ORIGINAL

Alcohol consumption and characterization of hazardous drinkers in Galicia

Consumo de alcohol y caracterización de los bebedores problemáticos en Galicia

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Abstract

Detailed knowledge of the epidemiology of alcohol consumption at the population level is essential to the design of effective public health programs. The objectives of this study were to estimate the prevalence of daily, sporadic, occasional, binge and hazardous alcohol consumption among the Galician population aged 16 years and over, and to characterize hazardous drinkers, taking into account the gender perspective. A cross-sectional study was conducted in 2017 among people aged over 15 years residing in Galicia in the framework of the Risk Behavior Information System (SICRI). In 2017, 7,841 adults were interviewed by stratified random sampling. Questions related to alcohol consumption in the last month were included and the prevalence of hazardous consumption was estimated using the AUDIT test. A multivariate logistic regression model was fitted to characterize hazardous drinkers. A total of 18.8% of the Galician population consumed alcohol daily and 3.4% had hazardous consumption. The prevalence of daily, occasional, sporadic, binge and hazardous drinking was higher among men and varied by age. The prevalence of daily-occasional and sporadic drinking was highest at middle age (45-64 years), and binge and hazardous drinking among those aged 16 to 24 years. The characteristics associated with hazardous drinking varied by gender, and are identified by common characteristics to both genders such as age or being a tobacco or cannabis smoker, and differential characteristics such as educational level. Typologies of consumption changed according to age and gender. Surveillance systems should regularly monitor alcohol consumption in order to adapt prevention measures to changes in drinking patterns.
Keywords: alcohol use, prevalence, cross-sectional, alcoholism, gender

Resumen

Conocer en detalle la epidemiología del consumo de alcohol a nivel poblacional es indispensable para diseñar programas de Salud Pública eficaces. Los objetivos de este estudio fueron estimar la prevalencia del consumo de alcohol diario, ocasional, esporádico, intensivo y problemático entre los gallegos de 16 y más años y caracterizar a los bebedores problemáticos teniendo en cuenta la perspectiva de género. Se realizó un estudio transversal en 2017 entre la población mayor de 15 años residente en Galicia en el marco del Sistema de Información sobre Conductas de Riesgo (SICRI). En 2017, se entrevistaron 7.841 adultos seleccionados mediante muestreo aleatorio estratificado. Se incluyeron preguntas relacionadas con el consumo de alcohol en el último mes y se estimó la prevalencia de consumo problemático empleando el test AUDIT. Para caracterizar a los bebedores problemáticos se ajustó un modelo de regresión logística multivariante. El 18,8% de la población gallega consumía alcohol a diario y el 3,4% tenían un consumo problemático. Las prevalencias de consumo de alcohol diario, ocasional, esporádico, intensivo o problemático fueron más altas entre los hombres y variaron por edad. La prevalencia de consumo diario-ocasional y esporádico fue más alta a edades medias (45-64 años), y el intensivo y problemático entre los 16 y 24 años. Las características asociadas a un consumo problemático de alcohol varían por sexo, identificándose características comunes como la edad o ser fumador de tabaco o cannabis, y diferenciales como el nivel de estudios. Las tipologías de consumo cambian en función de la edad y del sexo. Los sistemas de vigilancia deberían monitorizar de forma periódica el consumo de alcohol para adaptar las medidas de prevención a cambios en la tipología de consumo.
Palabras clave: consumo de alcohol, prevalencia, transversal, alcoholismo, sexo

Approximately 5% of the burden of disease and mortality worldwide is due to alcohol use (World Health Organization, 2018; Peacock et al., 2018). In 2016, 6.8% of deaths in men and 2.2% in women were associated with drinking, globally (GBD 2016 Alcohol Collaborators, 2018). Alcohol use is related to more than 200 pathologies, raising the risk of diseases such as cirrhosis or liver cancer (World Health Organization, 2018; Rehm et al., 2017) and causing direct admissions and increased hospital stays due to indirect causes (Sánchez Sánchez, Redondo Martín, García Vicario & Velázquez Miranda, 2012). In addition, it is linked to traffic accidents, risky sexual behaviors, violence, abuse or loss of work productivity (Ministerio de Sanidad, Consumo y Bienestar Social, 2020; Pulido et al., 2014). The costs at health, economic and social levels are therefore high, making alcohol an important public health problem (Barrio, Reynolds, García-Altés, Gual & Anderson, 2017; Łyszczarz, 2019).

The spectrum of alcohol use is wide and covers various types, from abstinence or non-use to alcohol dependence or alcoholism (Maisto & Saitz, 2003). The most detailed information on alcohol use in Spain is provided by the Survey on Alcohol and Other Drugs (EDADES), although it is limited to the population aged 15 to 64 years. The most recent survey, carried out in 2019-2020, estimated a prevalence of last-month alcohol use in Spain of 63.0% and a daily drinking prevalence of 8.8% (Observatorio Español de las Drogas y las Adicciones, 2021). The most recent data on the general adult population (aged 15 years and over) come from the National Health Survey carried out in 2017 (ENSE-2017). It estimated that the prevalence of daily drinking was 14.7% and that Galicia was the autonomous community with the sixth highest prevalence (17.3%) (Ministerio de Sanidad, Consumo y Bienestar Social, 2018).

As in other countries, regardless of the type of drinking (global, binge or hazardous), the ENSE-2017 data show gender differences in the prevalences of alcohol use for both Spain and Galicia, with consumption always being higher in men (Ministerio de Sanidad, Consumo y Bienestar Social, 2018).

Although information derived from the ENSE on the prevalence of alcohol use in the adult population of Galicia is available, the sample size does not allow precise estimates to be made when detailed analyses are carried out by region based on variables such as sex and age. This information is necessary for effective public health work in planning and assessing different interventions aimed at both primary, secondary and tertiary prevention of alcohol use. Such actions are defined by the different types of drinking, with hazardous drinkers constituting a group of particular interest, both from an epidemiological and clinical point of view (Carvalho, Heilig, Perez, Probst & Rehm, 2019). While hazardous alcohol use occurs more frequently in men, recent years have seen a decrease in the differences in consumption between men and women (World Health Organization, 2018), thus making it essential to analyze this health problem from a gender perspective.

The objectives of this study were to estimate the prevalence of daily, sporadic, occasional, intensive and hazardous last-month alcohol use and to identify the sociodemographic variables, health status or behaviors linked to hazardous drinking in Galicia, taking into account the gender perspective.

Method

In 2005, the Health Risk Behavior Information System (SICRI) was introduced in Galicia. This involved carrying out cross-sectional studies using surveys among the population aged 16 and over living in Galicia. SICRI surveys are conducted at almost yearly intervals and are carried out by telephone using a CATI (Computed-assisted telephone interview) system. Among the aims of SICRI is the estimation of population prevalences of different risk factors for health.

The survey carried out in 2017 (SICRI-2017) was designed to guarantee the representativeness of the population defined by sex and in four age groups (16-24, 25-44, 45-64 and 65 years and over). Sample size was established taking into account a prevalence of 50% and an absolute error of 3.5%. For each sex and age group, a theoretical size of 980 interviews was estimated, representing a global sample size of 7,840 interviews. Stratified random sampling was employed using the Spanish health system registry (Tarjeta sanitaria) as the sampling frame, with an approximate coverage of 97% of the population resident in Galicia. Field work was carried out between January and December 2017.

A range of questions were included in the SICRI-2017 questionnaire to estimate the prevalence of alcohol use and characterize it at the population level. In relation to drinking in the last 4 weeks, daily drinkers are defined as people declaring that they have drunk alcohol on a daily basis, while sporadic drinkers are those who declare drinking alcohol every or almost every week, but not daily, and occasional drinkers claim to have drunk on one day in any of the weeks, with non-drinkers those declaring not to have drunk alcohol. The global use or alcohol user variable refers to the joint prevalence of daily, sporadic and occasional drinkers. People reporting to have drunk alcohol in the 4 weeks prior to the interview were asked about the frequency of drinking 6 or more alcoholic beverages on the same day, which is defined as heavy or binge drinking.

The ten questions comprising the *Alcohol Use Disorders Identification Test* (AUDIT) questionnaire were included. The total AUDIT score ranges from 0 to 40 points, with a score ≥ 8 (7 in women and in those over 64 years of age)

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being considered indicative of hazardous drinking (Babor, Higgins-Biddle, Saunders & Monteiro, 2001; Saunders, Aasland, Babor, de la Fuente & Grant, 1993).

Two multivariate logistic regression models were fitted to characterize hazardous drinkers, one for men and one for women. The dependent variable was hazardous drinking and sociodemographic variables, health status and health-related behaviors were included as explanatory variables. The explanatory variables included were those that were significantly associated with the dependent variable (p <0.1) in a previous bivariate analysis. The final model retained variables with p <0.05, and from this model adjusted odds ratios (OR) of having hazardous drinking were calculated.

The sociodemographic variables analyzed were: age group (16-24, 25-44, 45-64, and 65 years and over); country of birth (Spain - other country); area of residence (rural, semi-urban and urban); employment status at the time of the survey (working, unemployed, household duties, pensioner, student, or other situation); educational level (basic: primary education or less, medium: secondary education, and higher: university); and living with a partner (yes-no). In terms of health status variables, the analysis included self-perception of health status at the time of the survey (very good, good, normal and bad), weight status (underweight, normal weight, overweight and obesity) assessed on the basis of self-reported weight and height information, and self-perception of weight (fat, adequate weight and thin). Finally, the behavioral variables were tobacco and cannabis smoking (smoker and non-smoker) at the time of the survey. The analysis was performed independently for men and women using Stata v14.2, and the sample design was taken into account in the calculations.

Ethical approval by the Galicia Ethics Committee was not necessary because this study was voluntary and anonymous, guaranteeing total confidentiality. The study was conducted through telephone interviews and the agreement to participate consequently implied consent.

Detailed information on the design and other results of SICRI-2017 are available on the Dirección General de Salud Pública website [https://www.sergas.es/saude-publica/SICRI-Sistema-Información-sobre-Conductas-de-Risco].

Results

Information was collected from 7,841 people aged 16 and over, with a study response rate of 78%. With regards to health status and lifestyles, 37.9% of the Galician population aged 16 and over self-perceived their health status as good, while 55.1% were overweight or obese, 19.7% were smokers and 0.9% had problematic internet use. The characteristics of men and women are presented separately in table 1.

Alcohol was drunk by 58.6% of the Galician population aged 16 and over in the last month, with 18.8% drinking daily and 23.4% occasionally (Table 2). Overall, the prevalence of alcohol use was estimated at 72.8% in men and 45.8% in women.

The prevalences of daily and occasional use were higher among men [the male/female prevalence ratios (PR) were 2.7 for daily use and 1.7 for occasional use] (Table 2).

In men, the prevalence of alcohol users increased with age up to 45-64 years, which is the group with the highest prevalence (77.4%). In women, the highest prevalence was observed in the group aged 16 to 24 years (59.6%). For daily drinking, prevalence rose with age in both men and women but was higher among men at all ages (Figure 1).

An average intake of 1.65 alcoholic beverages per day of consumption was estimated among Galicians who drink alcohol. Men consumed on average 0.5 more drinks than women on the days that they drank alcohol, with the average intake of alcoholic beverages being 1.85 in men and 1.35 in women. Regardless of gender, occasional drinkers reported drinking 3 or more drinks on any given day of consumption (Table 3).

The highest prevalence of intensive use was observed in the 16-24-year-old group, especially in men, and decreased with age in both sexes, although it was always higher in men at any age (Figure 2). Between 25 and 44 years, the prevalence in men tripled that of women (male/female PR: 3.0).

The prevalence of hazardous alcohol use was 3.4% in the population and 5.8% among alcohol users. The highest prevalence among drinkers was observed in men (8.0%) and, by age group, between 16 and 24 years (17.5%) (Table 4).

Being under 25 years old, not living with a partner, perceiving oneself as a "fat" person and being a tobacco or cannabis smoker are variables that increased the probability of hazardous alcohol use in both men and women. In the case of men, a basic or medium level of education and a self-assessment of health status as "very good" or "good/normal" are also variables that increased the probability of hazardous drinking. In women, no additional variables were identified (Figures 3 and 4).

Table 1
Characteristics of Galician men and women aged 16 and over

	MEN				WOMEN			
	n	%	95% CI		n	%	95% CI	
SOCIODEMOGRAPHIC								
Age group								
16-24	911	8.4	8.3	8.6	918	7.3	7.2	7.4
25-44	1,001	31.6	31.2	32.0	1,006	28.6	28.2	28.9
45-64	1,001	34.3	33.9	34.8	1,002	32.6	32.2	33.0
>=65	1,001	25.7	25.4	25.9	1,001	31.5	31.3	31.7
Country of birth								
Spain	3,613	92.4	91.5	93.3	3,639	93.0	92.2	93.8
Other	301	7.7	6.8	8.5	288	7.0	6.2	7.9
Area of residence								
Urban	2,315	59.2	57.6	60.9	2,392	60.6	59.0	62.3
Semi-urban	1,032	26.4	24.9	27.9	979	24.8	23.3	26.3
Rural	559	14.4	13.2	15.5	547	14.6	13.4	15.8
Employment								
In work	1,677	50.2	48.9	51.5	1,493	40.8	39.5	42.2
Unemployed	315	8.9	7.9	9.9	330	8.4	7.5	9.3
Household duties	2	0.1	0.0	0.1	499	15.4	14.2	16.6
Retired	1,240	33.8	32.9	34.8	936	29.5	28.5	30.5
Student	674	6.9	6.5	7.4	668	5.9	5.5	6.2
Other situation	6	0.1	0.0	0.2	1	0.0	0.0	0.1
Education level								
Basic	1,991	49.8	48.2	51.3	1,877	52.1	50.8	53.5
Medium	1,305	31.9	30.4	33.4	1,240	26.3	24.9	27.6
High	618	18.3	17.0	19.7	810	21.6	20.3	22.9
Living arrangements								
With partner	2,243	67.4	65.9	68.8	2,000	59.7	58.2	61.3
Without partner	1,671	32.6	31.2	34.1	1,927	40.3	38.7	41.9
STATE OF HEALTH								
Self-perceived state of health								
Very good	611	13.0	11.9	14.1	535	11.6	10.6	12.7
Good	1,644	41.0	39.3	42.6	1,480	35.2	33.6	36.7
Normal	1,278	35.2	33.6	36.8	1,382	37.0	35.3	38.6
Poor	381	10.9	9.9	11.9	530	16.3	15.0	17.5
Weight status								
Low weight	53	0.8	0.6	1.1	188	3.5	2.9	4.1
Normal weight	1,655	36.9	35.3	38.4	2,068	48.0	46.4	49.7
Overweight	1,594	44.5	42.8	46.1	1,159	33.3	31.8	34.9
Obese	612	17.9	16.6	19.2	512	15.1	13.9	16.4
Self-perception of weight								
Fat	1,463	41.3	39.7	43.0	1,519	42.9	41.2	44.5
Correct weight	2,019	49.6	47.9	51.2	1,996	47.0	45.3	48.6
Thin	432	9.1	8.2	10.0	412	10.2	9.2	11.2
BEHAVIORS								
Smoking tobacco								
No	3,011	76.2	74.8	77.7	3,248	84.0	82.9	85.2
Yes	903	23.8	22.4	25.2	679	16.0	14.8	17.2
Smoking cannabis								
No	3,717	96.0	95.4	96.7	3,835	98.6	98.3	99.0
Yes	197	4.0	3.3	4.6	92	1.4	1.1	1.7
Internet use								
Non-user	1,165	32.7	31.4	34.0	1,161	36.5	35.3	37.7
Normal use	2,685	66.4	65.1	67.7	2,702	62.6	61.4	63.8
Hazardous or at-risk use	64	0.9	0.6	1.2	64	0.9	0.6	1.2
Gambling spending behaviour								
Non-gambler	1,568	35.4	33.8	37.0	2,131	47.8	46.2	49.5
Normal gambling	2,312	63.8	62.2	65.4	1,795	52.1	50.5	53.8
Probable pathological gambler	34	0.8	0.5	1.1	1	0.0	0.0	0.1

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Table 2
Prevalence of alcohol use in the Galician population aged 16 years and over

| | TOTAL | | | MEN | | | WOMEN | | |
| | n | % | 95% CI | | n | % | 95% CI | | n | % | 95% CI | |

	n	%	95% CI		n	%	95% CI		n	%	95% CI	
Never	3,132	41.4	40.3	42.5	1,105	27.2	25.8	28.7	2,027	54.3	52.6	55.9
Sporadic	1,428	16.4	15.6	17.3	639	14.9	13.7	16.0	789	17.9	16.6	19.1
Occasional	1,998	23.4	22.4	24.4	1,214	29.8	28.3	31.3	784	17.6	16.3	18.8
Daily	1,283	18.8	17.9	19.7	956	28.2	26.7	29.6	327	10.3	9.3	11.3

Figure 1
Prevalence of alcohol use (daily, sporadic and occasional) and daily consumption of alcohol by sex (men and women) and age group (16-24, 25-44, 45-64, 65 years and over) in the Galician population
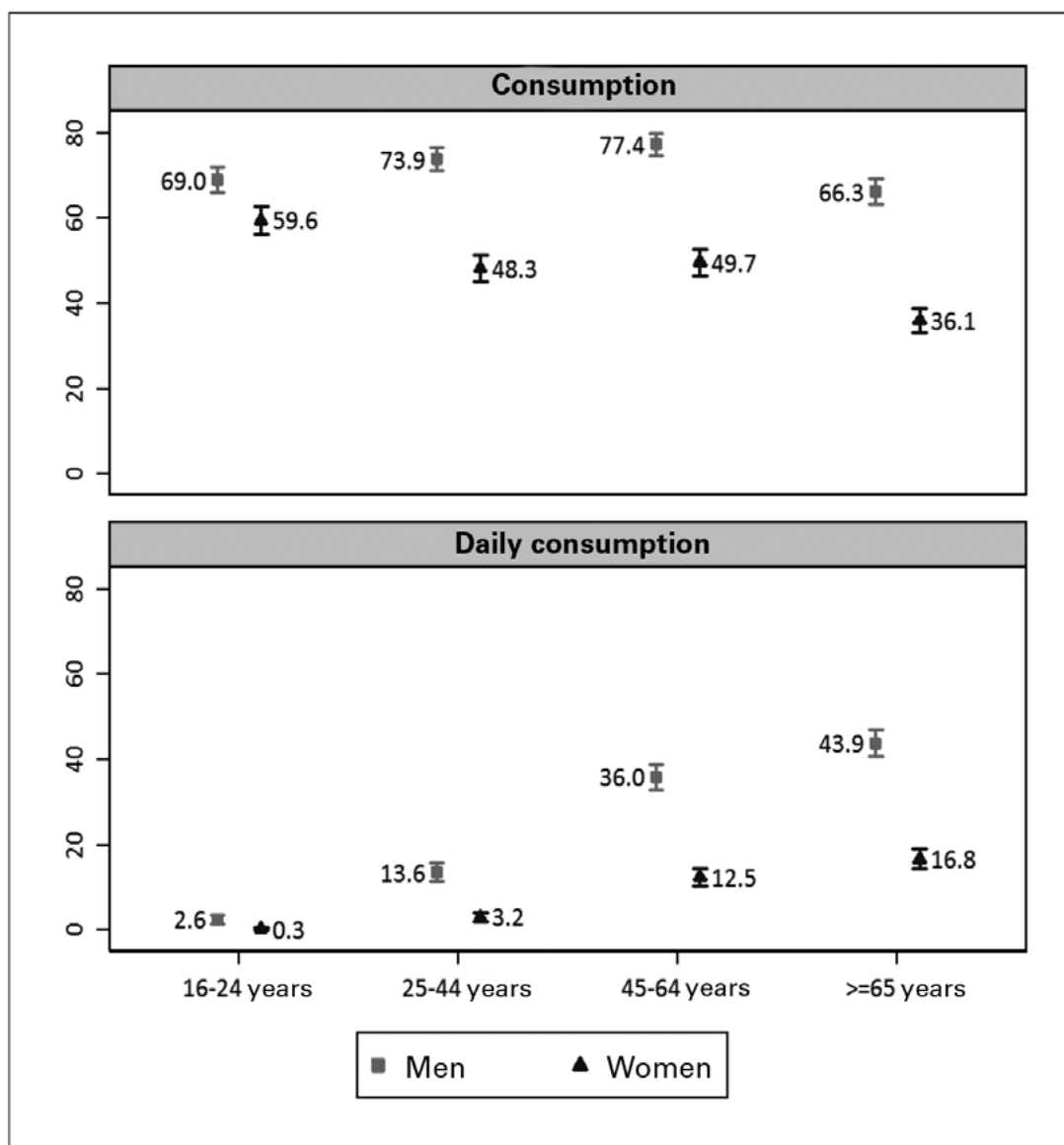
Table 3
Distribution of the number of beverages consumed by users on a given day

	TOTAL				MEN				WOMEN			
	n	%	95% CI		n	%	95% CI		n	%	95% CI	
All users												
One or less	2,345	55.6	54.1	57.0	1,231	47.3	45.3	49.2	1,114	67.6	65.5	69.7
Two	1,504	30.9	29.5	32.3	975	35.6	33.7	37.5	529	24.1	22.1	26.1
Three or more	860	13.6	12.6	14.5	603	17.2	15.7	18.6	257	8.3	7.2	9.5
Sporadic												
One or less	794	63.8	61.1	66.5	331	58.2	54.0	62.4	463	68.0	64.5	71.4
Two	411	25.6	23.1	28.1	182	27.6	23.8	31.4	229	24.1	20.9	27.3
Three or more	223	10.7	9.0	12.3	126	14.2	11.4	17.0	97	8.0	6.1	9.8
Occasional												
One or less	814	47.7	45.3	50.1	431	40.5	37.5	43.5	383	58.7	55.0	62.5
Two	688	34.4	32.1	36.7	441	38.2	35.2	41.2	247	28.6	25.2	32.1
Three or more	496	17.9	16.2	19.7	342	21.4	19.0	23.7	154	12.6	10.3	15.0
Daily												
One or less	737	58.3	55.6	61.0	469	48.7	45.5	51.9	268	82.2	78.1	86.4
Two	405	31.1	28.5	33.6	352	37.0	33.9	40.1	53	16.2	12.2	20.3
Three or more	141	10.6	8.9	12.3	135	14.3	12.0	16.6	6	1.6	0.3	2.8

Figure 2
Prevalence of intense alcohol use, defined as drinking 6 or more alcoholic beverages on the same day, by sex (men and women) and age group (16-24, 25-44, 45-64, 65 years and over) in the Galician population
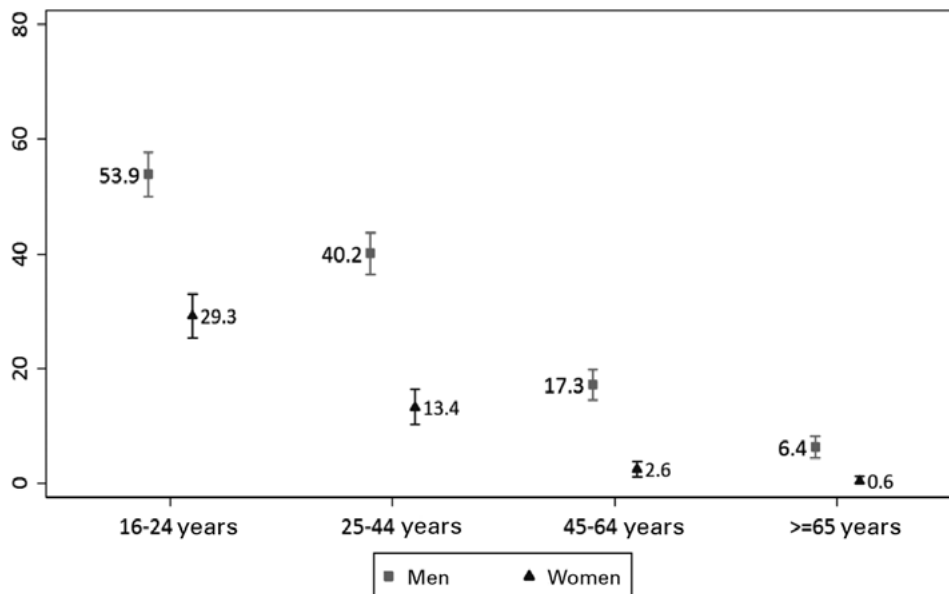

Table 4
Prevalence of hazardous drinking in the Galician population (in the population) and in the population of drinkers (in users) by age group (16-24, 25-44, 45-64, 65 years and over) in total, in men and women

	TOTAL				MEN				WOMEN			
	n	%	95% CI		n	%	95% CI		n	%	95% CI	
In the population												
16-24	1,829	11.3	9.8	12.7	911	15.4	13.0	17.7	918	7.0	5.3	8.6
25-44	2,007	4.4	3.5	5.2	1,001	7.6	5.9	9.2	1,006	1.1	0.5	1.7
45-64	2,003	2.3	1.7	3.0	1,001	4.0	2.8	5.2	1,002	0.7	0.2	1.2
>=65	2,002	1.6	1.1	2.1	1,001	3.0	2.0	4.1	1,001	0.5	0.1	0.9
Total	**7,841**	**3.4**	**3.0**	**3.8**	**3,914**	**5.8**	**5.1**	**6.6**	**3,927**	**1.2**	**0.9**	**1.5**
In users												
16-24	1,176	17.5	15.3	19.7	629	22.3	19.0	25.5	547	11.7	9.0	14.4
25-44	1,236	7.1	5.7	8.6	742	10.3	8.1	12.5	494	2.3	0.9	3.6
45-64	1,273	3.6	2.6	4.7	775	5.2	3.6	6.7	498	1.4	0.4	2.4
>=65	1,024	3.2	2.2	4.3	663	4.5	3.0	6.1	361	1.4	0.2	2.6
Total	**4,709**	**5.8**	**5.2**	**6.5**	**2,809**	**8.0**	**7.0**	**9.0**	**1,900**	**2.6**	**2.0**	**3.3**

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Figure 3
Characteristics associated with hazardous drinking in men
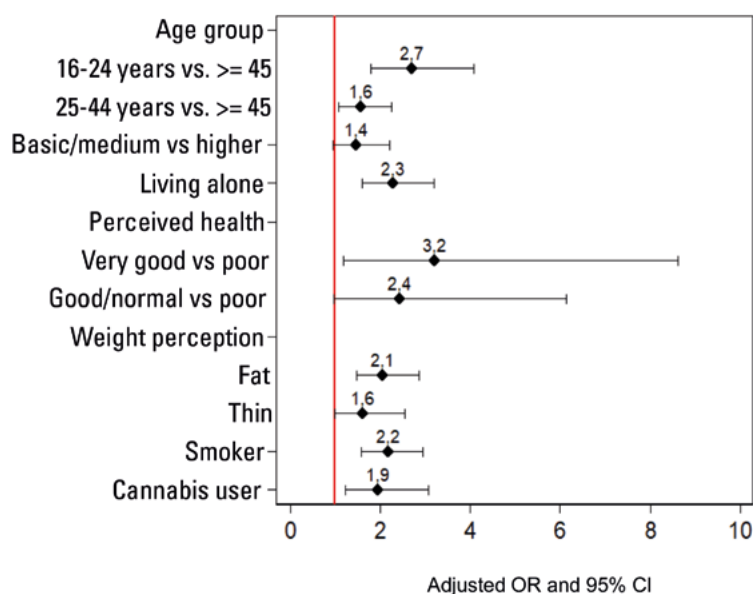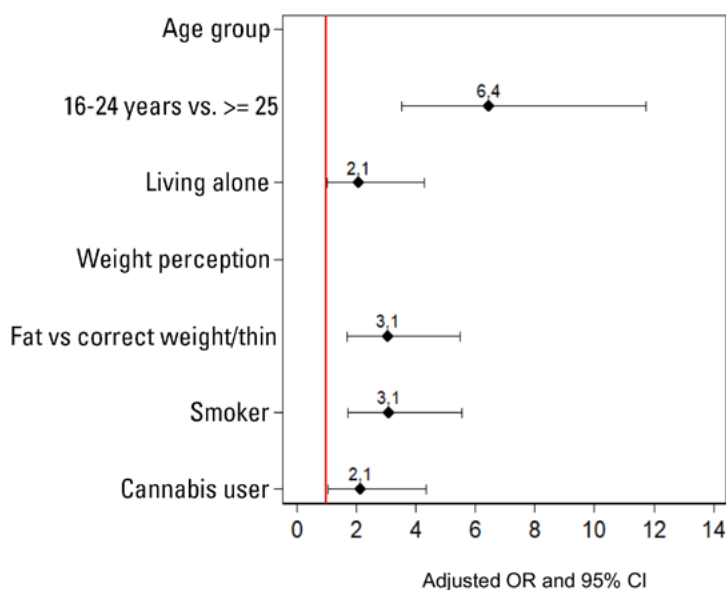

Figure 4
Characteristics associated with hazardous drinking in women

Discussion

There is a high prevalence of alcohol use in Galicia, with differences in consumption patterns by sex and age group. Men have higher prevalences than women, in all age groups and regardless of drinking pattern.

In general, the results obtained in this study are in line with the data published in the ENSE-2017 for the general Spanish population of comparable age. Both studies estimate similar prevalences and differences based on sex, with men consistently showing the highest prevalences. Differences by sex are consistent with those observed in other international studies, where the highest prevalences

are also found in men, although the level of difference varies depending on the country (World Health Organization, 2018). This variability may be explained by the influence of social and cultural factors in each country. In societies where there is a belief that women's drinking behaviour affects their social status have greater restrictions on alcohol use. On the other hand, in societies with growing gender equality, women are increasingly seen to adopt patterns of harmful behaviors that were traditionally common among men, such as alcohol use (Bosque-Prous et al., 2015; Galán, González & Valencia-Martín, 2014; White, 2020).

In relation to intensive alcohol use, also known as binge drinking, it is necessary to take into account the differences of definition across studies, both with reference to the number of alcoholic beverages ingested and the time frame. Nonetheless, the results of our study coincide with those of previous studies carried out in Spain, the United States or France, in identifying that intensive alcohol use occurs more frequently at the end of adolescence or the beginning of adult life and among men (Galán et al., 2020; Krieger, Young, Anthenien & Neighbors, 2018; Molina & Nelson, 2018; Rodríguez Muñoz, Carmona Torres, Hidalgo Lopezosa, Cobo Cuenca & Rodríguez Borrego, 2019; Soler-Vila et al., 2014; Tavolacci et al., 2016). Despite the fact that they drink alcohol less intensively than men, this type of drinking pattern is increasing among women, and differences between young men and young women are disappearing (Wilsnack, Wilsnack, Gmel & Kantor, 2018). One of the issues that may explain why younger people have higher intensive use of alcohol is the link shown between binge drinking and the "botellón" phenomenon, which can be described as groups of mostly young people getting together to drink alcohol in public outdoor spaces. In "botellón" a situation is created where factors such as peer pressure to drink alcohol, greater accessibility of cheaper drinks and the belief in positive effects, for example, that it will facilitate social relationships, can influence the practice of intensive drinking (Llamosas-Falcón, Manthey & Rehm, 2022; Teixidó-Compañó et al., 2019).

Hazardous drinking is a public health problem that has unequal effects on the world population (Carvalho et al., 2019). Spain is one of the European countries with the lowest prevalence (Carvalho et al., 2019), yet even so, it affects 5.6% of the population under 65 years of age (Observatorio Español de las Dogas y las Adicciones, 2021). In Galicia, this prevalence has been estimated at 3.4%, with greater prevalence observed, as in other studies, among men (Bosque-Prous et al., 2015). In addition, it is worrying that the age group with the highest prevalence of hazardous use in Galicia is between 16 and 24 years old, and that it is in this group where the prevalence ratio by sex is the lowest of those observed in the different age groups. In a study analyzing gender differences between European countries with regard to hazardous drinking, it was seen that this type of drinking is predominant among men and especially in Eastern European countries. However, it was observed that, in countries with greater gender equality, the differences in this type of pattern were smaller due to a higher prevalence of hazardous drinking in women (Bosque-Prous et al., 2015).

Few studies have analyzed the characteristics associated with hazardous alcohol use in the adult population based on sex. Our study has observed that Galician men and women with hazardous drinking present common characteristics in terms of age, living with a partner, weight perception and addictive behaviors linked to tobacco and cannabis use. However, educational level, a variable linked to hazardous drinking by other authors, seems to be a factor only in men.

In line with a previous study, it was observed that young men and women are more prone to hazardous alcohol use (Skinner & Veilleux, 2016). Being aged between 16 and 24 years was the biggest factor for hazardous use in women. As in other studies, we observed that risk behaviors are related to one another; hence the probability of hazardous drinking is higher among tobacco or cannabis smokers (Berge, Håkansson & Berglund, 2014; Bosque-Prous et al., 2017; Park & Kim, 2019), especially among women. In our study, the probability of hazardous drinking rises among people who live without a partner. Previous studies have identified this relationship in men (Bosque-Prous et al., 2017; Park et al., 2019), while there are discrepancies with regard to women (Bosque-Prous et al., 2017; Teixidó-Compañó et al., 2018). While educational level is a variable traditionally related to hazardous alcohol use (Bosque-Prous et al., 2017; Park et al., 2019; Teixidó-Compañó et al., 2018), the relationship observed between educational level and hazardous drinking differs between men and women. In men, this pattern is associated with a low level of education, but this link has not been firmly established in women, with some authors pointing to a relationship between hazardous use and higher levels of education (Bosque-Prous et al., 2017; Devaux & Sassi, 2016; Park et al. 2019). In our work, as in a further study carried out in Spain (Teixidó-Compañó et al., 2018), no relationship was found between educational level and hazardous drinking in women.

To our knowledge, this is the first time that the influence of self-perception of weight has been assessed in relation to hazardous alcohol use. Both men and women who perceive themselves as "fat" are more prone to hazardous alcohol use. With men, thinking of themselves as "thin" also increases the likelihood of hazardous use, while in women it decreases it. In relation to self-perceived health status, previous results had already shown that, among men, perceiving their health status as good or very good increases the probability of hazardous alcohol use (Bosque-Prous et al., 2017).

The most notable limitation of this study is the telephone self-report of alcohol use as it does not allow detailed measurement of the units of drink consumed by the population. Self-reporting of behaviors with negative social connotations is prone to social desirability bias, leading to concealment of the behavior and therefore an underestimation of the real prevalence of use. In this case, such bias could especially affect the prevalence of hazardous drinking, so the estimates presented here should be read with caution (Staudt et al., 2019; Valencia-Martín, González & Galán, 2014). The greatest strength of the study is its sample size, making it possible to carry out a detailed analysis of the type of alcohol use at the

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autonomous community level with representative data by sex and age group, something that surveys carried out at national level are unable to perform. Another of the strengths is that the sample is evenly distributed across the 12 months of the year, thus avoiding the influence of seasonality on alcohol use.

This study substantiates the reality of alcohol use among Galician adults, estimating high prevalences of a behavior that entails health risks and has consequences at personal, family, work and social levels. Preventive actions by the health system should be prioritized and aimed at all levels, whether primary, secondary and tertiary prevention. At the same time, it is important to continue monitoring alcohol use to detect changes in patterns, behaviors and trends in the population.

Conflict of interests

All authors declare no conflicts of interest.

References

Babor, T., Higgins-Biddle, J., Saunders, J. & Monteiro, M. (2001). *Cuestionario de Identificación de los Trastornos debidos al Consumo de Alcohol: AUDIT.* https://www.who.int/substance_abuse/activities/en/AUDITmanualSpanish.pdf.

Barrio, P., Reynolds, J., García-Altés, A., Gual, A. & Anderson, P. (2017). Social costs of illegal drugs, alcohol and tobacco in the European Union: A systematic review. *Drug and Alcohol Review, 36,* 578–588. doi:10.1111/dar.12504.

Berge, J., Håkansson, A. & Berglund, M. (2014). Alcohol and drug use in groups of cannabis users: Results from a survey on drug use in the Swedish general population. *The American Journal on Addictions, 23,* 272–279. doi:10.1111/j.1521-0391.2014.12097.x.

Bosque-Prous, M., Brugal, M. T., Lima, K. C., Villalbí, J. R., Bartroli, M. & Espelt, A. (2017). Hazardous drinking in people aged 50 years or older: A cross-sectional picture of Europe, 2011-2013. *International Journal of Geriatric Psychiatry, 32,* 817–828. doi:10.1002/gps.4528.

Bosque-Prous, M., Espelt, A., Borrell, C., Bartroli, M., Guitart, A. M., Villalbí, J. R. & Brugal, M. T. (2015). Gender differences in hazardous drinking among middle-aged in Europe: The role of social context and women's empowerment. *European Journal of Public Health, 25,* 698–705. doi:10.1093/eurpub/cku234.

Carvalho, A. F., Heilig, M., Perez, A., Probst, C. & Rehm, J. (2019). Alcohol use disorders. *Lancet, 394,* 781–792. doi:10.1016/S0140-6736(19)31775-1.

Devaux, M. & Sassi, F. (2016). Social disparities in hazardous alcohol use: Self-report bias may lead to incorrect estimates. *European Journal of Public Health, 26,* 129–134. doi:10.1093/eurpub/ckv190.

Galán, I., González, M. J. & Valencia-Martín, J. L. (2014). Patrones de consumo de alcohol en España: Un país en transición. *Revista Española de Salud Pública, 88,* 529-540. doi:10.4321/S1135-57272014000400007.

Galán, I., Simón, L., Rodríguez-Blázquez, C., Ortiz, C., López-Cuadrado, T. & Merlo, J. (2020). Individual and contextual factors associated with hazardous drinking in Spain: Evidence from a national population-based study. *Alcoholism, Clinical and Experimental Research, 44,* 2247–2256. doi:10.1111/acer.14451.

GBD 2016 Alcohol Collaborators (2018). Alcohol use and burden for 195 countries and territories, 1990-2016: A systematic analysis for the Global Burden of Disease Study 2016. *Lancet, 392,* 1015–1035. doi:10.1016/S0140-6736(18)31310-2.

Krieger, H., Young, C. M., Anthenien, A. M. & Neighbors, C. (2018). The epidemiology of binge drinking among college-age individuals in the United States. *Alcohol Research: Current Reviews, 39,* 23–30.

Llamosas-Falcón, L., Manthey, J. & Rehm, J. (2022). Cambios en el consumo de alcohol en España de 1990 a 2019. *Adicciones, 34*(1), 61-72. http://dx.doi.org/10.20882/

Łyszczarz, B. (2019). Production losses associated with alcohol-attributable mortality in the European Union. *International Journal of Environmental Research and Public Health, 16,* 3536. doi:10.3390/ijerph16193536.

Maisto, S. A. & Saitz, R. (2003). Alcohol use disorders: Screening and diagnosis. *The American Journal on Addiction, 12 (Supl. 1),* 12-25. doi:10.1111/j.1521-0391.2003.tb00493.x.

Ministerio de Sanidad, Consumo y Bienestar Social. (2018). *Encuesta Nacional de Salud de España 2017.* https://www.mscbs.gob.es/estadEstudios/estadisticas/encuestaNacional/encuesta2017.htm.

Ministerio de Sanidad, Consumo y Bienestar Social. (2020). *Límites de consumo de bajo riesgo de alcohol. Actualización del riesgo relacionado con los niveles de consumo de alcohol, el patrón de consumo y el tipo de bebida.* https://www.mscbs.gob.es/profesionales/saludPublica/prevPromocion/Prevencion/alcohol/docs/Limites_Consumo_Bajo_Riesgo_Alcohol_Actualizacion.pdf.

Molina, P. E. & Nelson, S. (2018). Binge drinking's effects on the body. *Alcohol Research: Current Reviews, 39,* 99–109.

Observatorio Español de las Drogas y las Adicciones. (2021). *Encuesta sobre alcohol y otras drogas en España, EDADES 2019/2020.* https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/encuestas_EDADES.htm.

Park, E. & Kim, Y. S. (2019). Gender differences in harmful use of alcohol among Korean adults. *Osong Public Health*

and Research Perspectives, 10, 205–214. doi:10.24171/j. phrp.2019.10.4.02.

Peacock, A., Leung, J., Larney, S., Colledge, S., Hickman, M., Rehm, J.,… Degenhardt, L. (2018). Global statistics on alcohol, tobacco and illicit drug use: 2017 status report. *Addiction, 113*, 1905–1926. doi:10.1111/ add.14234.

Pulido, J., Indave-Ruiz, B. I., Colell-Ortega, E., Ruiz-García, M., Bartroli, M. & Barrio, G. (2014). Estudios poblacionales en España sobre daños relacionados con el consumo de alcohol. *Revista Española de Salud Pública, 88*, 493-513. doi:10.4321/S1135-57272014000400005.

Rehm, J., Gmel Sr, G. E., Gmel, G., Hasan, O., Imtiaz, S., Popova, S.,… Shuper, P. A. (2017). The relationship between different dimensions of alcohol use and the burden of disease-an update. *Addiction, 112*, 968–1001. doi:10.1111/add.13757.

Rodríguez Muñoz, P. M., Carmona Torres, J. M., Hidalgo Lopezosa, P., Cobo Cuenca, A. I. & Rodríguez Borrego, M. A. (2019). Evolution of alcohol and tobacco consumption in young people in Spain, after the law 42/2010 against smoking: 2011-2014. *Adicciones, 31*, 274-283. doi:10.20882/adicciones.1035.

Sánchez Sánchez, A., Redondo Martín, S., García Vicario, M. I. & Velázquez Miranda, A. (2012). Episodios de urgencia hospitalaria relacionados con el consumo de alcohol en personas de entre 10 y 30 años de edad en Castilla y León durante el período 2003-2010. *Revista Española de Salud Pública, 86*, 409-417.

Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R. & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction, 88*, 791-804. doi:10.1111/j.1360-0443.1993.tb02093.x.

Skinner, K. D. & Veilleux, J. C. (2016). The interactive effects of drinking motives, age, and self-criticism in predicting hazardous drinking. *Substance Use & Misuse, 51*, 1342–1352. doi:10.3109/10826084.2016.1168448.

Soler-Vila, H., Galán, I., Valencia-Martín, J. L., León-Muñoz, L. M., Guallar-Castillón, P. & Rodríguez-Artalejo, F. (2014). Binge drinking in Spain, 2008-2010. *Alcoholism, Clinical and Experimental Research, 38*, 810-819. doi:10.1111/acer.12275.

Staudt, A., Freyer-Adam, J., Meyer, C., Bischof, G., John, U. & Baumann, S. (2019). Does prior recall of past week alcohol use affect screening results for at-risk drinking? Findings from a randomized study. *PloS one, 14*, e0217595. doi:10.1371/journal.pone.0217595.

Tavolacci, M. P., Boerg, E., Richard, L., Meyrignac, G., Dechelotte, P. & Ladner, J. (2016). Prevalence of binge drinking and associated behaviours among 3286 college students in France. *BMC Public Health, 16*, 178. doi:10.1186/s12889-016-2863-x.

Teixidó-Compañó, E., Espelt, A., Sordo, L., Bravo, M. J., Sarasa-Renedo, A., Indave, B. I.,… Brugal, M. T. (2018). Differences between men and women in substance use: The role of educational level and employment status. *Gaceta Sanitaria, 32*, 41–47. doi:10.1016/j. gaceta.2016.12.017.

Teixidó-Compañó, E., Sordo, L., Bosque-Prous, M., Puigcorbé, S., Barrio, G., Brugal, M. T.,… Espelt, A. (2019). Factores individuales y contextuales relacionados con el binge drinking en adolescentes españoles: Un enfoque multinivel. *Adicciones, 31*, 41–51. doi:10.20882/ adicciones.975.

Valencia-Martín, J. L., González, M. J. & Galán, I. (2014). Methodological issues in the measurement of alcohol consumption: The importance of drinking patterns. *Revista Española de Salud Pública, 88*, 433-446. doi:10.4321/S1135-57272014000400002.

Wilsnack, R. W., Wilsnack, S. C., Gmel, G. & Kantor, L. W. (2018). Gender differences in binge drinking. *Alcohol Research: Current Reviews, 39*, 57–76.

White, A. M. (2020). Gender differences in the epidemiology of alcohol use and related harms in the United States. *Alcohol Research: Current Reviews, 40*, 01. doi:10.35946/ arcr.v40.2.01.

World Health Organisation. (2018). *Global status report on alcohol and health 2018*. https://apps.who.int/iris/ bitstream/handle/10665/274603/9789241565639-eng.pdf?ua=1.