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Perceptions About Alcohol Harm and Alcohol-control Strategies Among People With High Risk of Alcohol Consumption in Alberta, Canada and Queensland, Australia

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Objectives: To explore alcohol perceptions and their association hazardous alcohol use in the populations of Alberta, Canada and Queensland, Australia.

Methods: Data from 2500 participants of the 2013 Alberta Survey and the 2013 Queensland Social Survey was analyzed. Regression analyses were used to explore the association between alcohol perceptions and its association with hazardous alcohol use.

Results: Greater hazardous alcohol use was found in Queenslanders than Albertans ($p<0.001$). Overall, people with hazardous alcohol were less likely to believe that alcohol use contributes to health problems (odds ratio [OR], 0.46; 95% confidence interval [CI], 0.27 to 0.78; $p<0.01$) and to a higher risk of injuries (OR, 0.54; 95% CI, 0.33 to 0.90; $p<0.05$). Albertans with hazardous alcohol use were less likely to believe that alcohol contributes to health problems (OR, 0.48; 95% CI, 0.26 to 0.92; $p<0.05$) and were also less likely to choose a highly effective strategy as the best way for the government to reduce alcohol problems (OR, 0.63; 95% CI, 0.43 to 0.91; $p=0.01$). Queenslanders with hazardous alcohol use were less likely to believe that alcohol was a major contributor to injury (OR, 0.39; 95% CI, 0.20 to 0.77; $p<0.01$).

Conclusions: Our results suggest that people with hazardous alcohol use tend to underestimate the negative effect of alcohol consumption on health and its contribution to injuries. In addition, Albertans with hazardous alcohol use were less in favor of strategies considered highly effective to reduce alcohol harm, probably because they perceive them as a potential threat to their own alcohol consumption. These findings represent valuable sources of information for local health authorities and policymakers when designing suitable strategies to target alcohol-related problems.

Key words: Alcohol drinking, Perception, Injury, Alberta, Queensland

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INTRODUCTION

Alcohol is a significant contributor to the global burden of disease, and an important precursor to injury and violence [1]. Its use places a substantial social and economic burden on the population worldwide. According with the World Health Organization alcohol abuse is considered to be the third leading risk factor for poor health as well as a major risk factor for dis-

ability and premature death (5.1% disability adjusted life years). Approximately 5.9% of all deaths (3.3 million people) in 2012 were attributable to alcohol [1]. The estimated costs attributable to alcohol range from 1.3 to 3.3% of the gross domestic product in high and middle-income countries [2]. However, some evidence suggested that people who consume alcohol might tend to undermine its negative effect in order to justify their behavior [3] and minimized their discomforting experience from the Cognitive Dissonance. This last refers to the effect caused by the inconsistency between the knowledge of the hazardous effect of alcohol consumption and the contradictory desire to drink [4].

Evidence has shown that health, economic and social harms that derivate from the use of alcohol can be reduced throughout alcohol interventions and policies implemented by governments. During recent years a growing body of knowledge has shown that strategies focusing on price increases and stricter control on alcohol availability (i.e., hours of sales and density of alcohol outlets) are highly effective in reducing alcohol-related problems compared with other also commonly used strategies such as education campaigns, age restrictions and bans on alcohol advertising [5-7]. Overall, it is expected that strategies which go beyond providing information to mobilizing public opinion and support could be more effective in decreasing alcohol-related problems [7]. Therefore, the population's perspective in this regard may be a key component when choosing and implementing suitable alcohol-control strategies in a particular society. Previous studies completed in UK found that among general population greater enforcement of laws were strongly supported while support for pricing policies and restricting access to alcohol was more divided [8,9].

Based on the theoretical assumptions underpinning the strategies directed to control alcohol-related harm [5], it is expected that alcohol interventions and policies can be generally applied across societies. However, as advised in the *global strategy to reduce the harmful use of alcohol* proposed by the WHO [7], strategies directed to reduce the harm associated with alcohol use should be adapted according to national priorities and contexts. When exploring alcohol-control strategies across societies, Canada and Australia are high-income countries with a similar socioeconomic characteristics and political systems which make comparisons between them relevant. They are both democracies based on the Westminster system of government and have three tiers of government (local, state and national). In addition, both countries have implemented approaches controlling the physical availability and the affordability of alcohol consumption [10,11]. At the regional level, the province of Alberta in Canada and the state to Queensland in Australia have similar socioeconomic characteristics (i.e., population of around 4 million [12,13], an annual gross domestic product close to 290 million (local currency), as well as both agriculture and resource based economies) which make the study of alcohol consumption between them pertinent. In addition, both countries have tried to control alcohol-related harm through the implementation of similar alcohol policies and interventions [1,14,15]. At a local level, despite that the governments of Alberta (Canada) and Queensland (Australia) have invested resources to tackle alcohol-related problems, evidence has shown that alcohol consumption is still associated with a considerable number of negatives health outcomes including accidental deaths in those locations. In Alberta, toxicology testing for alcohol was performed on 66% of the accidental deaths occurred in 2009. A positive presence of alcohol at the time of death was found in 44% of those tested [16]. In addition, a report showed that 19.8% of the drivers involved in a fatal collision had consumed alcohol before the crash [17]. In Queensland 1143 (4.3%) deaths were attributed to alcohol use in 2010 [18].

Evidence has shown a tendency to minimize the negative feelings related to alcohol among alcohol consumers [3]. In addition, previous studies have explored the effectiveness of alcohol strategies and policies mainly from objective perspectives such as police records, health care use, vital statistics, etc. [19-26]. Nevertheless, to the best of our knowledge, the population beliefs about alcohol harm and the perception of the best strategies that should be used by the government to control alcohol-related problems have not been explored among people with hazardous alcohol use across countries using a homogeneous approach. We hypothesized that people with hazardous alcohol consumption might have similar perceptions towards alcohol-related policies across societies with similar socioeconomic characteristics. Therefore, this study aimed to explore alcohol perceptions and their association hazardous alcohol use in the populations of Alberta, Canada and Queensland, Australia.

METHODS

This study used data from the 2013 Alberta Survey, collected by the Population Research Laboratory (PRL) of the Depart-

ment of Sociology at the University of Alberta (UA) (Canada); and from the 2013 Queensland Social Survey (QSS13), administered by the PRL within the Institute for Health and Social Science Research at Central Queensland University (CQU) (Australia) [27]. Through cost-shared agreements, both surveys enable academic researchers, government departments, and non-profit organizations to explore a wide range of topics in a structured research framework and environment.

The Alberta Survey aimed for a total sample size of 1200 households across Alberta, with a minimum of 400 respondents in Metropolitan Edmonton, 400 in Metropolitan Calgary, and 400 from the remainder of the province (other Alberta). The QSS13 aimed for a minimum sample size of 1200, 800 or more from South-East Queensland and 400 from the Remainder of Queensland. The a priori estimated sample errors at the 95% confidence level (CI) were 2.8 and 2.7 for the entire samples of Alberta and Queensland, respectively.

The surveys were administrated by trained interviewers in Alberta (from June 18 to July 23, 2013) and in Queensland (from July 2 to August 4, 2013) through the Ci3 Computer-Assisted Telephone Interviewing (CATI) which is a PC-based system (Sawtooth Technologies, Northbrook, IL, USA) installed on a local network at the PRLs. A random selection approach was used to ensure that all respondents from the households across the province of Alberta and the state of Queensland had an equal chance to be contacted. For both surveys, samples were draw from the telephone database by using a computer program to select, with replacement, a simple random sample of telephone numbers. Duplicate telephone numbers were purged from the computer list. Within the household, one eligible person 18 years of age or older who, at the time of the surveys, was living in a dwelling unit was selected as responder. Additional algorithms were used in each survey to ensure an equal yet random selection of male and female participants.

The survey instruments consist of three components: 1) a standard introduction; 2) questions which reflected the specific interest of the university and the community researchers participating in the study (i.e., alcohol perception and consumption); and 3) demographic questions. The Research Ethic Board at the UA and the Human Ethics Research Review Panel at CQU (H13/06-120, QSS13) reviewed and approved the survey questions and data collection protocols.

Socio-demographic Characteristics Included in the Study

Characteristics including sex, age, marital status, level of education, religion, housing situation, employment status, income, number of children and adults living at home, and being native of the country studied (Canada/Australia) (Table 1).

Hazardous Alcohol Use

Patterns of alcohol consumption were assessed using the Alcohol use Disorder Identification Test (AUDIT) [28] in which the participants were asked about their alcohol ingestion (i.e., frequency, quantity) during the previous 30 days. Among people who reported consuming at least one drink of any alcoholic beverage during the past 30 days, further questions about alcohol consumption were formulated and recoded based on the AUDIT score as following:

a) Number of DAYS in which you had a least one drink of any alcohol beverage during the past 30 days. It was codified as 0=none; 1=1 day; 2=2 to 4 days; 3=5 to 15 days and 4=16 to 30 days.

b) On the days when you drank, number of DRINKS on average during the past 30 days? It was codified as 0=between 0 and 2 drinks; 1=between 3 and 4 drinks; 2=between 5 and 6 drinks; 3=between 7 and 9 drinks and 4=if ≥10 drinks.

c) Considering all types of alcoholic beverages, number of TIMES during the past 30 days you had 6 or more drinks on an occasion? It was codified as 0= none; 2=between 1 and 7 times; 3=between 8 and 12 times; 4=if ≥13 times.

Hazardous alcohol use was calculated adding the AUDIT scores as codified above (a+b+c). It was considered hazardous if the resulting score was ≥3 in females and ≥4 in males [27].

Alcohol perceptions: influence of alcohol on health problems and injuries, and effectiveness of strategies to control alcohol harm

Alcohol perceptions were assessed by asking participants: a) Do you believe that alcohol use contributes to health problems? Yes or no answer was requested; b) Do you believe alcohol use contributes to injuries? possible responses were no, (yes) less than 10%, (yes) between 10-30%, (yes) between 30-50% and (yes) more than 50%; c) Which do you think is the best way for the government to reduce alcohol problems?

Table 1. Description of the population included in the study

Variables		All (n=2500)	Alberta (n=1207)	Queensland (n=1293)	*p*-value
Sex	Male	50.6	49.3	51.9	0.19
Age (y)	Average	54.5	52.4	56.4	<0.001
	Standard deviation	16.1	16.4	15.7	
	Range	18-101	18-94	18-101	
Marital status	Never married (single)	13.1	14.6	11.7	<0.001
	Married	63.7	59.4	67.7	
	Common-law relationship/live-in partner	5.9	6.4	5.4	
	Divorced	7.3	8.8	6.0	
	Separated	2.0	2.2	1.9	
	Widowed	8.0	8.6	7.4	
Education levels (y)	0-7	1.0	0.4	1.5	<0.001
	8-13	39.4	28.2	50.0	
	14-16	32.1	37.9	26.7	
	≥17	27.4	33.5	21.8	
Religion	Protestant	38.4	29.1	47.0	<0.001
	Catholic	19.6	20.3	18.9	
	Other	9.4	18.3	1.2	
	No religion	32.6	32.2	32.9	
Presently own or rent your residence?	Own	84.5	83.5	85.4	0.19
Employment status	Employed	52.6	56.7	48.8	<0.001
	Not employed	12.2	9.0	15.1	
	Student	2.1	3.3	1.0	
	Retired	25.3	26.1	24.6	
	Disabled	7.1	3.7	10.3	
	Not specified	0.7	1.2	0.2	
Income (US dollar)	<25 000	13.1	8.4	18.5	<0.001
	25 000-49 999	15.5	12.5	18.9	
	50 000-74 999	14.7	16.2	13.1	
	75 000-99 000	12.3	13.3	11.1	
	100 000-124 999	14.6	15.7	13.5	
	≥125 000	29.8	33.9	24.9	
Children living in household	Yes	31.1	29.1	33.0	0.04
No. of adults living in household (including the participant)	1 (lives alone)	2.2	22.0	16.1	<0.001
	2	1.0	56.0	62.7	
	≥3	1.1	22.0	21.2	
Born in Canada/Australia	Yes	79.0	80.1	78.0	0.21

Values are presented as %.

Participants were asked to choose only one option from the following seven alcohol strategies commonly implemented by governments [5]: 1) bylaws to limit operation of liquor outlets, 2) tax alcohol beverages based on percentage of alcohol content, 3) bylaws to reduce the number of liquor outlets per square km, 4) education programs, 5) increase enforcement of alcohol laws prohibiting sales to minors, 6) media campaigns to educate about prevention and misuse of alcohol or 7) ban alcohol advertising on TV and other media. Based on existing evidence [6], we grouped the first three (1-3) strategies mentioned above as highly effective and the remaining four (4-7) as unremarkably effective.

Statistical Analysis

Descriptive statistics were used to present demographics, patterns of alcohol consumption and alcohol perceptions in the study populations of Alberta and Queensland. Percentages were used for categorical variables and means (standard deviations, SDs) for continuous variables. χ^2 tests or Students' *t*-test were used to analyze the differences in the distribution of the variables between the two populations. Crude and adjusted (i.e., sex, age, marital status, education, religion, employment status, income, living situation and being native or not of the country of study) logistic regression analyses were used to explore the association between hazardous alcohol use and alcohol perceptions.

Statistical significance was accepted at *p*-values <0.05. All analyses were performed using SPSS version 20.0 (IBM Corp., Armonk, NY, USA).

RESULTS

Descriptives

The final sample studied included 2500 participants (1207 Albertans and 1293 Queenslanders). The response rate for the 2013 Alberta survey was 20.9% and for the QSS13 was 41.2%. In both groups studied, there was an oversampling in the 55 and above age categories, and under sampling in under 35 age categories. Otherwise, the demographics of the participants reasonably approximated the general population.

Half of the population included in the study were males, the mean age of the whole study group was 54.5 years (SD 16.1). Albertans were significantly younger ($p<0.001$) and had a higher level of education than Queenslanders ($p<0.001$). In addition, a higher percentage of the participants from Alberta had no children living in the house ($p=0.04$) and were living alone ($p<0.001$) compared with participants from Queensland. The distribution of the marital status, employment status and income were also significantly different between both populations studied (Table 1).

Hazardous Alcohol Use

As reported in our previous study [27], 65% of Albertans and 68% of Queenslanders reported to have had at least one drink of any alcohol beverage during the past 30 days. Queenslanders reported having alcohol more days during the past 30 days ($p<0.001$), when drinking, drank more alcoholic beverages on average ($p<0.001$) and were more likely to have 6 or more drinks on a given occasion ($p<0.001$) compared with Albertans. Consequently, Queenslanders had a greater hazardous alcohol use than Albertans ($p<0.001$) (Table 2).

Alcohol perceptions in people with hazardous alcohol use

A large percentage (95%) of the population with hazardous alcohol use believed that alcohol use contributes to health problems. Though, this percentage was higher among Queenslanders ($p=0.003$) compared with Albertans (97% vs. 93%). Ninety four per cent of the participants from both groups believed that alcohol contributes to injuries. Nevertheless, Albertans

Table 2. Alcohol consumption and hazardous alcohol use

Variables		All (n=2500)	Alberta (n=1207)	Queensland (n=1293)	*p*-value
Had at least one drink of any alcoholic beverage during the past 30 days? (yes, %)		66.5	64.7	68.3	0.05
If yes for "has at least 1 drink of any alcoholic beverage during the past 30 days"					
1. No. of DAYS had at least one drink of any alcoholic beverage during the past 30 days?	Mean	10.3	7.7	12.6	
	SD	9.8	8.0	10.7	<0.001
	Range	1-30	1-30	1-30	
2. On the days when you drank, number of DRINKS on average during the past 30 days?	Mean	2.4	2.1	2.6	
	SD	2.3	2.1	2.5	<0.001
	Range	1-32	1-24	1-32	
3. Considering all types of alcoholic beverages, number of TIMES during the past 30 days you had 6 or more drinks on an occasion? (%)	Never	78.7	81.9	75.9	
	Once	8.1	8.4	7.8	<0.001
	2-4 times	8.2	6.9	9.4	
	≥5 times	5.0	2.8	6.9	
Hazardous alcohol use (yes, %)[1]		36.5	28.9	42.8	<0.001

SD, standard deviation.
[1]Calculated based on 1, 2, and 3. Please see Methods section for further explanation.

Table 3. Alcohol perceptions in people with hazardous alcohol use

Variables	Hazardous alcohol use			*p*-values
	All (n=913)	Alberta (n=355)	Queensland (n=558)	
Do you believe that alcohol use contributes to health problems? (yes)	95.3	92.7	96.9	0.003
Do you believe alcohol use contributes to injuries?				<0.001
No or I don't know	6.0	3.2	7.9	
Yes (%)				
<30 (low risk)	43.9	40.2	46.2	
30-50 (moderate risk)	29.7	33.8	27.1	
>50 (high risk)	20.4	22.8	18.8	
Which do you think is the best way for the government to reduce alcohol problems? (%)				
Highly effective/cost-effective strategies	28.8	19.8	34.3	<0.001
Bylaws to limit operation hours of liquor outlets	18.8	6.2	26.5	
Tax alcohol beverages based on percentage of alcohol content	4.9	6.2	4.2	
Bylaws to reduce number of liquor outlets per sq.km	5.0	7.4	3.6	
Unremarkably effective/cost-effective strategies	71.2	80.2	65.7	<0.001
Education programs	32.5	40.4	27.7	
Increase enforcement of alcohol sales to minors	16.1	12.0	18.6	
Media campaigns to educate about prevention and misuse of alcohol	14.7	21.9	10.2	
Ban alcohol advertisement on TV and other media	8.0	5.9	9.3	

Values are presented as %.

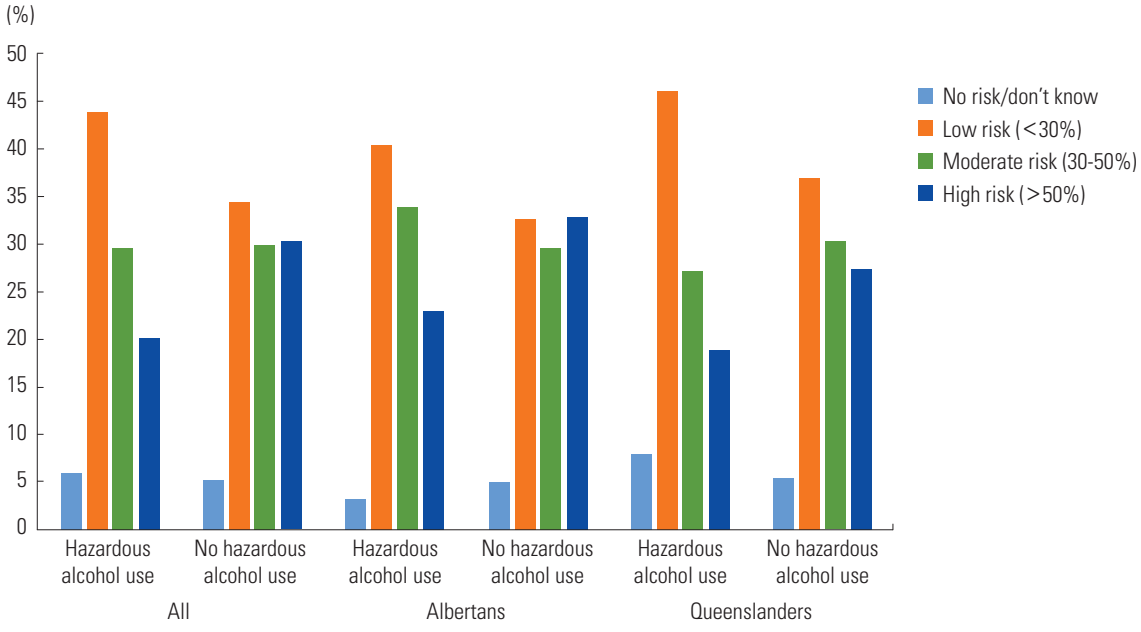

Figure 1. Perception about the association between risk of injuries and alcohol consumption, by hazardous alcohol use.

perceived a greater risk of injury associated with alcohol consumption (≥30%) compared with Queenslanders. Twenty nine per cent of the overall population selected one of the evidence-based highly effective strategies as the best way for government to reduce alcohol problems. However, this percentage was higher in Queenslanders (34.3%) than in Albertans (19.8%) (Table 3).

Association between hazardous alcohol use and alcohol perceptions

In general, people with hazardous alcohol use were less likely to believe that alcohol use contributes to health prob-

Table 4. Association between hazardous alcohol use and alcohol perceptions

Variables		Hazardous alcohol use (yes/no)[1]					
		All	*p*-value	Albertans	*p*-value	Queenslanders	*p*-value
Alcohol perceptions							
Crude model	Alcohol contributes to health problems	0.49 (0.31, 0.76)	<0.01	0.45 (0.26, 0.78)	<0.01	0.35 (0.15, 0.82)	0.02
Adjusted model[2]	Alcohol contributes to health problems	0.46 (0.27, 0.78)[3]	<0.01	0.48 (0.26, 0.92)	0.03	0.34 (0.11, 0.09)	0.07
Alcohol contributes to injuries							
Crude model	No/don't know	1.00 (reference)		1.00 (reference)		1.00 (reference)	
	Yes (%)						
	<30 (low risk)	1.09 (0.76, 1.58)	0.63	1.98 (0.99, 3.96)	0.05	0.87 (0.54, 1.38)	0.55
	30-50 (moderate risk)	0.85 (0.59, 1.24)	0.40	1.82 (0.90, 3.66)	0.09	0.62 (0.38, 0.99)	0.05
	>50 (high risk)	0.58 (0.39, 0.84)	<0.01	1.11 (0.54, 2.24)	0.78	0.48 (0.29, 0.77)	<0.01
Adjusted model[2]	No/don't know	1.00 (reference)		1.00 (reference)		1.00 (reference)	
	Yes (%)						
	<30 (low risk)	0.82 (0.51, 1.33)[3]	0.42	1.31 (0.55, 3.10)	0.54	0.62 (0.33, 1.18)	0.15
	30-50 (moderate risk)	0.73 (0.45, 1.20)[3]	0.21	1.44 (0.61, 3.44)	0.41	0.45 (0.24, 0.87)	0.02
	>50 (high risk)	0.54 (0.33, 0.90)[3]	0.02	0.96 (0.40, 2.30)	0.93	0.39 (0.20, 0.77)	<0.01
Strategies to control alcohol consumption							
Crude model	Highly effective/cost-effective strategies	0.89 (0.74, 1.06)	0.19	0.60 (0.44, 0.82)	<0.01	1.02 (0.80, 1.29)	0.88
Adjusted model[2]	Highly effective/cost-effective strategies	0.86 (0.68, 1.08)[3]	0.18	0.63 (0.43, 0.91)	0.01	1.06 (0.77, 1.44)	0.73

Values are presented as odds ratio (95% confidence interval).
[1]Logistic regression analyses using hazardous alcohol use as outcome variable.
[2]Adjusted for sex, age, marital status, education, religion, employment status, income, living situation and being native or not of the country of study.
[3]Adjusted for country of study.

lems (OR, 0.46; 95% CI, 0.27 to 0.78; $p<0.01$) and to higher risk of injuries (OR, 0.54; 95% CI, 0.33 to 0.90; $p<0.05$) (Figure 1) (Table 4). When looking at each population independently, after adjustment for socio-demographic characteristics, Albertans with hazardous alcohol use were less likely to believe that alcohol consumption associates with health problems (OR, 0.48; 95% CI, 0.26 to 0.92; $p<0.05$), and less likely to choose highly effective strategies as the best way for the government to reduce alcohol problems (OR, 0.63; 95% CI, 0.43 to 0.91; $p=0.01$); while Queenslanders with hazardous alcohol use were less likely to attribute higher risk of injuries to the use of alcohol (OR, 0.39; 95% CI, 0.20 to 0.77; $p<0.01$) (Table 4).

DISCUSSION

Our results suggest that people with hazardous alcohol use tend to attribute less negative effects to the use of alcohol compared with their counterparts without hazardous alcohol use. In addition, Albertans with hazardous alcohol use were less likely to select one of the evidence-based highly effective strategies as the best way for the government to control alcohol-related problems. To the best of our knowledge this is the first study which uses a common approach to explore alcohol perceptions and their association with hazardous alcohol use in two populations from different countries. The population's perspective might provide local health authorities and policy-makers with key information for the development of suitable approaches directed to control alcohol-related problems.

Alcohol use has been strongly associated with diverse negative effects in people's health [29] and with the occurrence of all types of unintentional injuries including motor vehicle crashes [30]. From this survey it is clear that almost all the population studied understand the potential hazards linked to alcohol use. Nevertheless, results of the present study suggest that people with hazardous alcohol use consumption perceive lower risks from alcohol use in both locations. In particular, Albertans were more likely to express that alcohol does not contribute to health problems and Queenslanders were less likely to attribute a high risk of injuries to alcohol use. Education strategies, which are among the most common approaches implemented by the governments, may have failed to reach the population at greatest risk of alcohol consumption [27]. In

this case, strategies directed to increase awareness of alcohol-related hazards in this specific group should be implemented with emphasis in the adverse health outcomes in Albertan and in the occurrence of injuries in Queensland. Education has been proven to be successful in raising awareness and may also set a positive atmosphere for the implementation of interventions, however, evidence has shown that alcohol use remains largely unaffected through this strategy [7,31,32]. On the other hand, it is possible that people with hazardous alcohol use tend to undermine the hazardous effects of alcohol as defense mechanism associated with their own addiction [33], to justify their behavior and/or minimize their discomforting experience from the Cognitive Dissonance [3,4], in which a different approach will be needed. Further studies should aim to establish the causes and consequences of these findings, and potential interventions directed to increase awareness of alcohol-related hazards among people with hazardous alcohol use need to be explored.

Albertans with hazardous alcohol use were less likely to select one of the evidence-based highly effective strategies as the best way for the government to control alcohol related problems compared with Albertans without hazardous alcohol use. No difference in the preference of highly or unremarkably effective strategies was found among Queenslanders with or without hazardous alcohol use. There is strong evidence available supporting the effectiveness of price increase and availability restriction as strategies to control alcohol-related harm [1,5,32]. Population support for pricing policies and restricting access to alcohol was divided [7,8]. However, to the best of our knowledge the perspective of the drinker population about them have not been elucidated. The perception of the population may represent a valuable source of information for health authorities and policymakers when choosing and implementing suitable alcohol-control strategies in a particular society [8]. People with hazardous alcohol use may want to avoid barriers to access alcohol and therefore suggest the implementation of less invasive strategies, which have shown to be unremarkably effective controlling alcohol-related problems.

The low response rate of the survey might be considered a limitation of the present study. Nevertheless, consistent efforts were used to reach the sample size calculated following the criteria established. Unfortunately, response rates for general households' surveys have been on the decline in recent decades [34] probably due an increase of telephone solicitation for fundraising, market research or sales. In addition, in both populations, there was an oversampling in the 55 and above age categories and under sampling in the under 35 age categories compared with the total population of Alberta and Queensland. Gaining adequate participation or younger responders when conducting CATI surveys using randomly generated landline telephone samples has become more difficult due to the fact that this demographic groups has been particularly affected by the shifting patterns towards preference for exclusive use of mobile phones.

The homogenous design and implementation of data collection in both locations constitute a key strength of the present research. The 2013 Alberta Survey and the QSS13 enable to explore a wide range of topics in a structured research framework and environment. In this case, this valuable source of data allowed researchers from the UA and James Cook University to explore hazardous alcohol use and alcohol-related perceptions in Alberta and Queensland.

When using the samples from the populations of Alberta, Canada and Queensland, Australia, results from this study suggest that alcohol perceptions varies among people with and without hazardous alcohol use and between societies. Furthermore, the population's perspective presented in this study can be potentially helpful to tackle alcohol-related problems in Alberta and Queensland.

Our results suggest that people with hazardous alcohol use tend to underestimate the negative effect of alcohol use on health and its contribution to injuries. In addition, Albertans with hazardous alcohol use were less in favor of strategies considered highly effective to reduce alcohol harm, probably because they perceive them as potential threat to their own alcohol consumption. These findings represent valuable sources of information for local health authorities and policymakers when designing suitable strategies to target alcohol-related problems.

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CONFLICT OF INTEREST

The authors have no conflicts of interest associated with the material presented in this paper.

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