-taking behaviors of those individuals most likely to come into contact with drug users on a professional basis either as students or as acting professionals. A purpose of this study was to determine the drug behavior of these students. Another purpose was to test the reliability of the instrument. This present report forms part of a larger study of alcohol and drug-taking behaviors and attitudes towards alcoholics and alcoholism of pre-professional students (Engs, 1980).

## METHODS

### Sample

All first- and final-year students from nursing, medical, and pharmacy schools in large lecture classes, at Queensland University were asked to participate in the study. Before administration of the questionnaire, the purpose of the study, procedures used to safeguard students' anonymity, and the fact that participation was voluntary were discussed. From the total possible number of medical, nursing, and pharmacy students, 32 individuals either did not wish to participate in the study or returned questionnaires with most of the data missing. This percentage ranged from 4% for medical and 9% for the pharmacy and nursing students. The final sample included 791 students, of which 431 were medical, 213 nursing, and 147 pharmacy students.

### The Questionnaire

The questionnaire was compiled on the basis of World Health Organization recommendations for standardization in research on drug and alcohol behavior. Demographic information, problems related to drinking, and intake of various alcoholic beverages were adapted from the *Student Alcohol Questionnaire*. (Engs 1977; WHO 1976).

#### 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 education 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 *Statistical Package for the Social Sciences* (Nie, 1975) program was used to derive  $r$ ,  $t$ ,  $F$ , and  $X^2$  statistics to determine the reliability of the instrument and potential differences between demographic variables and the use of various substances.

#### *Drinking Patterns Calculations*

The quantification of alcohol consumption was adapted from techniques developed by Khavari and Farber (1978). Each respondent was asked to report average frequency of drinking and the usual amount consumed per occasion during the past year. Grams of absolute alcohol, whether in beer, wine or distilled spirits, were calculated for each respondent on a daily basis. These were based on the standard amount of alcohol in beer, wine and distilled spirits suggested by the beverage industry and other studies in Australia (Healey 1978; ABS 1977; Clapham, 1978). 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" or "shot" (30 ml) of distilled spirits to contain 9.2 g of absolute alcohol.

To determine the average amount of alcohol consumed per day, the frequency of use was assigned a "loading value." 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. 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 (1976) recommendations, 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).

#### *Drugs Use Calculations*

To assess the amount of caffeine in coffee and tea, cigarettes, over-the-counter pain medication and joints of marijuana, each respondent was asked to report his/her usual frequency of use for the various substances and the usual amount consumed per occasion during the past year. The milligrams of caffeine from coffee and tea, and the number of pain pills, cigarettes and joints of marijuana were calculated for each person for the usual amount consumed per occasion

To determine the average amount of any substance consumed per day, the frequency-of-use responses were assigned "loading values" from 365 for those individuals who reported that they consumed the product every day, to zero for those who had not used the substance during the past year. The loading value was then multiplied by the quantity of the substance consumed and divided by 365 to obtain the amount consumed on a daily basis.

The factors used in calculating the amount of substance 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.

## RESULTS

### **Alcohol**

The results reveal that 88.7% of students currently drink and consumed an average of 12.5 grams of absolute alcohol per day which classifies the total group as light drinkers. A significant difference ( $p < .05$ ) was found between the three groups in terms of consumption patterns. Nursing students consumed 9.4 compared to pharmacy students who consumed 15.1 grams per day. Over 70% of the sample were light drinkers consuming under 20 grams of absolute alcohol per day and under 4% were heavy or at risk drinkers (see Table 1 and 2).

### Other Drugs and Tobacco

About 31.5% of the total sample *smoked cigarettes* on a daily basis. A significant difference was found between the groups. Almost twice as many nursing students (43%) smoked compared to medical students (23%) (Table 2 and 3). However, there was little difference between the groups in terms of the number of cigarettes consumed per day. In terms of *analgesic* 83.8 % of students consumed pain medication. A significant difference was found in the mean number of pills per year between medical and nursing students which was 39.7 and 47.1 respectively. More nursing students consumed tranquilizers compared the other two groups.

A significant difference was found with coffee consumption with nursing students consuming about 100mg more a day compared to medical or pharmacy students. However, there was no difference between the groups in terms of percent who consumed caffeine daily.

### SUMMARY

All three groups of students appear to be light drinkers with little risk of current alcohol problems. Nursing students appear to have smoke more frequently and have a higher intake of cigarettes, analgesic and caffeine compared to the other two groups. This could be an indication of more stress on their part and could have future potentiality for other problems. Further research needs to explore this issue.

**TABLE 1: Mean ( $\pm$  SD) Grams of Absolute Alcohol Consumed per Day and Drinking Classification of the Students by Major in Percent**

	N	Alcohol Consumption (G Per Day)	None	Light (0-20g)	Moderate (20-39g)	Heavy (40-59g)	Moderate- Heavy (60-79g)	Very Heavy (80+g)
<b>Major</b>								
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	0.0
Pharmacy	147	15.1 $\pm$ 19.3	5.4	70.1	13.6	7.5	2.7	0.7

+p < .05

**TABLE 2: Percent of students by major who consider themselves "current users" (more than once a year) during the 12 months preceding the study of various drugs.**

	All Students (n=791) %	Medical (n= 431) %	Nursing (n = 213) %	Pharmacy (n = 147) %
Alcohol+	88.7	84.1	89.2	91.1
Analgesics+	83.8	83.2	83.5	90.5
Caffeine	88.5	89.2	86.8	89.1
Tobacco*	30.6	23.1	43.2	34.7
Marijuana	8.3	7.5	6.1	11.6
Sedatives	8.5	6.6	11.2	8.9
Tranquilizers+	5.7	3.7	8.0	4.1
Hallucinogens	1.5	2.0	0.0	1.4
Cocaine	0.0	0.2	0.0	0.0
Opiates	0.5	0.6	0.0	0.0

\*p < .001 +p < .05

**TABLE 3: Comparison of Number of Analgesics Pills Per Year, Mean Grams of Caffeine and Number of Cigarettes Per Day of Students by Major**

Major	n	Analgesics+		Caffeine+		Tobacco	
		X	S.D.	X	S.D.	X	S.D.
Medical	431	39.7	(149)	260	(240)	6.5	(7.1)
Nursing	213	47.1	(108)	356	(341)	7.1	(8.0)
Pharmacy	147	42.2	(55)	263	(271)	5.9	(7.6)

+ p < .05

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