

Alcohol-Related Liver Disease in Latin America: Local Solutions for a Global Problem

Luis Antonio Díaz,*  Juan Pablo Roblero,[†] Ramon Bataller,[‡] and Juan Pablo Arab, M.D.* 

ALCOHOL CONSUMPTION AND THE BURDEN OF LIVER DISEASES IN LATIN AMERICA

Alcohol-related liver disease (ALD) represents a major public health problem worldwide.¹ The region of The Americas has the second most deaths and disability-adjusted life-years attributable to alcohol consumption (5.5% and 6.7%, respectively) when compared with other regions (ranking led by the European region).² Latin America has high alcohol per capita consumption, and individuals older than 15 years drink 6.8 L of pure alcohol per year over the global average consumption (6.4 L per

capita).² Excessive alcohol intake is a significant risk factor for injuries, risky sexual behavior, infections, cardiovascular disease, cancer, and liver disease.¹ Approximately 35% of patients with alcohol use disorder (AUD) will develop some degree of chronic liver disease (steatohepatitis, fibrosis, cirrhosis, and/or hepatocellular carcinoma).³ In addition, patients with underlying ALD and high alcohol consumption can experience development of alcohol-related hepatitis, which is a life-threatening condition associated with a high short-term mortality rate.⁴ Even though alcohol is the leading cause of cirrhosis worldwide, it represents only the second indication for transplant in some Latin American countries (nonalcoholic

Abbreviations: AAFD, alcohol-attributable fractions for deaths; ALD, alcohol-related liver disease; APC, alcohol per capita consumption; AUD, alcohol use disorder; WHO, World Health Organization.

From the *Departamento de Gastroenterología, Escuela de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile;

[†]Departamento de Gastroenterología, Facultad de Medicina, Universidad de Chile, Hospital Clínico Universidad de Chile, Santiago, Chile;

[‡]Center for Liver Diseases, Division of Gastroenterology, Hepatology and Nutrition, University of Pittsburgh Medical Center, Pittsburgh, PA; and [§]Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, MN.

This article was partially supported by the Chilean government through the Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT 1200227 to J.P.A.) and the Comisión Nacional de Investigación Científica y Tecnológica (CONICYT, AFB170005, CARE Chile UC to J.P.A.).

Potential conflict of interest: R.B. received speaking fees from Echosens. The other authors have no disclosures.

Received April 28, 2020; accepted August 2, 2020.

View this article online at wileyonlinelibrary.com

© 2020 by the American Association for the Study of Liver Diseases

TABLE 1. DESCRIPTION OF LEADING INDICATORS OF ALCOHOL CONSUMPTION AND HEALTH CONSEQUENCES ACCORDING TO THE INCOME GROUP, 2016 (WORLD BANK CLASSIFICATION)

Income Groups (World Bank)	APC, 2016 ^{*,†,‡} (in Liters of Pure Alcohol)	Prevalence of AUD, ^{*,†} 2016	AAFD From All Causes ^{*,†} , 2016 (% of All Deaths)	National Policy and/or National Action Plan
Low and lower-middle	4.0	6.6%	5.7	0/6
Upper-middle	7.0	4.7%	6.1	5/12
High	9.5	6.1%	5.1	1/2

Estimations were made using fixed-effects models.

*Twenty countries were included.

†Age 15+ years old.

‡Recorded and unrecorded.

steatohepatitis being the leading indication). This discrepancy may reflect some combination of psychosocial rules around transplantation, bias against alcohol use, poor social support, psychiatric comorbidities, and lesser likelihood of having access to health care. Despite its huge burden, ALD receives only 5% of the overall liver attention by the medical and scientific community.⁵

IDENTIFYING THE POPULATION AT RISK

A recent study demonstrated that even low doses of alcohol intake (<10 g of pure alcohol per week), historically considered as protective, increase all-cause mortality.¹ Hence public health policies to reduce alcohol consumption may have a high impact on decreasing the burden of disease. Alcohol consumption represents a major health problem for Latin America. Countries with the most per capita consumption are Argentina, Brazil, Chile, Dominican Republic, Mexico, Panama, Paraguay, Peru, and Uruguay.² Furthermore, it is not easy to estimate alcohol consumption because of underreporting, especially in areas with high homemade alcohol production. Due to the critical sociodemographic differences between Latin American countries, there is an essential difference in the types of drink consumed (beer, wine, or spirits) and in access to alcohol (such as in the alcohol-producing regions). Overall, alcohol consumption represents more than 50% of the attributable fraction of cirrhosis in Latin America.⁶

We must consider several factors for the high burden of ALD in Latin America. The first factor is the high number of current drinkers aged between 15 and 19 years old (29.9%) in Latin America, which results in prolonged and harmful exposure to alcohol throughout life.^{1,7} Another important factor present is the high prevalence of alcohol consumption in women (41.9% in women ≥15 years

old). Women have increased susceptibility to development of ALD, even with lower alcohol consumption, despite a similar duration in years of alcohol intake.⁸ Genetic predisposition also plays a role in the susceptibility of some ethnic areas of Latin America. One of the most recognized is the Patatin-like phospholipase domain protein 3 (PNPLA3) I148M G/G polymorphism, which is significantly more frequent in individuals with Native American ancestry and is a risk factor for the development of ALD.⁹ Therefore, there are new high-risk groups in Latin America, such as youth, women, inhabitants of alcohol-producing areas, areas with high homemade alcohol production, among others. Thus, it is vital to identify these groups to prioritize the development of public health policies that primarily address these populations.

OVERCOMING INEQUITIES IN LATIN AMERICAN COUNTRIES

Several inequities identified in Latin America enhance the impact of alcohol, especially those regarding living conditions and timely access to the health care system. An important consequence of inequities is the “alcohol harm paradox” in which lower socioeconomic status is associated with higher mortality rate of alcohol-attributable causes despite lower socioeconomic groups often reporting lower levels of consumption. It was first described in the United Kingdom, but Latin America also faces the same paradox (Table 1).¹⁰ This paradox could reflect several problems that affect our region, including inequities in access to health systems, high rate of homemade alcohol production, and the potential susceptibility of some ethnicities. Alcohol consumption significantly affects Latin American countries, where only one-third of countries have seven or more alcohol public policies (Fig. 1), indicating that there is an urgent need to increase the number of public policies related to alcohol.

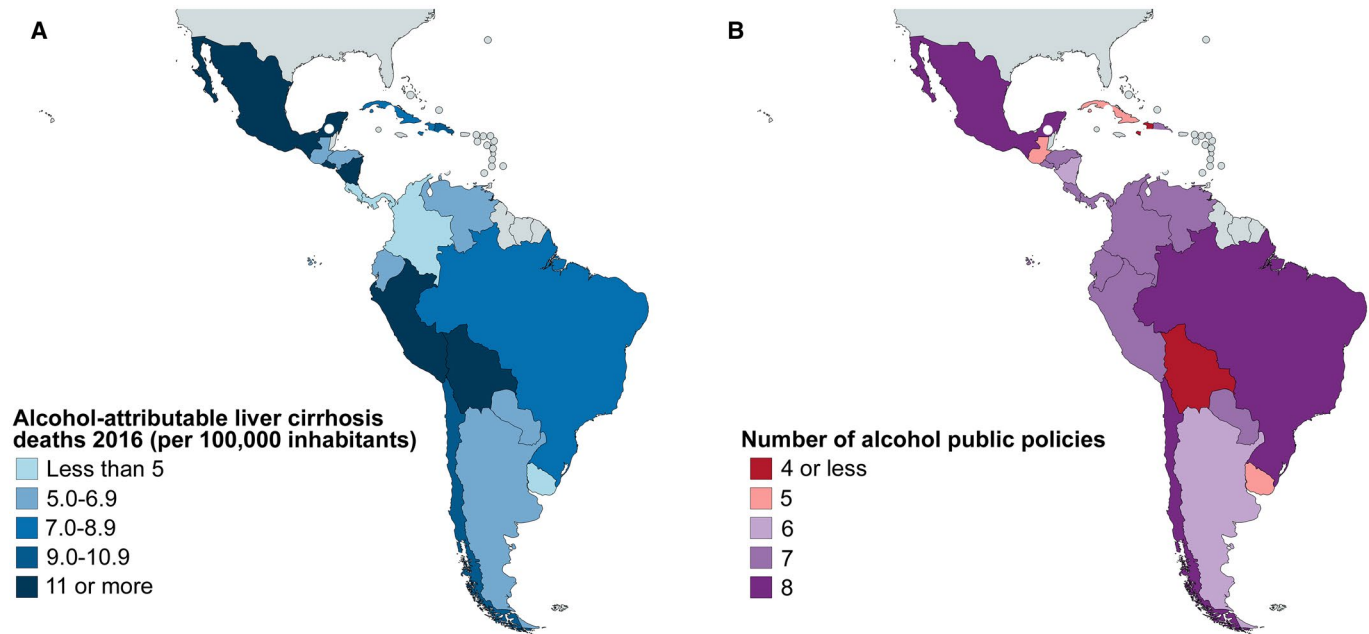


FIG 1 (A) Magnitude of the alcohol-related cirrhosis mortality among Latin American countries. (B) The number of alcohol public policies according to the WHO classification. Original figure based on data from the World Health Organization: Global status report on alcohol and health. 2018.

TAILORED PUBLIC POLICIES FOR REGIONAL AND GLOBAL ALCOHOL-RELATED PROBLEMS

The World Health Organization (WHO) categorizes the existing policies into eight categories, which include alcohol pricing, restrictions to alcohol access and consumption, control over alcohol advertising and promotion, among others. Ventura-Cots et al.¹¹ recently summarized alcohol public health policies observing that taxation and price regulation are the most effective policies to reduce alcohol-related mortality. We propose that the problem of alcohol must be handled in a multimodal dimension. This approach includes the promotion of public policies, early detection of high consumption in at-risk populations, the appropriate diagnosis of AUD, and the improvement of the health care system at a global level (preventive, liver diseases management, management of comorbid diseases that increase risk for liver diseases, treatment of mental disorders, among others). It is critical to identify the main factors related to alcohol consumption in each country. We must promote the development of public health policies to decrease alcohol consumption based on the eight categories proposed by the WHO, with emphasis on the predominant problems identified for each country. For example, in a country with high consumption in the adolescent population, it would be vital to develop public policies

focused on drinking age and youth focus policies, taxes control and pricing policies, and establishment of restrictions to alcohol access. Notably, alcohol consumption patterns can be strongly inherited and modulated by living in another country. For example, among Latin Americans living in the United States, 52% are current drinkers and 9% meet AUD criteria, which is higher than the Latin American prevalence rate (43.7% and 4.9%, respectively). The influence of acculturation to US mainstream society on alcohol use patterns appears to vary by background (heritage), generational status, and gender.¹² This underlines the importance of tailoring research and intervention programs to examine the impact of alcohol public policies for different countries. The development of these policies must be only the beginning of improvement in all the categories of alcohol public policies. Hence we emphasize the need for development of other public policies and promote other measures in multimodal dimension.

In conclusion, alcohol consumption has a high impact on the Latin American population, especially in low- and lower-middle-income countries. The lack of public policies and a national plan to face alcohol-related problems exacerbates the burden of ALD. It is critical to promote alcohol public policies with emphasis on the predominant problem for each country and develop measures to improve in a multimodal dimension.

KEY POINTS

- Alcohol consumption represents a significant burden of liver diseases and mortality in Latin America.
- There are new high-risk groups in Latin America, such as youth and women, consumption of high-alcohol content beverages, inhabitants of alcohol-producing areas, or areas with high homemade alcohol production.
- Public health policies have a fundamental role in the reduction of alcohol-related mortality. However, there are inequities among Latin American countries regarding current legislation of alcohol public health policies.
- It is key to promote tailored alcohol public health policies, focused on the predominant problems for each country. This strategy could have a high impact on Latin America and other regions of the world.

CORRESPONDENCE

Juan Pablo Arab, M.D., Departamento de Gastroenterología, Escuela de Medicina, Pontificia Universidad Católica de Chile, Marcoleta 367 8330024, Santiago, Chile. E-mail: jparab@uc.cl

REFERENCES

- 1) Griswold MG, Fullman N, Hawley C, et al. Alcohol use and burden for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet* 2018;392:1015-1035.
- 2) Poznyak V, Rekke D. Global Status Report on Alcohol and Health 2018. License: CC BY-NC-SA 3.0 IGO. Geneva: World Health Organization; 2018. Available at: <https://apps.who.int/iris/handle/10665/274603>.
- 3) Arab JP, Roblero JP, Altamirano J, et al. Alcohol-related liver disease: clinical practice guidelines by the Latin American Association for the Study of the Liver (ALEH). *Ann Hepatol* 2019;18:518-535.
- 4) Altamirano J, Higuera-de laTijera F, Duarte-Rojo A, et al. The amount of alcohol consumption negatively impacts short-term mortality in Mexican patients with alcoholic hepatitis. *Am J Gastroenterol* 2011;106:1472-1480.
- 5) Ndugga N, Lightbourne TG, Javaherian K, et al. Disparities between research attention and burden in liver diseases: implications on uneven advances in pharmacological therapies in Europe and the USA. *BMJ Open* 2017;7:e013620.
- 6) Stein E, Cruz-Lemini M, Altamirano J, et al. Heavy daily alcohol intake at the population level predicts the weight of alcohol in cirrhosis burden worldwide. *J Hepatol* 2016;65:998-1005.
- 7) Hagstrom H, Hemmingsson T, Discacciati A, et al. Alcohol consumption in late adolescence is associated with an increased risk of severe liver disease later in life. *J Hepatol* 2018;68:505-510.
- 8) Nielsen JK, Olafsson S, Bergmann OM, et al. Lifetime drinking history in patients with alcoholic liver disease and patients with alcohol use disorder without liver disease. *Scand J Gastroenterol* 2017;52:762-767.
- 9) Martinez LA, Larrieta E, Kershenobich D, et al. The expression of PNPLA3 polymorphism could be the key for severe liver disease in NAFLD in Hispanic population. *Ann Hepatol* 2017;16:909-915.
- 10) Arab JP, Bataller R, Roblero JP. Are we really taking care of alcohol-related liver disease in Latin America? *Clin Liver Dis* 2020;16:91-95.
- 11) Ventura-Cots M, Ballester-Ferré MP, Ravi S, et al. Public health policies and alcohol-related liver disease. *JHEP Rep* 2019;1:403-413.
- 12) Castañeda SF, Garcia ML, Lopez-Gurrola M, et al. Alcohol use, acculturation and socioeconomic status among Hispanic/Latino men and women: The Hispanic Community Health Study/Study of Latinos. *PLoS One* 2019;14:e0214906.