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This document is part of a collection that serves two purposes. First, it is a digital archive for a sampling of unpublished documents, presentations, questionnaires and limited publications resulting from over forty years of research. Second, it is a public archive for data on college student drinking patterns on the national and international level collected for over 20 years. Research topics by Dr. Engs have included the exploration of hypotheses concerning the determinants of behaviors such as student drinking patterns; models that have examine the etiology of cycles of prohibition and temperance movements, origins of western European drinking cultures (attitudes and behaviors concerning alcohol) from antiquity, eugenics, Progressive Era, and other social reform movements with moral overtones-Clean Living Movements; biographies of health and social reformers including Upton Sinclair; and oral histories of elderly monks.

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ALCOHOL, TOBACCO AND MARIJUANA USE PATTERNS AMONG SCOTTISH HIGHER EDUCATION STUDENTS*

Paper presented: Kettil-Bruun Epidemiology meeting, Edinburgh, Scotland, June 1996

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ABSTRACT

Purpose: Limited information about recreational drug use over the post-secondary experience, particularly in Scotland are found. Thus the purpose of this study was to investigate selected socio-demographics of alcohol, tobacco and marijuana use in post-secondary helping profession students in Scotland.

Method: The *Queensland Alcohol and Drug Study Questionnaire* modified for the UK was completed by helping profession students from 22 departments at universities and colleges in five Scottish cities.

Results: The sample consisted of 949 males and 3117 female post-secondary students. As found in other studies, a significantly ($p < .001$) higher percent of males consumed alcohol. Males were more likely to smoke and use marijuana, however, there was no difference in the quantity of tobacco consumed. For both males and females, the prevalence of alcohol and marijuana was highest two or three years before the maximum use of tobacco (students over 24 years of age). Students under 24 years of age were more likely to consume alcohol and marijuana. Older students and those from the Midlands were more likely to consume tobacco. There was no difference between the regions in Scotland concerning alcohol or marijuana use.

Conclusions: It was concluded that the results of this study supports other investigations in the UK conducted among young adults.

INTRODUCTION

Although there have been general population studies in Scotland concerning substance use, few have examined young adult higher education students. There is no specific Governmental or other periodical survey which provides prevalence data concerning smoking, drinking and marijuana consumption for this group. Therefore, the purpose of this study was to survey post-secondary students recreational drug use.

* Data collection for this project was accomplished while the first author was on sabbatical leave at the Alcohol Research Group, University of Edinburgh, Scotland, Autumn 1994. This paper is part of a series of presentations and papers concerning this data base. The study was funded by Indiana University.

Most studies suggest that males are more likely to use a variety of substances compared to females. In Great Britain by age 16, 90% of youngsters will have consumed an alcoholic drink (Bagnall, 1988; Plant, et al, 1990; Marsh, et al. 1986). This is also true for Scottish teenagers (Plant and Foster, 1991; Bagnall, 1991). In the UK as a whole, the *General Household Study* (Thomas, et al., 1993) found alcohol is the most commonly used recreational substance with 93% of males and 84% females in Scotland consuming alcohol at least occasionally. Males in the 16-24 year old group consumed more than twice the units of alcohol compared to females (19.1 vs 7.3 per week). For Scotland this survey reported the mean drinks consumed for all males were 16.9 per week compared to 4.6 for females. After 24 years of age there is a decline in alcohol use.

A few studies with post-secondary students have been conducted in the UK. Ghodse and Howse (1994) surveyed students at 13 Medical schools in England, Scotland and Wales concerning tobacco, alcohol and other drug use. They found that 10% of students were current smokers. A study by Mott (1989) suggested that 19% of those between age twenty and twenty-four have used cannabis. Ghodse and Howse (1994) found 35% of the sample had used cannabis at some point in their lives.

Engs and Rendell's (1987) study of Nursing students in the Tayside region of Scotland found about 87% consumed alcohol, 36% tobacco and 5% marijuana. Golding and Cornish, (1987) in a study of Medical and non-Medical students at a northern English university, found male Medical students consumed more alcohol compared to female Medical students (6.3 vs. 2.8 units of alcohol per week). They also consumed more cigarettes and cannabis. In addition, the Medical students were less likely to smoke, consumed less alcohol, and to have used cannabis compared to other students.

A study examining students at several UK universities, (Ashton and Kamali, 1995) found males consumed more alcohol and cannabis compared to females. Males consumed 15.3 compared to 8.9 units per week of alcohol. However, the reported prevalence of current smoking at least once a week was higher for women (30.3%) compared to men (11.7%).

Finally, there is a common conception among some, that there are variations in drinking patterns among people from different regions of Scotland. As part of tourist guide myth, "highlanders" are often mentioned as heavy drinkers right along with "Nessie" sightings.

METHODS

Sample

The heads of department at major universities and colleges in Aberdeen, Dundee, Glasgow, Edinburgh and Inverness which taught students in the helping professions, were contacted about participating in this study. Of the 28 departments which responded to an initial written inquiry, 22 agreed to participate in the study. It was requested that a class from each year of study, if possible, be sampled. Because of the divergence in types of curriculum this was not possible in all cases.

The size of classes ranged from about 15 to almost 300 depending upon the field of study and institution. A total of 4150 questionnaires were collected. Of this total number 85 were incomplete and thus eliminated leaving a sample of 4065 students. A limitation to this study is that this convenience sample may not be representative of all helping professional students in Scotland.

Questionnaire

For items asking for quantity and frequency of substance use, items from the Queensland Alcohol and Drug Study Questionnaire (Engs, 1980; Engs and Rendell, 1987) were used. The questionnaire was modified to include demographic variables pertinent to Scotland and is highly reliable. The Spearman-Brown reliability coefficient for unequal lengths was .78. The Guttman's split half technique revealed a reliability coefficient of .74, and the Cronbach's alpha revealed a coefficient of .70.

Calculations

Several methods for calculating the amount of alcohol consumed are in common use. They include calculating the mean grams or ounces of absolute alcohol or the mean drinks or units per week or per day. In self report studies, determining grams or ounces is often an imprecise calculation as it is based upon recall. Moreover, people tend to underestimate the amount they have consumed (Thomas, et al., 1993).

Therefore, in recent years it has become more common to calculate the mean number of drinks, or units, per week or day of all alcoholic beverages consumed (Engs, et al., 1990; Thomas, et al, 1993; Engs 1990; Engs and Aldo-Benson, 1995). Calculations for this method are based upon the 'rule of thumb' that an average glass of pub beer (12 ounces) is roughly equivalent to an average size glass of wine (5 ounces) or shot of spirits (one and half ounce) in terms of grams (approximately 13) of absolute alcohol (Thomas, et al, 1993).

For analyses the instrument assessed the usual frequency and quantity of beer, wine and spirits, cigarettes and marijuana consumed by student. The frequency response categories were assigned constant values so as to be able to calculate units per week (every day=7.0, at least once a week but not every day=3.5, at least once a month but less than once a week=0.5, more than once a year but less than once a month=0.12, once a year or less or not at all=0). To compute the drinks of alcohol, a mean score was calculated by multiplying the quantity by the recoded frequency weight for each beverage type and summing the three scores. For tobacco and marijuana the frequency values were multiplied by the quantity the student reported they usually consumed.

The SPSS (Norusis, 1990) program on the Indiana University UNIX computer was used for calculating the results in this study.

RESULTS

Of the total sample, 77% were females (3117) and 23% (949) male. The high percent of females in the sample is reflected of the high proportion of women found in the helping professions such as nursing, medicine, education, psychology. The mean age was 21.6; 72% were under 25 years of age. The total sample consumed a mean of 20 units per week (1 unit is about a half pint pub lager, beer, etc., glass wine, and pub measure of spirits) and 1.7 joints a week. A significant difference between males and females in beer and wine consumption was found, but not for spirits. Males consumed 15.0 units of beer, 3.8 units of wine and 8.1 units of spirits per week while females consumed 4.9, 4.6, 8.6 units of these beverages respectively.

Table 1 reveals a significant difference in alcohol consumption due to gender and age. No difference was found for region of Scotland in which the person was raised (See Table 1).

Table 2 reveals significant differences in smoking patterns due to gender and age. However, the differences in mean cigarette consumption was found for region of country only.

For marijuana there were differences for gender and age but not for region of country as

illustrated in Table 3. Table 4 reveals that a higher percent of males exhibited health, social and legal problems related to drinking. The one exception was “Forced sex/or were forced to engage in sex due to drinking.” A higher percent of females reported they were forced to engage in sex due to drinking.

CONCLUSIONS

The results of this study support other research which suggests males, those under age 25, are more likely to consume recreational substances. The exception is higher tobacco consumption which is more common in those over 25 years of age. This has also been found by others.

There was no difference in drinking or marijuana use patterns between the three regions of Scotland. The myth of the heavy drinking Highlander can not be supported. However, Midlanders did consume more tobacco a week compared to Highlanders.

Could it be suggested that Nessie sightings by Midlanders visiting Loch Ness are associated with the haze of tobacco smoke used to keep the midges away ? Perhaps more research needs to be accomplished in the investigation of this smoke and mirror - oops - dragon phenomena.

TABLE 1: Mean units of alcohol consumed per week and percent of Scottish helping professional students consuming a quantity-frequency range of units per week during the 1994 autumn term by selected demographic groups.

	\bar{X} Units	% in each consumption range					
		None	< 7	7-14	15-21	22-28	> 28
Gender:							
Males	27.0*	9.6	14.9	9.7	13.3	11.7	40.8*
Females	18.1	7.2	31.9	12.0	13.0	10.9	24.9
Age:							
Under 25	22.5*	7.7	23.6	9.8	13.5	11.9	33.5*
Over 25	14.3	7.6	39.2	15.8	11.9	9.0	16.5
Region of Scotland:							
Lowlands	20.4	6.2	28.0	12.6	12.8	11.0	29.4
Midlands	19.2	6.7	30.4	10.8	12.7	11.2	28.1
Highlands	20.6	7.4	30.1	11.4	11.4	10.8	29.0
Total:	20.2	7.7	27.9	11.5	13.1	11.1	28.6

* $p < .001$ + $p < .05$

TABLE 2: Mean cigarettes consumed per week and percent of Scottish helping professional students consuming a quantity-frequency range of joints per week during the 1994 autumn term by selected demographic groups.

	\bar{X} Cigarettes	% in each consumption range		
		None	< 140	> 140
Gender:				
Males	18.2	66.4	27.6	6.0*
Females	17.1	70.3	25.2	4.5
Age:				
Under 25	15.0	69.5	26.8	3.7*
Over 25	26.0	68.6	22.2	9.2
Region of Scotland:				
Lowlands	17.2+	70.3	25.1	4.6
Midlands	20.1	66.9	27.7	5.4
Highlands	11.1	75.0	19.9	5.1
Total:	20.2	69.9	25.3	4.8

* p < .001 + p < .05

TABLE 3: Mean joints of marijuana consumed per week and percent of Scottish helping professional students consuming a quantity-frequency range of joints per week during the 1994 autumn term by selected demographic groups.

	\bar{X} joints	% in each consumption range		
		None	< 1.7	> 1.7
Gender:				
Males	3.3*	62.6	19.9	17.5*
Females	1.3	78.2	15.0	6.7
Age:				
Under 25	2.0	70.4	18.9	10.7*
Over 25	0.9	88.8	6.8	4.4
Region of Scotland:				
Lowlands	2.0	75.2	14.7	10.1
Midlands	1.7	74.4	15.4	10.2
Highlands	0.5	81.3	13.6	5.1
Total:	1.7	75.5	14.8	9.7

* p < .001 + p < .05

Table 4: Chi-square results of percentage of male and female Scottish tertiary students who had consumed alcohol at least once during past 12 months and reported health-, social-, and driving-associated behaviours as a result of alcohol consumption.

	Males (N=768)	Females (N=2602)
Health		
Hangovers	81.5	75.9*
Nausea and Vomiting	57.4	50.7+
Thought might have a drinking problem	11.8	5.9*
Social		
Attended class after drinking	26.8	14.2*
Cut classes after drinking	24.0	13.7*
Missed classes due to hangover	35.0	27.0*
Criticized by someone you were dating for drinking too much	24.2	17.1*
Played drinking games	53.9	41.7*
Driving related		
Driving after drinking	6.6	2.4*
Drinking while driving	3.8	1.3*
Driving drunk	5.3	2.0*
Driving while intoxicated offense	0.3	0.1
Legal:		
Had trouble with the law because of drinking	7.6	1.1*
Got into fights after drinking	16.1	5.4*
Damaged property	21.9	4.7*
Forced sex/or were forced to engage in sex due to drinking	4.2	5.5+

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