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Survey Inconsistencies and Interpretation of Alcohol Questions in Young Argentinian Adults

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Keywords

Alcohol drinking; surveys and questionnaires; self report; data interpretation, statistical; adolescent

Abstract

Aim: Alcohol consumption and related problems exhibit variations during early vs. late adulthood, seemingly without intervention. A proposed thesis is that inexperience in alcohol may lead to inconsistencies and misinterpretation of alcohol questions in youth. We aimed to analyse the inconsistencies and the perception of alcohol consumption and alcohol-related problems questions by comparing those with 25 years or less and more than 25 years, and by sex. **Subjects and Methods:** Inconsistencies in alcohol survey reports were assessed with a cluster sampling of N = 1030. In contrast, we evaluated the interpretation of inconsistent responses with a purposive sample of N = 51 university students between 18 and 30 years. Bivariate analysis for inconsistencies and agreement measures for misinterpretation categories were performed. **Results:** Quantity-frequency inconsistencies had a low prevalence (less than 3 %) and no differences among groups. There were differences in hazardous use, tolerance, larger or longer use than intended, withdrawal, drinking despite an underlying illness, and role impairment. Sex differences were detected among larger or longer use than intended, much time spent using, reducing activities to use, interpersonal problems, and role impairment. Nearly 18 % understood that not drinking alcohol was to drink little frequency or quantity. Half of them had incorrect interpretations of alcohol-related problems. Only those under 25 misinterpreted the tolerance criteria. **Conclusion:** We observed that young people use other people's experiences to answer alcohol use and related problems. When they use their own experience, the answers might be more accurate.

Introduction

Alcohol drinking has increasingly become a symbol of youth. Studies suggest more quantity and frequency of alcohol consumption and the concomitant rise in alcohol-related problems [1]. This trend seems to be changing in high-income countries [2]. But there is also another side to consider in this phenomenon: alcohol consumption spikes at about 20 years, and as fast as it grows, it reduces [3,4], seemingly without any intervention. One of the most sounding theories behind the change in alcohol consumption behaviour is the "maturing out" of alcohol consumption and the con-

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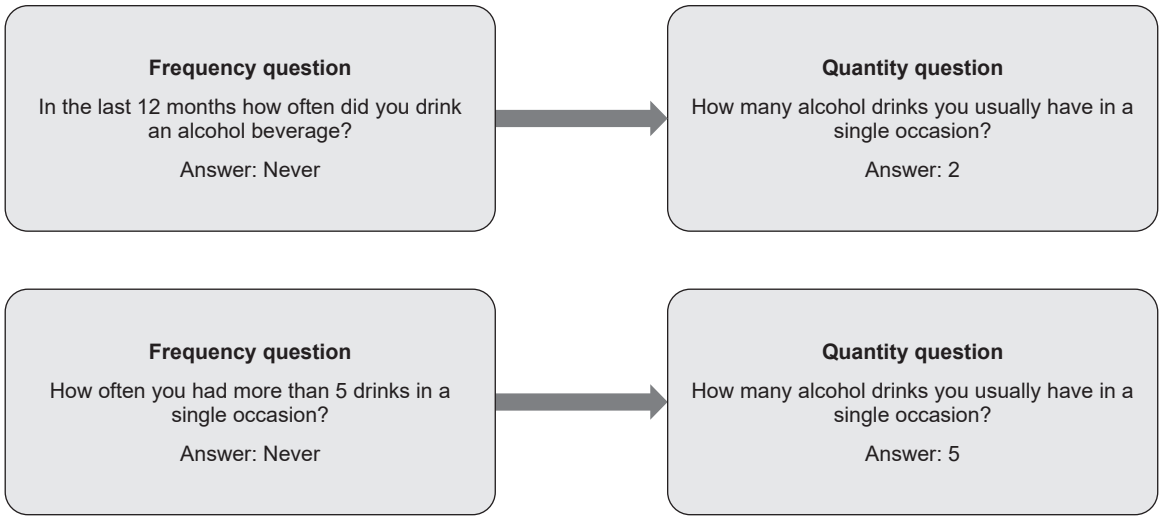

Figure 1. Examples of quantity-frequency and graduated frequency question inconsistencies

comitant alcohol-related problems [5]. Maturing out also includes the remission of past alcohol use disorders without professional help or natural recovery [6,7]. On the other hand, some studies have proposed that the inexperienced in alcohol consumption may misinterpret the alcohol and related problems questions [8,9]. In line with the second thesis, research has shown that it's common for participants, for example, to say that they never drink and later inform a quantity greater than zero in the quantity questions [10]. Or report a particular event consumption during the week that exceeds the reported consumption for that week [11]. In Figure 1, we summarize examples of the described situation. Although there are complex mechanisms to address or remove such inconsistencies, their study is scarce, even when it could improve future evaluations.

In addition, if quantity-frequency questions are being misunderstood, the same may be valid for alcohol use disorders (AUD) criteria. In our context, we have found that some diagnostic criteria that are a marker for severe AUD (such as physiological dependence) are reported by young people with few criteria in the less severe AUD spectrum [3]. Results such as the former cast doubt on how youth understand the criteria and merit further examination.

Therefore, a comprehensive analysis of the inconsistencies found in youth in our contexts is needed to improve the assessment of alcohol consumption and alcohol-related problems and the strategies implemented afterward. Our proposal also compares several groups. First, we evaluate two groups, 25 years or less and more than 25 years, as inexperience in alcohol-related behaviour may change the perception of criteria. Several studies have found differences between women and men in the performance of alcohol screening instruments and alcohol-related problems, sex roles may be necessary too to address differences in the perception alcohol use and alcohol-related problems questions [12-15]. We aim to analyse inconsistencies in alcohol use questions and differences among groups in the AUD criteria. Differences are further explored to understand groups' perceptions of those questions/criteria when detected.

Subjects and Methods

This cross-sectional study includes two steps: to detect inconsistencies and differences among groups and to investigate them further.

Step 1: Inconsistencies in alcohol consumption and alcohol-related problems

Sample and Procedure

A cluster sampling of N = 1030 university students was obtained during the year 2014. For further details on the sampling procedure, see [16]. Fifty-nine percent were women; the mean age was M (SD) = 21.91(5.9). We collected data in classrooms with the consent of professors. The questionnaire took about 20 minutes, and the study followed ethical guidelines, ensuring confidentiality and anonymity and supplying informed consent and information about the researchers and the project. The Ethics Committee of the National Institute of Epidemiology in Argentina approved the study's protocol.

Besides the sex and age (in years) of the participants, we obtained information on:

1. Alcohol consumption

We assessed the frequency and quantity of alcohol consumption and frequency of binge drinking. The frequency categories were every day, almost every day, 3 or 4 times a week, 1 or 2 times a week, 2 or 3 times a month, almost once a month, 6 to 11 times a year, 1 to 5 times a year, and never. The quantity included the standard units (11 grams of pure alcohol) of an alcoholic beverage usually consumed on a drinking occasion for the last twelve months. For binge drinking, we estimated the frequency (daily, weekly, monthly, yearly, and never) in which the participant drank six or more standard units on a drinking occasion in the last twelve months.

2. Alcohol-related problems

We screened the lifetime endorsement of alcohol use disorders criteria with the Alcohol Section of the Composite International Diagnostic Interview (CIDI). This gold standard has been tested in different contexts with optimal results [17]. These criteria are compatible with the Diagnostic and Statistical Manual (DSM-5) and International Classification of Diseases (ICD-11) classification of AUD and include craving, hazardous use, tolerance, interpersonal problems, psychological problems due to using, drinking despite an underlying illness, physical problems due to using, withdrawal, reducing activities to use, much time spent using, repeated attempts or strong desire to reduce or stop use, not being able to stop drinking once started, larger or longer use than intended, role impairment, and legal problems.

Data analyses

First, we estimated the inconsistencies in alcohol consumption questions by detecting those who informed us that they had never drunk in their life or had not drunk in the past twelve months but told us a number greater than zero in quantity. We labelled the result as Q-F inconsistency. Then, we detected those who reported having never drunk six or more drinks in the last twelve months but had a usual quantity of six or more drinks in the same period. The result was labelled as binge drinking inconsistency. Later, we performed descriptive analysis on both variables and searched for differences by sex and age group (more than 25 and under 25 years) with bivariate analysis (X^2 test). Finally, we performed bivariate analyses (X2 test) to detect differences in the lifetime endorsement of alcohol-related problems by sex and age group.

Step 2: Interpretation of alcohol consumption and alcohol-related problems questions

Sample and Procedure

In 2020, we collected a purposive sample of N = 51 university students between 18 and 30 years M (SD) = 24.8 (3.20). Eighty percent of the sample were women. Due to the COVID-19 outbreak, we gathered the responses online. Participation was voluntary and confidential, and we obtained online informed consent. In addition, we added a page with the study's description and the researcher's contact. We used cookies and captchas to avoid multiple participation of single users and robots. Participants could print all the material at the end of the interview. The Ethics Committee of the Universidad Nacional de Mar del Plata, Argentina, approved the project.

Measures

For alcohol consumption, we asked participants what they believed it meant not to drink alcohol in the last twelve months: a) not to drink, not even a sip of alcohol; b) drink only on special occasions and in little quantity; c) minor frequency; d) others. Then, in an adaptation of available methodology we presented each criterion and asked participants to a) define, in their own words, the criterion; b) experiences they related to the criterion [8,18].

Data analyses

Regarding the experiences of each criterion, categories were coded by two trained reviewers based on participants' answers to the criteria with differences in Step 1. Then, we performed kappa measures to estimate the level of agreement in those categories. Finally, we made descriptive analyses by sex and age group in those categories.

Results

Inconsistencies in alcohol consumption and differences among alcohol-related problems

Q-F inconsistencies among those under 25 years were 3 %, and those higher than 25 years were 2 %. For both men and women, Q-F inconsistencies were 3 %. Binge drinking inconsistencies were 1 % in both age groups and women and 2 % for men. There were no significant differences between any group.

We found differences among those under 25 and older than 25 among hazardous use ($X2 = 12.38$, $p < 0.001$, $Phi = 0.11$), tolerance ($X2 = 12.31$, $p < 0.001$, $Phi = 0.11$), larger or longer use than intended ($X2 = 9.07$, $p < 0.01$, $Phi = 0.10$), withdrawal ($X2 = 11.92$, $p < 0.01$, $Phi = 0.11$), drinking despite an underlying illness ($X2 = 4.87$, $p < 0.05$, $Phi = 0.07$), and role impairment ($X2 = 11.73$, $p < 0.01$, $Phi = 0.12$).

Men and women presented differences among larger or longer use than intended ($X2 = 4.72$, $p< 0.05$, $Phi = -0.07$), much time spent using ($X2 = 8.57$, $p < 0.01$, $Phi = -0.09$), reducing activities to use ($X2 = 4.27$, $p < 0.05$, $Phi = -0.07$), interpersonal problems ($X2 = 10.56$, $p < 0.01$, $Phi = 0.11$), and role impairment ($X2 = 6.48$, $p < 0.05$, $Phi = -0.09$).

Regarding alcohol consumption, most participants (82 %, n = 42) answered that not drinking alcohol in the last twelve months meant not drinking, not even a sip of alcohol. Around 10 % (n = 5) said it meant to drink only on special occasions and in little quantity, and 8 % (n = 4) said it meant reduced frequency. Participants did not mention other meanings for the question.

We found only significant differences in the interpretation of the tolerance criterion by age group. None of the participants older than 25 years misinterpreted the question. But around 60 % (14 out of 23) of the participants younger than 25 did. We found no differences among sexes.

Around half of the participants misinterpreted the question in all the criteria considered. From the qualitative responses, we created a list of categories for the experiences associated with alcohol-related problems, which is listed in Table 1.

Discussion

Since the early use of alcohol increases the related consequences and poses differential risks than in adults (such as developmental issues), early detection is fundamental. But if early detection flows, all the prevalence estimations and interventions are also misguided. One thing is to lead interventions for AUD, and another is to reduce alcohol consumption. As other research has pointed out, there appear to be differences in how youth interpret alcohol use and related problems. Therefore, we aimed to estimate differences in those interpretations among younger and older participants and add a sex orientated approach.

Previous findings indicated that adolescents, particularly young men, are inconsistent with the report of lifetime use and drinking onset, and consumption in the past year and the last 30 days [19,20]. However, in our context, we found no differences in the interpretation of consumption questions by age or sex. Although most interpreted the question of alcohol use in the last 12 months as no consumption, nearly 20 % interpreted it as little quantity or frequency. Yet only 3 % reported inconsistencies in the actual question. A hypothesis could be that the answer was more accurate regardless of the interpretation when it was asked about their own experience. The inconsistencies might be due to the characteristics of expressions in our language, where sometimes the expression "I didn't drink anything" also means that the person drank a little. As observed in other studies, it could be helpful to ask if they have drunk at least one glass of an alcoholic beverage [19].

The only difference in the misinterpretation of AUD criteria was in the tolerance criteria, with more than half of the less than 25 years old and none of their older counterparts understanding a different thing. On the one hand, younger people probably never experienced tolerance, one of the most common symptoms of severe AUD [21]. Most young people tend to drink heavily, but with low frequency, they may not develop tolerance. On the other hand, the misinterpretation of tolerance by young people has been mentioned in the literature. Mewton and associates showed that the double-barrelled nature of the tolerance question is problematic because adolescents answer differently to the first than the second part [22]. Moreover, Marmet and associates found that interpretation of tolerance criteria (as well as larger/longer and hazardous use) shows changes between the ages of 20 and 25 [23]. For all the other criteria, no differences by age or sex were found in the interpretation of questions. It is of note that according to our results, half of the interviewed students misinterpreted the AUD criteria. But as many of them used other people's experiences to understand the question, we need to explore if they can't interpret the AUD criteria correctly because they haven't experienced it. As no differences were found among interpretations, the differences among sexes in the prevalence could be due to the onset of alcohol use problems. While men exhibit alcohol-related problems early, women do so later in life, and the studied population is primarily young [24].

Inconsistencies and misinterpreting questions are a general problem in the studied population. A possible solution is the inclusion of vignettes with examples of expected experiences or behaviours associated with the questions, although this effort for precision might enlengthen the surveys. Perhaps in younger populations, the development of visual aids could benefit alcohol use and alcohol-related-problems estimations.

This study has limitations that should be considered. Firstly, in Steps 1 and 2, samples were collected with six years of difference. Also, step 2 was developed during the first months of the COVID-19 pandemic, during which alcohol consumption patterns changed in some age groups (such as young people) in Argentina, and the sample size is small. Furthermore, participants were men and women, and other sexual expressions couldn't be analysed.

Despite limitations, the study addresses a methodological issue with implications in research and practice. Although not related to the specific aim of the study, it is noted that the only symptoms related to AUD experiences are reducing activities to use, withdrawal, and drinking despite an underlying illness and role impairment. Other, which research has pointed out as the core of AUD symptoms is regarded as a personal characteristic of lack of control [25]. New research might yield light on how these perceptions may increase the stigmatization of people living with AUD and delay the help-

Table 1. Description of categories of experiences associated with alcohol-related problems in college students, Argentina, 2020.

Criterion	Category	Definition
Hazardous use	third-party accidents	To have seen another person accidentally injured while under the effects of alcohol.
	fights	Injuries caused by fighting while drunk.
	nightclubs and parties	Injuries while drunk in these contexts.
	general accidents and injuries	Multiple experiences not related to themselves or someone they know.
	general own accidents and injuries	Multiple experiences related to themselves.
	consequences of alcohol drinking	Alcohol drinking consequences besides injuries.
	none	No experiences are listed.
Tolerance	coping with negative emotions or situations	Reported higher drinking to cope with depression or anxiety symptoms.
	positive sensations seeking	Reported a higher consumption to get drunk.
	places that facilitate consumption	Reported increased drinking in some contexts.
	other people experiences	To have seen another person increase their consumption with the same effect.
	not eating before alcohol consumption	Reported changes in alcohol effects related to food intake.
	persistent tolerance	Drinking more because of an alcohol-related problem.
	drinking onset	Reported experiencing this criterion in their adolescence, at drinking onset.
	none	No experiences are listed.
Larger or longer use than intended	lack of control	Reported not being able to stop drinking once they started.
	drinking onset	Reported experiencing this criterion in adolescence.
	social influence	Feeling pushed by friends or peers to increase alcohol intake. Increased consumption at parties/social events.
	parties/night club	Increased consumption to have fun.
	positive experiences	Increased consumption to deal with stressful situations.
	drink to cope	No experiences are listed.
	none	
Much time is spent using	drinking onset	Reported experiencing this criterion in adolescence.
	mood	Increased consumption when feeling happy or sad.
	parties	Increased consumption at or after parties.
	hangover	Reported having a hangover the day after drinking.
	lack of control	The inability to refrain from drinking is the main reason for more alcohol use.
	responsibilities	Associated responsibility with the criterion.
	none	No experiences are listed.

Table 1. (continued)

Criterion	Category	Definition
Reducing activities to use	alcohol use disorder or dependence	Related the criterion with people who have an alcohol use disorder.
	choosing alcohol instead of other activities	Reported situations of refusing activities to drink.
	going out	Preferring social situations implying alcohol drinking.
	alcohol-related problems	Reducing activities because of interpersonal conflicts, problems at work, fights, or feeling depressed, to drink.
	lack of control	The inability to refrain from drinking is the main reason for reduced activities.
	none	No experiences are listed.
Withdrawal	alcohol use disorder or dependence	Reported symptoms due to alcohol-related health conditions.
	physical symptoms	Reported physical symptoms due to alcohol consumption.
	withdrawal or rehab	Reported as effects of quitting alcohol.
	none	No experiences are listed.
Drinking despite an underlying illness	alcohol and medication	Having alcohol while taking antibiotics, painkillers, or other medicines.
	dependence	Drinking despite a severe alcohol condition.
	parties	Context as a facilitator to this behavior.
	lack of responsibility/control	The criterion is defined as a personal characteristic and not as the result of an alcohol-related problem.
	care for own health/self-control	The criterion is defined by the reasons for avoiding alcohol intake to care for health.
Role impairment	experiences from others	Never experienced it, but knows others who did.
	own experiences of a hangover	Personal experiences of role impairment due to drinking the day before.
	interferences with responsibilities	Problems in performing a vital activity (such as work).
	alcohol use disorder or dependence	Role impairment due to acute consumption.
	going out	To choose activities (such as parties) with alcohol consumption instead of the required by a specific role.
	none	No experiences are listed.

seeking, as they're unable to identify core alcohol-related problems as a treatment need [26].

In conclusion, the aim of this study was to analyse inconsistencies in alcohol use questions and differences in their interpretation among groups in the AUD criteria. We found inconsistencies and differences in AUD criteria, but how the consumption and AUD criteria questions were interpreted remain similar across age and sex groups.

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Conflict of interest

None to declare.

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