



Implementation of health warnings on alcoholic beverages in Spain

Luis Sordo^{a,b,c,*}, Jarileen Padilla-Cruz^d, Marina Bosque-Prous^{b,e,f}, Ainara Díaz-Geada^g, Gregorio Barrio^{b,h}, Aina Lafon-Guasch^{e,i}, Judit Rogésⁱ, Iñaki Galán^{d,j}

^a Department of Public Health, Faculty of Medicine, Universidad Complutense de Madrid, Spain

^b CIBER of Epidemiology and Public Health (CIBERESP), Madrid, Spain

^c Health Research Institute, Hospital Clínico de San Carlos (IdISSC), Madrid, Spain

^d Department of Preventive Medicine and Public Health, School of Medicine, Universidad Autónoma de Madrid, Madrid, Spain

^e Epi4health Research Group, Faculty of Health Sciences, Universitat Oberta de Catalunya, Barcelona, Spain

^f Departament de Psicobiologia i Metodologia de les Ciències de la Salut, Universitat Autònoma de Barcelona (UAB), Spain

^g Department of Psychiatry, Radiology, Public Health, Nursing and Medicine, IDIS University of Santiago de Compostela, Santiago de Compostela, Spain

^h Escuela Nacional de Sanidad, ISCIII, Madrid, Spain

ⁱ Epi4health Research Group, Faculty of Health Sciences of Manresa, Universitat de Vic-Universitat Central de Catalunya (UVic-UCC), Av. Universit ria 4-6, 08242, Manresa, Spain

^j National Centre of Epidemiology. Carlos III Health Institute. Madrid, Spain

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ABSTRACT

Introduction: The objective of this study is to estimate the frequency and characteristics of health warning labeling on alcoholic beverages in Spain.

Study design: Cross-sectional study conducted in Madrid, Spain, between March and April 2023.

Methods: A convenience sample was designed by selecting four supermarket chains with a 40 % share of food distribution and two specialized alcohol stores. A total of 627 products were examined: 170 beers, 306 wines and sparkling wines, 68 liquors, 48 vermouths and aperitifs, and 35 other types of alcoholic beverages. Fisher's exact test statistically evaluated differences in labeling across beverage types.

Results: One or more health warnings were observed on 63.0 % of the products, with the most frequent being a recommendation against consumption during pregnancy (56.5 %), followed by recommendations against consumption by minors (19.0 %), and while driving (9.1 %). Only 9.1 % of the labels displayed two warnings, and 6.2 % displayed three. Significant differences were observed according to beverage type ($p < 0.001$), with the beer products presenting the highest frequency of displaying at least one warning (81.8 %), and liquors presenting the lowest frequency (50 %).

Conclusions: In Spain, alcohol industry's adherence to its own voluntary labeling guidelines of health warnings is low and inconsistent across type of beverages.

1. Introduction

Alcohol consumption is among the major risk factors for disease burden, accounting for 5.3 % of all global deaths and for a significant share of social problems. In Europe, alcohol consumption is highly prevalent, with an annual per capita intake of 9.8 L, making it the region with the highest consumption in the world [1–3].

Health warnings on alcoholic beverages provide information and raise awareness about the risks associated with their consumption [3,4]. These warnings, presented as pictograms or text on product labels, mainly advise against consumption by pregnant women, drivers, and

minors [3,4]. Although regulated in more than 40 countries, health warnings on alcoholic beverages in Europe are not mandatory. Although the European Commission suggested implementing their usage by the end of 2023, only Germany, France, Ireland, and Lithuania have some regulations in place [3]. Whereas warning labeling enjoys wide support from the public [5], this issue remains highly controversial because a sector of the industry opposes regulation [4,5].

In Spain, the inclusion of health warnings on alcoholic beverage labels is voluntary. Identifying the frequency and characteristics of the existing warnings may inform recommendations and future regulations. This study aims to describe the frequency and characteristics of health

* Corresponding author. Department of Public Health, Faculty of Medicine, Universidad Complutense de Madrid, P/ Ramón y Cajal s/n, 28040, Madrid, Spain.
E-mail address: lsordo@ucm.es (L. Sordo).

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warnings on alcoholic beverages in Spain.

2. Methodology

2.1. Design

This cross-sectional study was conducted in the municipality of Madrid, Spain, between March and April 2023. A convenience sample was designed in two phases: First, four supermarket chains with a 40 % share of the food distribution market [6] were selected and supplemented with two specialized stores selling beer and wine. All beverages with an alcohol content above 1.2 % (a total of 942 different beverages) listed on the websites were recorded. Subsequently, trained technicians visited the establishments to document and photograph the labels. Of the beverages recorded online, 627 (66.8 %) were found in the physical stores.

2.2. Study variables

Type of beverage: Beer; wines and sparkling wines; liquors/spirits; vermouth/aperitifs; others (cider, sangria, and similar beverages).

Health warnings: Any information related to alcohol consumption adverse health effects, and specific characteristics of such information.

2.3. Data analysis

We calculated frequency distributions, and hypothesis testing assessed any differences by type of beverage using Fisher's exact test. Analyses were conducted using SPSS version 28.0 (IBM Corp., 2021).

3. Results

Of the 627 products examined, 170 (27.1 %) were beers, 308 (48.8 %) were wines, 68 (10.8 %) were liquors, 48 (7.6 %) were vermouths/aperitifs, and 35 (5.6 %) were other beverages. Labels included specific warnings for three conditions in which alcohol consumption is not recommended: pregnancy, being underage, and while driving. One or more of these warnings were included in 63.0 % of all products, ranging from 50 % in liquors up to 81.8 % in beers ($p < 0.001$). The most common warning was against consumption during pregnancy (56.5 %), as well as the most uniformly distributed across beverage types ($p = 0.337$). The warning against underage drinking was the second most common (19.0 %) and, finally, the one regarding drinking and driving

was found in 9.1 % of the sample. In both cases there were significant differences across beverage types ($p < 0.001$). Only 9.1 % of the products' labels had two warnings, and 6.2 % had all three. Beers were the product most likely to display a combination of health warnings (Table 1).

Health warnings were always displayed using pictograms. However, some were accompanied by text: 0.3 % of pregnancy warnings, 8.8 % of driving warnings, and 1.7 % of underage warnings (Supplementary Material). Other text messages were related to moderate consumption (4 warnings), responsible drinking (11 warnings), and alcohol abuse (2 warnings), with most of these messages written in a language other than Spanish (Supplementary Material). No information was found on alcohol risks regarding specific diseases.

4. Discussion

To the best of our knowledge, this is the first study on the presence of health warnings on alcoholic beverages in Spain. Over 60 % of all beverages displayed some form of health warning, though most displayed only one. There were no messages regarding the risks for specific diseases, and any additional consumption recommendations were very scarce, nonspecific, and usually written in a language other than Spanish.

The most frequent recommendation was to avoid alcohol consumption during pregnancy, with very few warnings about consumption by minors and while driving. In Spain, 1.2 % of women report having consumed alcohol during pregnancy [2]. There is also very solid evidence on the negative consequences of underage alcohol consumption and on the effects on drinking and driving [1]. The strong health evidence in the face of the low adherence to European recommendations supports regulating the industry to make health warnings mandatory, as some other countries already do [3]. Finally, the scarcity of other warnings is notable, with a predominance of the message "drink moderately or responsibly," often not written in Spanish.

Regarding format, we observed that the same type of warning was represented by different pictograms. Future studies should determine which designs are best received while still impactful. Pictogram-based messages are more effective than other formats, particularly when they are highly visible [7] and regularly updated to prevent consumer desensitization. These measures should inform future regulations on health warnings.

Regulation of the display of health warnings on alcoholic beverages could effectively reduce excessive consumption and associated mortality

Table 1
Health warnings about the risks of consumption during pregnancy, for minors, and while driving.

	TOTAL (N = 627)		Beer (n = 170)		Wine ^a (n = 308)		Liquor (n = 68)		Vermouth ^b (n = 48)		Other (n = 35)		p-Value
	n	%	n	%	n	%	n	%	n	%	n	%	
Number of health warnings													< 0.001
None	232	37.0	31	18.2	139	45.4	34	50.0	18	37.5	10	28.6	
1 warning	299	47.7	70	41.2	154	50.3	24	35.3	27	56.2	24	68.6	
2 warnings	57	9.1	49	28.8	1	0.3	5	7.3	2	4.2	0	0	
3 warnings	39	6.2	20	11.8	12	3.9	5	7.3	1	2.1	1	2.9	
Type of warning													
Pregnancy	354	56.5	99	58.2	167	54.6	34	50	30	62.5	24	68.6	0.337
Underage	119	19.0	97	57.1	12	3.9	5	7.3	3	6.3	2	5.7	< 0.001
Driving	57	9.1	32	18.8	13	4.2	10	14.7	1	2.1	1	2.9	< 0.001
Combinations of warnings													
Pregnancy and underage	79	12.6	58	34.1	12	3.9	5	7.3	3	6.3	1	2.9	< 0.001
Pregnancy and driving	56	8.9	31	18.2	13	4.2	10	14.7	1	2.1	1	2.9	< 0.001
Underage and driving	39	6.2	20	11.8	12	3.9	5	7.3	1	2.1	1	2.9	0.011

^a Includes sparkling wine.

^b Includes aperitifs.

[8], as previously seen with tobacco [3]. Scientific evidence suggests that front-facing, visible labeling with specific information has the potential to raise awareness about alcohol consumption risks, thus becoming a key component of a comprehensive strategy for the prevention and control of this risk factor [9].

Among the study's limitations, we must underline that the sample is not representative of all alcoholic beverages available for purchase. Additionally, not all beverages listed online were available in the physical stores. However, the sample reflects the locations and types of beverages typically purchased by residents in Spain, where 96–97 % of purchases are made in person [10].

5. Conclusions

In Spain, health warnings on alcoholic beverages remain infrequent and their implementation is highly inconsistent across beverage types. Therefore, we recommend regulating the display of warnings for pregnant women, drivers, and minors, as well as information on risks for specific diseases, based on well-established scientific evidence. This would help inform consumers of the potential adverse effects of alcohol consumption.

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Ethical approval was not required for this study, because it did not involve human participants.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Spanish Society Of Epidemiology (Alcohol group) reports administrative support was provided by Spanish Ministry of Health. Government

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhip.2025.100622>.

References

- [1] Global Status Report on Alcohol and Health, World Health Organization, 2018. <https://www.who.int/publications/i/item/9789241565639>.
- [2] Spanish Observatory on Drugs and Addictions. Technical Report on Alcohol 2021, Consumption and Consequences. Madrid: Ministry of Health. Delegación del gobierno para el Plan Nacional sobre Drogas, 2022.
- [3] E. Jané-Llopis, D. Kokole, M. Neufeld, O. Syed, M. Hasan, J. Rehm, What Is the Current Alcohol Labelling Practice in the WHO European Region and what Are Barriers and Facilitators to Development and Implementation of Alcohol Labelling Policy? WHO Regional Office for Europe, 2020.
- [4] N. Giesbrecht, E. Reisdorfer, I. Rios, Alcohol health warning labels: a rapid review with action recommendations, *Int. J. Environ. Res. Publ. Health* 19 (18) (2022).
- [5] S. Calnan, S.R. Millar, D. Mongan, Support for evidence-based alcohol policy in Ireland: results from a representative household survey, *Eur. J. Publ. Health* 33 (2) (2023) 323–330.
- [6] Inforetail R. Mercadona, Carrefour, Lidl y Consum, winners of 2022 [triunfadores de 2022] [Internet]. Available in: <https://www.revistainforetail.com/noticiadet/mercadona-carrefour-lidl-y-consum-triunfadores-de-2022/69efaba3e50ba3b7c030692367ea76b8>.
- [7] S. Lacoste-Badie, J. Yu, O. Droulers, Do health warning labels on alcohol packaging attract visual attention? A systematic review, *Public Health* 236 (2024) 184–192.
- [8] T. Stockwell, R. Solomon, P. O'Brien, K. Vallance, E. Hobin, Cancer warning labels on alcohol containers: a consumer's right to know, a government's responsibility to inform, and an industry's power to thwart, *J. Stud. Alcohol Drugs* 81 (2) (2020) 284–292.
- [9] D. Kokole, P. Anderson, E. Jané-Llopis, Nature and potential impact of alcohol health warning labels: a scoping review, *Nutrients* 13 (9) (2021) 3065.
- [10] A.R.A.L. Revista, La cuota de la compra online de alimentos se sitúa entre el 3% y el 4% en España, Disponible en, <https://www.revistaaral.com/texto-diario/mostror/3471130/cuota-compra-online-alimentos-situa-entre-3-4-espana>, 2022.