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**ALCOHOL USE AND ASSOCIATED PROBLEMS:
AMERICAN VS CANADIAN UNIVERSITY STUDENTS**

Implications for public policy

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American and Canadian College Drinking.

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Canadian/ cross-cultural college students/ alcohol consumption/ alcohol abuse

INTRODUCTION

Over the past decade several studies have examined the drinking patterns and related problems of university and college students in various English speaking countries such as Australia (Engs, 1980), England (Anderson, 1984), Scotland (Engs & Rendell, 1987), Canada (Gliksman, Engs, & Smythe, 1989), and the United States (Engs & Hanson, 1985; 1988). Though some studies have examined the differences in drinking patterns of college students between adults in different countries (Simpura, 1981), only one study has been found which compared drinking patterns between cultures (Engs, Hanson & Isralowitz, 1988), and none between students in English speaking cultures in which the data were collected during the same academic year.

In many ways Canadians and Americans, who live in the North East Central portion of North America surrounding the Great Lakes, may be considered to be culturally similar in their living situations and lifestyles. They both speak English and their legal and political systems have their roots in Great Britain. They were settled early by immigrants largely from the British Isles and Europe with immigrants from other areas of the world arriving at later dates. They enjoy a relatively high standard of living. People on both sides of the border endure snowy, cold winters and enjoy warm, pleasant summers. The Great Lakes provide year-round recreation activities, many of which are associated with alcohol use. A sizeable group in both countries live in rural areas and take their livelihood from the land. On the other hand, there are large metropolitan areas which have individuals from a variety of ethnic groups and occupations in both countries.

Of course there are differences between the two countries. The legal drinking age in Canada is either 18 or 19 depending on the province, while in the United States it is uniformly 21 years of age (Addiction Research Foundation, 1985). Canadian university students typically enter university at 18 or 19 years of age and are generally older than American students. Canadians have the benefit of a national health insurance plan, operated by the provincial governments, whereas health insurance is only found for the poor or older Americans with working adults being insured by private insurance companies. This may have some impact on how residents of the two countries view health problems and their susceptibility to these problems. Also, Canada in terms of ethnicity is considered a "mosaic" with each ethnic group tending to be socially intact and maintaining its cultural identity. On the other hand, the United States is considered a "melting pot" with a sizeable proportion of individuals socially interacting and merging into the fabric of the American society. This distinction may have some effect on the drinking patterns of students, particularly if the cultural patterns of parents are maintained by the students, as suggested within the Canadian mosaic pattern.

A basic assumption of the study is that students who attend university generally do so within their state or province and for the most part reflect the customs and norms of their geographic region.

Certain consistent demographic characteristics associated with drinking patterns have been found among university students in several English speaking countries. Engs and Hanson's (1988; 1989) reviews of the literature have indicated that one of the most

consistent findings is that males tend to consume alcohol more frequently and in greater quantity than do females. Consistent with this is the finding that males experience more alcohol-related problems than do female students (Gliksman, 1988). In terms of other characteristics, such as year at university, the results have been more equivocal. In some cases, there is a trend for alcohol consumption to increase over the four years of university and in others for it to decrease over the years (Gibbs, 1982 cited in Brown, 1989), (e.g., Hanson, 1974; Girdano & Girdano, 1976), while still other studies show no differences across the years (e.g., Engs, 1977; Iutovich & Iutovich, 1982). Since these two demographic items appear to play important roles in drinking patterns, they need to be considered in any comparisons across cultures.

Thus the purpose of this study is to compare alcohol consumption and problems associated with alcohol use between students attending universities in Ontario, Canada and the North Central portion of the United States. Information from this study can be useful in exploring questions concerning differences and similarities between countries whose people speak the same language and which are geographically contiguous. Results can be used to begin to explore the effect of drinking age laws on the drinking patterns of university youth. Even the process of accomplishing a joint international study can be used as a model example of cooperative research.

METHOD

Sample

Canadian: The Canadian sample was composed of students attending four universities, representing different geographic regions of the province of Ontario. These included urban, suburban and rural locations. Each university was asked to randomly select by computer, the names and addresses of 4,000 full-time undergraduate students who were attending classes during the 1987-88 academic year. Equal samples of first, second, third, and fourth year students were selected at each site. Two universities complied with this request, and forwarded the lists to the authors. One small university requested that only 1,200 students be used, and the fourth university chose to send out the surveys directly. Reminders were made through ads in the student newspapers or through a drop-off reminder in students' campus mail boxes. A total of 4,911 students completed and returned usable questionnaires. Of these, 4,641 (94.4%) were classified as drinkers, based on their acknowledgement of some alcohol consumption in the past year.

American: The American sample consisted of students attending 15 universities from the North Central¹ portion of the United States (NIAAA, 1975) during the 1987-88 academic year. This North Central sample was selected from a larger sample of university students from every state in the United States. It was felt that students from this geographic location would most closely resemble the Ontario sample.

¹The North Central states in this sample include Minnesota, Wisconsin, Iowa, Missouri, Illinois, Indiana, Michigan, and Ohio.

The American sample is part of a larger ongoing study of drinking patterns and problems of students attending four-year colleges and universities in the United States for which data has been collected every three years since 1982 (Engs & Hanson, 1985; 1988). The institutions were initially selected as part of a quota sample which represented four-year institutions of higher education based on differences in financial support, numbers of students enrolled, and the size of the community, from every state. For each university, faculty in sociology, health or physical education, who teach survey type classes, which have a high probability of containing students from every academic major and class level, were contacted. They were asked to administer a self-report questionnaire to the students in the classroom and return the questionnaires to the researchers.

The resulting American sample from the North Central portion of the United States included 1,687 students with 1,584 students (93.9%) indicating they had had some alcohol at least once, during the past year.

In the Canadian sample, 37.5% of the students were male and 62.5% were female, while in the American sample 35.3% of the students were male. The average age of the Canadian sample was 22.39 and the average age of the American sample was 20.65. The average age in each class year for the Canadian sample was: freshmen=20.39; sophomores=21.35; juniors=22.58; seniors=23.38. For the American sample, the average for each year was: freshmen=18.99; sophomores=20.25; juniors=21.61; seniors=22.37. This age difference between the two countries is probably partially due to the fact that, at the time of testing, Ontario's secondary schools went to grade 13, meaning five years of

high school while American students enter university after four years of high school, and are hence at least a year younger.

Survey Instruments

The Student Alcohol Questionnaire (SAQ), developed by Engs (1975) was used for the American sample. The Canadian sample was tested with a questionnaire which included the Ontario Drug Use Survey Instrument (Smart et al., 1985), the 17 problems related to drinking from the SAQ, measures of alcohol consumption and general lifestyle questions. Both these questionnaires are anonymous pre-coded instruments which have met the criteria of the ethics and human subjects committees in either of the sponsoring institutions.

Alcohol Consumption

Based upon a method by Lemmens, Tan and Knibbe (1988), and adopted by Gliksman et al. (1989), the number of drinks consumed on a weekly basis were assessed using the following steps. Both instruments assessed the usual frequency and quantity of beer, wine and spirits consumed by students. In both cases, the frequency of consumption for each beverage type was quantified using a 5-point scale. These frequencies of use responses were assigned constant values, for individuals who reported they consumed the product, in the following manner: every day = 7; 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 = 0.02.

In terms of quantity, the Canadian survey asked for the actual number of drinks consumed for each beverage type on one occasion. However, the American survey quantified consumption into 5 categories. Using these 5 categories, in order to compare the two countries, data in both samples were recoded in the following manner: more than 6 drinks = 8; 5 to 6 drinks = 6; 3 to 4 drinks = 4; 1 to 2 drinks = 2; less than 1 drink = 0.5.

Finally, to establish the total number of drinks consumed on a weekly basis, a quantity/frequency score was computed by multiplying the recoded quantity by the recoded frequency weight for each of the three beverage types and adding the three products. Thus, for example, a beer drinker who reported drinking more than six drinks per occasion, and doing so at least once a week, but not every day, would have an estimated weekly consumption of beer of 28 drinks. Because he did not drink wine or spirits, this would be his weekly consumption. It is conceivable that this method may result in an over- or under- estimation of consumption. However, in the present case this issue is not of concern because the issue is a comparative one, and both samples have been subjected to the same potential sources of error.

Problems Associated With Drinking

Only students who reported drinking at least once a year were asked to report on problem behaviors associated with drinking. A series of 17 potential consequences of abusive drinking (Engs, 1977) were listed and students were asked if they had experienced them. If students indicated that they had experienced the problem at least once during

the past year, the item was given a value of 1. All problems with a value of 1 were added together to give a total problem score for each student.

Finally, to compare the Canadian with the American sample, total problem scores and weekly quantity-frequency scores were each analyzed by means of a 2 (Country) X 2 (Gender) X 4 (Year of University) analysis of variance. The calculations were made using SPSSX (1986) Version 2.0. For the purposes of this paper, only students who drink at least once a year will comprise the sample.

RESULTS

Alcohol Consumption

The results of the ANOVA revealed significant main effects for each of the independent variables, Country [$f(1,5840)=15.88$, $p<.001$], Gender [$f(1,4850)=323.94$, $p<.001$], and Year of University [$f(3,5840)=4.03$, $p<.01$]. There was also a significant interaction between Country and Year of University [$f(3,5840)=8.91$, $p<.001$].

The main effects revealed that students in the American sample reported consuming more drinks per week ($\bar{x}=14.05$) than the Canadian sample ($\bar{x}=12.31$). The Gender main effect showed that males ($\bar{x}=17.26$) drank more than females ($\bar{x}=10.14$). Finally, the main effect of Year of University showed that over the four years of university, consumption decreased (Year 1, $\bar{x}=13.61$; Year 2, $\bar{x}=13.04$; Year 3, $\bar{x}=12.69$; Year 4, $\bar{x}=11.78$).

The interaction of Country and Year of University, however, serves to qualify and explain the main effects for both Year of University and Country. Inspection of Figure 1

reveals that although there was a steady decrease in consumption in the Canadian sample from Year 1 to Year 4, there was a steady increase in the corresponding groups for the

Insert Figure 1 About Here

American sample. In other words, the main effect of Year of University reflects the dramatic ongoing decrease in the Canadian sample relative to the less dramatic rise in the American sample. At the same time, the significant effect of Country appears to be due to the differences in years 3 and 4 as opposed to consistent differences over time.

Problems Associated with Drinking

The ANOVA revealed significant main effects of Gender [$f(1,5609)=323.45, p<.001$] and Country [$f(1,5609)=200.05, p<.001$] and a significant interaction for Country and Year of University [$f(1,5609)=8.89, p<.001$].

Inspection of means for the significant main effects showed that males reported more problems ($\bar{x}=3.32$) than did females ($\bar{x}=2.13$), and that students from Canada, overall, experienced fewer problems associated with alcohol use ($\bar{x}=2.29$) compared to students from the North central states ($\bar{x}=3.31$).

Figure 2 reveals that the pattern of the means in the Country and Year interaction parallels the pattern for consumption in the interaction described previously. Problems in

Insert Figure 2 About Here

the Canadian sample declined slightly but steadily over the four years of university, while problems increased steadily in the American sample until the last year of college where they levelled off.

DISCUSSION

It was most interesting to find that the American sample not only consumed more alcohol on a weekly basis compared to the Canadian sample, but that there was an increase in alcohol intake over the four years of university among the American sample. This was in contrast to the Canadian sample which showed a steady decrease in weekly alcohol consumption over the years. Similarly, there was an increase in the number of problems related to drinking among the American sample corresponding to year of university, and a slight decrease in problems with higher years in the Canadian sample. Since one would normally expect greater problems with increasing consumption, the relationship between these two variables leads to greater confidence with the data.

These are most provocative results that may have several explanations and ramifications. It appears that the older the Canadian student, the less alcohol he or she is likely to consume, a pattern which appears to be opposite for American students. Ontario has a 19 year legal drinking age compared to 21 for the United States. Most of the American students in this sample begin college when it is illegal for them to drink and increase their drinking over the four years of university. Most of them reach the legal drinking age between their junior and senior years. On the other hand, most of the Canadian students in this sample are legal drinkers when they enter university or by the end of the first semester. Perhaps since there is no "thrill" associated with forbidden drinking, they begin to mature earlier out of heavy and abusive drinking problems.

Another possible explanation could be the fact that the Canadian culture is more likely to foster and teach an attitude of mature and responsible alcohol consumption compared to the American culture. In the United States over the past few years the focus on alcohol education for all underage youth has been on abstinence, the "Just say No" program. Also, there has been very little information concerning responsible alcohol consumption for those adults who chose to drink legally. Perhaps students in the American sample had little idea of what constituted mature and responsible drinking and exhibited increasing experimental drinking over their university experience. On the other hand, the educational philosophy of the Ontario high school system from which most of its university students come, has been one of responsible and moderate drinking. This difference in philosophy may be reflected in these differences between the two samples.

Though there was a change in the legal drinking age in the United States to 21 in July 1987, the majority, but not all of the states in this sample, had already mandated a higher drinking age several years before this date. This means that many of the junior and senior students in this sample, who drink more than their younger counterparts, may do so because they were already drinking when it was legal for them to do so at an earlier age (before the law was changed). They merely continued their pattern of drinking because they considered themselves to be "grandfathered in".

Another explanation for the greater alcohol consumption among the American students could be that they have more expendable income compared to the Canadian students, given the higher costs of alcohol in Canada, or that students from each side of

the border have different attitudes and expectations towards their university experiences, including alcohol consumption.

As numerous other studies in many cultures have indicated, males, in both countries in this study, consumed more alcohol on a weekly basis compared to females and reported more problems related to drinking compared to females.

In conclusion there have been as many questions as answers generated from this study. Do the results imply that it might be better to have a 19 year old legal drinking age in the United States as it may help students to reach more responsible drinking patterns at an earlier age? Do the results suggest that the province of Ontario has more practical and realistic alcohol programs for its high school students compared to the American North Central states found in the sample? These are difficult questions which are implied from the results without clear cut answers.

In view of the results, it is recommended that further cross-cultural research between similar communities, such as university students, be undertaken. These studies should use a longitudinal design which allows tracking of students through their university years and provides a more valid basis for estimating patterns than do cross-sectional designs. This is important so as to ascertain those factors which affect the patterns of consumption across the years in cultures which appear to be very similar in life status and geographic region.

REFERENCES

- ADDICTION RESEARCH FOUNDATION. Statistics on Alcohol and Other Drug Use in Canada and Other Countries. Toronto: Addiction Research Foundation, 1985.
- ANDERSON, P. Alcohol consumption of undergraduates at Oxford university. *Alcoholism* 19: 77 - 84, 1984.
- BROWN, J.L. Alcohol consumption among Kansas State University freshmen by probation and non-probation status. *J. Alc. Drug Ed.* 34 (No. 3): 14 - 21, 1989.
- ENGS, R.C. The Student Alcohol questionnaire. Bloomington, IN., 1975.
- ENGS, R.C. The drinking patterns and problems of college students. *J. Stud. Alcohol* 38 (No. 2): 2144 - 2156, 1977.
- ENGS, R.C. The drug-use patterns of helping-profession students in Brisbane, Australia. *Drug Alcohol Depend.* 6: 231 - 246, 1980.
- ENGS, R.C. and HANSON, D.J. Gender differences in drinking patterns and problems among college students: a review of the literature. *Alc. Drug Educ.* in press, 1989.
- ENGS, R.C. and HANSON, D.J. University students' drinking patterns and problems: examining the effects of raising the purchase age. *Public Hlth. Rep.* 103 (No. 6): 667 - 673, 1988.
- ENGS, R.C., HANSON, D.J. and ISRALOWITZ, R.E. Drinking problems among Jewish college students in the United States and Israel: an exploratory study. *J. School Psych.* 128 (No. 3): 415 - 417, 1988.
- ENGS, R.C. and HANSON, D. The drinking patterns and problems of college students: 1983. *J. Alc. Drug Educ.* 58: 276 - 278, 1985.
- ENGS, R.C. and RENDELL, K.H. Alcohol, tobacco, caffeine and other drug use among nursing students in the Tayside Region of Scotland: a comparison between first- and final-year students. *Health Edu. Res.* 2 (No. 4): 329 - 336, 1987.
- GIRDANO, D. and GIRDANO, D. College drug use: a five year study. *J. Amer. College Health Assoc.* 25: 117 - 120, December, 1976.
- GLIKSMAN, L. Consequences of alcohol use: behavior changes and problems during first year of university. *Int. J. Addict.* 23 (No. 12): 1281 - 1295, 1988.

GLIKSMAN, L., ENGS, R.C. and SMYTHE, C. The drinking, drug use and lifestyle patterns of Ontario's university students. Addiction Research Foundation: London, Ontario, 1989.

IUTCOVICH, J. and IUTCOVICH, M. Just for fun: alcohol and the college student. Chem. Depen.: Behav. Biomed. Issues 4 (No. 3): 167 - 185, 1982.

HANSON, D. Trends in drinking attitudes and behaviours among college students. J. Alc. Drug Use 22 (No. 3): 16 - 14, 1974.

LEMMENS, P., TAN, E.S. and KNIBBE, R. Comparison of indices of alcohol consumption: Issues of validity of self-reports. Paper presented at the 4th Annual Alcohol Epidemiology Symposium, Berkeley, June 5-11, 1988.

NIAAA GEOGRAPHIC DEFINITIONS. NIAAA Informa. Feature Serv. No. 10, 1, 1975.

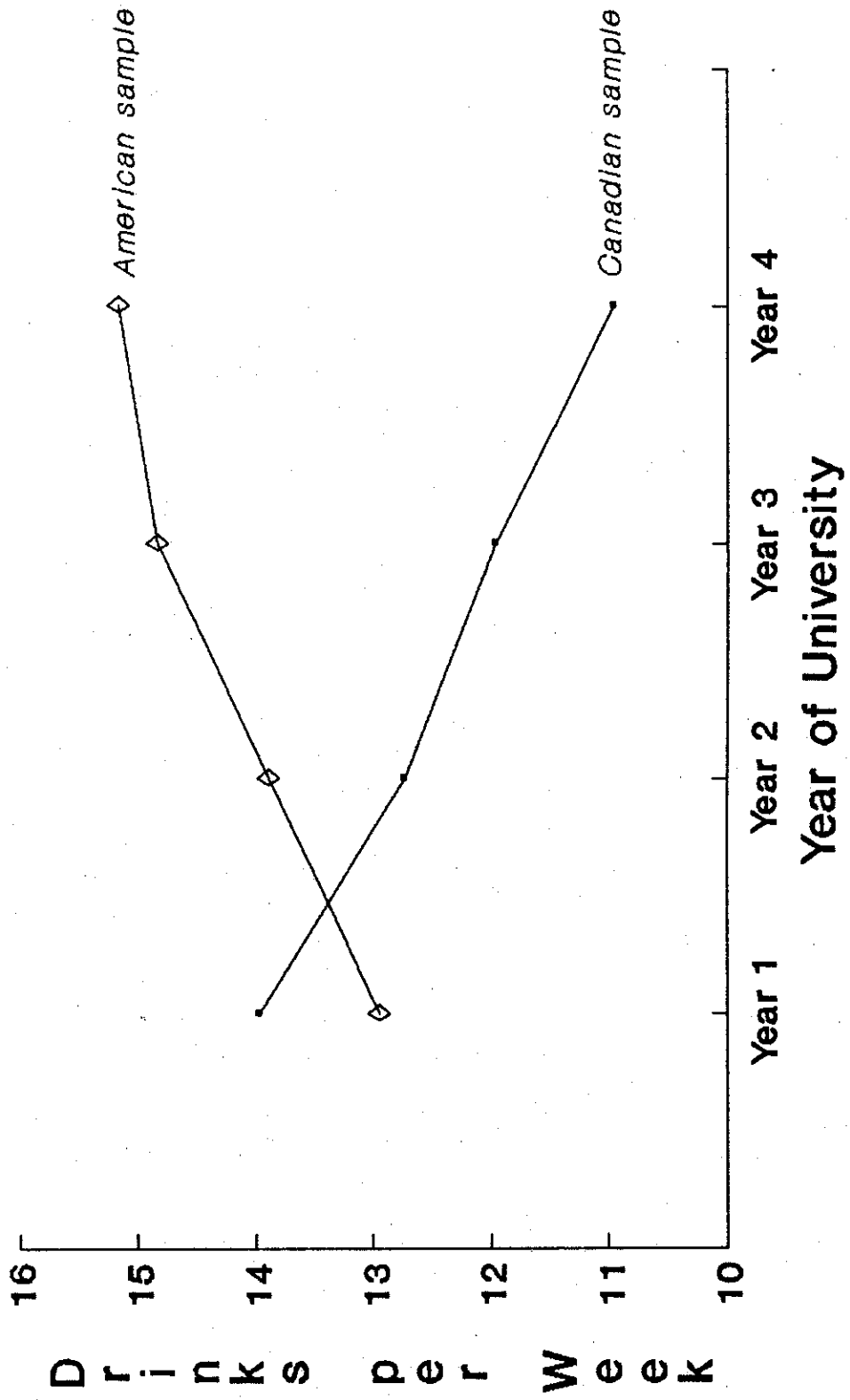
SIMPURA, J. Drinking habits in Finland and Scotland: a comparison of survey results. Int. J. Addict. 16: 1129 - 1141, 1981.

SMART, R.G., ADLAF, E.M. and GOODSTADT, M.S. Ontario Drug Use Survey Instrument. Addiction Research Foundation: Toronto, 1985.

SMART, R.G. and ADLAF, E.M. Alcohol and other drug use among Ontario students in 1987 and trends since 1977. Addiction Research Foundation: Toronto, 1987.

SPSSX, USER'S GUIDE. SPSSX Second ed. SPSSX Inc.: Chicago, IL., 1986.

**FIGURE 1. WEEKLY ALCOHOL CONSUMPTION
BY COUNTRY AND YEAR OF UNIVERSITY**



**FIGURE 2. ALCOHOL USE PROBLEMS
BY COUNTRY AND YEAR OF UNIVERSITY**

