MEDICINA CLÍNICA Y SOCIAL
Med. clín. soc. 2026;10(1):e547. e-ISSN: 2521-2281
https://doi.org/10.52379/mcs.v10.547

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ORIGINAL

Association of sexual orientation with current alcohol drinking and cigarette smoking in Colombian adults from the general population

Asociación de la orientación sexual con el consumo actual de alcohol y de cigarrillo en adultos colombianos de la población general

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Received: 24/11/2024
Accepted: 22/03/2026
Published: 21/04/2026

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Responsible Editor
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Conflicts of Interest
The authors declare that they have no conflicts of interest.

Funding
The authors received no financial support for the research, authorship, and/or publication of this article

ABSTRACT

Introduction: The available data present an inconsistent association between sexual orientation and alcohol or cigarette consumption in high-income countries. However, such studies are scarce in low- and middle-income countries. **Objective:** The study aimed to estimate the association between sexual orientation and current alcohol drinking and cigarette smoking among Colombian adults. **Methodology:** A secondary analysis of the National Survey on the Consumption of Psychoactive Substances was completed. Lay interviewers asked about sexual orientation, current alcohol drinking, and current cigarette smoking. Participants also completed the Patient Health Questionnaire-2 (PHQ-2) to assess depression risk. **Results:** 46,197 adults between 18 and 65 years (M=39.82, SD=13.83) participated; 59% were female. Lesbian/gay or bisexual (LGB) sexual orientation was related to current drinking alcohol (OR=1.63, 95%CI 1.37-1.94) and current cigarette smoking (OR=2.19, 95%CI 1.78-2.69). **Conclusion:** LGB sexual orientations were significantly related to current alcohol drinking and cigarette smoking. It is crucial to consider sexual orientation in alcohol and cigarette use prevention in Colombian adults.

Keywords: Sexual orientation; Alcohol drinking; Cigarette smoking; Colombia; Cross-sectional studies.

RESUMEN

Introducción: Los datos disponibles muestran una asociación inconsistente entre la orientación sexual y el consumo de alcohol o de cigarrillo en países de altos ingresos. Sin embargo, este tipo de estudios es escaso en países de ingresos bajos y medios. **Objetivo:** Estimar la asociación entre la orientación sexual, el consumo actual de alcohol y el consumo de cigarrillo en adultos colombianos. **Metodología:** Se realizó un análisis secundario de la Encuesta Nacional sobre el Consumo de Sustancias Psicoactivas. Los entrevistadores legos preguntaron sobre la orientación sexual y el consumo de alcohol y tabaco en el último mes. Además, los participantes completaron el Cuestionario de Salud del Paciente (PHQ-2) para evaluar el riesgo de depresión. **Resultados:** Participaron 46.197 adultos de 18 a 65 años (M = 39,82, DE = 13,83); el 59% eran mujeres. La orientación sexual lesbiana/gay o bisexual (LGB) se relacionó con el consumo actual de alcohol (OR=1,63; IC95% 1,37-1,94) y con el consumo actual de cigarrillos (OR=2,19; IC95% 1,78-2,69). **Conclusión:** Las orientaciones sexuales LGB se relacionaron significativamente con el consumo actual de alcohol y de cigarrillos. Es fundamental considerar la orientación sexual en la prevención del consumo de alcohol y cigarrillos en adultos colombianos.

Palabras clave: Orientación sexual; consumo de alcohol; consumo de cigarrillos; Colombia; estudios transversales.

How to cite this article: Campo-Arias A, Herazo E, Cassiani-Miranda CA. Association of sexual orientation with current alcohol drinking and cigarette smoking in Colombian adults from the general population. Med clín soc. 2026;10(1):e547.

INTRODUCTION

The prevalence of alcohol consumption is high among lesbian, gay, or bisexual (LGB) people (1). It has been documented that those LGB sexual orientations are associated with drinking alcohol. King et al. (2) observed in a meta-analysis that alcohol dependence and other substances over 12 months were also 1.5-fold higher among LGB people than their heterosexual counterparts. However, Bloomfield et al. (3), in a case-control study involving 248 gays and lesbians and 3,720 heterosexuals from several countries, found that gay and lesbian men with a partner or recent partner were at no greater risk of heavy drinking than heterosexual controls. Similarly, Tran et al. (4), in cross-sectional research with the participation of 462 LBG and 16,856 heterosexuals older than 50 years, concluded that the last year's alcohol use, abuse, or dependence was independent of sexual orientation, after controlling for psychological distress.

Similarly, cigarette smoking is often overrepresented among the LGB population in high-income countries (5,6). Li et al. (5) found a tobacco use prevalence of 38% among bisexual women, 32% lesbians, 31% gay men, 30% bisexual men, 21% heterosexual men, and 17% heterosexual women. Previously, Lee et al. (6), in another meta-analysis, concluded the existence of a high prevalence of smoking among the LGB population, with odds ratios between 1.5 and 2.5 when compared to heterosexual counterparts. Nevertheless, Ridner et al. (7) and Osibogun et al. (8) reported that the prevalence of current cigarette smoking was independent of sexual orientation.

The available data show an inconsistent association between sexual orientation and alcohol or cigarette consumption, which may be related to other social and cultural factors (9). Moreover, these studies are scarce in low- and middle-income countries, such as Colombia and Latin America, possibly due to limited research about stigma/discrimination among LGB people (10). The higher prevalence of alcohol drinking and cigarette smoking among LGB people can be explained by minority stress theory (11). Minority stress increases due to the lack of family support and the ongoing struggle of deciding whom to share one's sexual orientation openly (12). LGB people are more vulnerable to new stressors and are more likely to experience depressive symptoms, stress, and dysfunctional coping, such as substance use (13-15).

It is essential to monitor the impact of prevention policies and programs across different communities and disaggregate the data by gender identity and sexual orientation. To this end, it is necessary to conduct population-based epidemiological studies that demonstrate the need for programs grounded in equality and non-discrimination to enable socially excluded groups to enjoy all human rights (16). In the present study, depressive symptoms are controlled, given their high frequency in LGB people who have experienced situations of discrimination related to sexual orientation (17), and these symptoms are often associated with alcohol and cigarette use (18).

The study aimed to estimate the association between sexual orientation and current alcohol drinking and current cigarette smoking in Colombian adults.

METHODOLOGY

A secondary analysis of the National Survey on the Consumption of Psychoactive Substances (ENCSPA) was completed. The general population was selected through a multistage probability sampling of Colombian households. People aged 18 to 65 were included in the study, regardless of gender, sexual orientation, education, marital status, income, or ethnicity.

The survey was conducted in 2019. The Colombian Drug Observatory (COC), attached to the Ministry of Justice, provided the database in response to an email request. This study did not require evaluation by a research ethics board because public information was analyzed without participants' data, in accordance with Colombian norms (19).

Lay interviewers asked about demographic information, gender, sexual orientation, and alcohol and cigarette use. Additionally, participants completed the Patient Health Questionnaire, PHQ-2 (20).

Alcohol and cigarette use in the last month were inquired: Have you smoked cigarettes/tobacco in the last 30 days? Have you consumed alcoholic beverages in the last 30 days? In addition, the number of days of use was asked, between 1 and 30. Current use was defined as consumption over 30 days, including everyday use in the last month.

The PHQ-2 is a two-item instrument derived from the PHQ-9 that explores the central and essential symptoms of a major depressive episode during the last two weeks: depressed mood and decreased interest in pleasurable activities or anhedonia. The PHQ-2 offers dichotomous responses: Yes or No. The

affirmative answer to one of the items is considered a depression risk (20). The PHQ-2 previously showed high internal consistency, sensitivity, and specificity in Colombian adults (21). In the present study, the PHQ-2 showed a Cronbach's alpha of 0.81.

Sexual orientation was evaluated with a single question: Which of these alternatives best defines your sexual orientation? The question offered four options: Heterosexual, gay or lesbian, bisexual, and others. This variable was dichotomized into heterosexual and LGB people.

A descriptive analysis was accomplished; frequencies and percentages were observed. Incomplete questionnaires were excluded from the analysis. Sexual orientation was the independent variable, and drinking alcohol and cigarette smoking were the dependent variables. Demographic variables and depression risk were taken as confounding variables. Confounding variables must be simultaneously significantly associated with sexual orientation and alcohol or cigarette consumption. Crude odds ratios (ORs) were calculated with 95% confidence intervals (CIs). The OR values with a lower limit of the 95% CI equal to or greater than 1.00 were considered significant.

The OR was adjusted using binomial logistic regression, following Greenland's recommendations. The recommendations for adjustment included considering only confounding variables that induce variation in the OR of more than 10% (22). The analysis was completed using IBM SPSS Statistics, version 27 (23).

RESULTS

The study had the participation of 46,197 adults between 18 and 65 years (M=39.82, SD=13.83); 59% were female; 43% had a secondary education; 51% were single or widowed; 18% belonged to an ethnic minority (Afro-Colombian and other); 64%, low income; 1%, LGB sexual orientation; 14%, depression risk; 10%, current cigarette smoking; and 31%, current alcohol use. The variable distribution was different between the LGB participants and heterosexual participants. A single grouping category was preferred small sample size of the LGB people. See more details in Table 1.

The crude association of LGB sexual orientation with current alcohol use (OR=2.29, 95%CI 1.94-2.71) and current cigarette smoking (OR=2.63, 95%CI 2.15-3.21) were statistically significant. The associations remained significant 95%CIs within significant ranges after adjustment for confounding variables. LGB sexual orientation was associated with current alcohol use (OR=1.63, 95%CI 1.37-1.94) after adjusting for depression risk and demographic variables excluding ethnicity. Similarly, LGB sexual orientation was associated with current cigarette smoking (OR=2.19, 95%CI 1.78-2.69) after adjusting for depression risk and demographic variables excluding age.

TABLE 1. PARTICIPANT CHARACTERISTICS, DEPRESSION RISK, AND CURRENT ALCOHOL DRINKING AND CIGARETTE SMOKING AMONG LGB AND HETEROSEXUAL ADULTS (N=46,197).

	Sexual orientation (%)		
Variable	LGB [n=562]	Heterosexual [n=45,635]	p
Age, year			
18-29	300 (53.38)	13,219 (28.97)	0.001
30-45	160 (28.47)	15,736 (34.48)	
46-65	102 (18.15)	16,680 (36.55)	
Gender			
Female	228 (42.35)	26,842 (58.82)	0.001
Male	324 (57.65)	18,793 (41.18)	
Education			
Primary	31 (5.52)	7,019 (15.38)	0.001
Secondary	180 (32.03)	19,663 (43.08)	
University	311 (55.34)	16,819 (36.86)	
No answer	40 (7.11)	2,134 (4.68)	
Marital status			
Single or widowed	441 (78.47)	22,985 (50.37)	0.001
Married or free union	121 (21.53)	22,650 (49.63)	
Ethnic			
General	488 (86,83)	37,289 (81.71)	0.002
Minority	74 (13.17)	8,346 (18.29)	
Income			
Low	280 (49.82)	28,989 (63.52)	0.001
Middle	234 (41.64)	14,725 (32.27)	
High	45 (8.01)	1,664 (3.65)	
No answer	3 (0.53)	257 (0.56)	
Depression risk			
Yes	95 (16.90)	6,300 (13.81)	0.035
No	467 (83.10)	39,335 (86,19)	
Current alcohol drinking			
Yes	281 (50.00)	13,850 (30.35)	0.001
No	281 (50.00)	31,785 (69.65)	
Current cigarette smoking			
Yes	128 (22.78)	4,603 (10.09)	0.001
No	434 (77.22)	41,032 (89.91)	

DISCUSSION

The present study's findings show a statistically significant association between LGB sexual orientations and cigarette and alcohol consumption in the general Colombian population after adjusting for sociodemographic covariates and depressive symptoms.

The current findings are consistent with studies in high-income countries that show that people with LGB sexual orientations have an increased risk of alcohol use and cigarette smoking. Similarly, King et al. (2) found that last year, alcohol dependence and other substances were also 1.5 times higher among LGBs than among heterosexual people. Besides, Ridner et al. (7) documented that sexual orientation was unrelated to cigarette smoking. However, Bloomfield et al. (3) found that gays and lesbians have a similar risk of heavy drinking or common drinking as heterosexual participants. Tran et al. (4) reported that last year, alcohol use, abuse, or dependence was unrelated to sexual orientation among people over 50 years. Li et al. (5) reported that tobacco use was higher for bisexual, lesbian, gay, and bisexual men than for heterosexual men and women. Lee et al. (6) found that smoking rates were between 1.5 and 2.5 times higher among LGB and heterosexual people. Nevertheless, Osibogun et al. (8) documented the equivalent prevalence of current cigarette smoking among heterosexual and LBG people.

Differences in relationships among variables are common across studies and are influenced by the variety of demographic backgrounds, research designs, measurement tools, and statistical methods used to assess causality (24). Additionally, it is crucial to recognize that alcohol and cigarette use are complex issues shaped by numerous personal, family, social, cultural, and structural factors that are not addressed in the current analysis (9).

Alcohol and tobacco use are complex public health problems that overlap biological and sociocultural factors (9). Alcohol drinking and cigarette smoking are essential factors contributing to morbidity and mortality worldwide, including in low- and middle-income countries such as Latin America (25,26). Alcohol and nicotine are Colombia's main gateways to illegal substance use (27). Additionally, in LGB people, drinking alcohol is associated with sexual behaviors that increase the risk of sexually transmitted infections (28).

The prevention and reduction of alcohol and cigarette smoking must consider the particularities of each population. Healthcare professionals working in addictions play a crucial role in the prevention and evaluation of people at high risk for alcohol, tobacco, and other substance use. Physicians, nurses, and other healthcare professionals can help increase public health knowledge about substance use through education, leadership, care innovations, and epidemiological data (29). Sexual orientation is a variable that has been repeatedly undervalued in prevention programs for the consumption of legal and illegal substances (16). Sexual identity is a social determinant that influences substance use and mental health, and it should always be considered an important variable, measured accurately and reliably (30). The public health impact will be huge if preventive and rehabilitation programs are designed to help LGB people cope with stressors related to sexual identity (31).

Seventy percent of the Colombian LGB population reports experiencing some form of discrimination (32). Then, it is necessary to continue actions to reduce stigma and discrimination related to sexual identities or orientations in all areas and contexts of daily social life; to date, most interventions have been carried out in the school context (33).

The present study has the novelty of showing the association of sexual orientation with the consumption of alcohol and cigarettes in a Colombian representative sample. Besides, depressive symptoms were controlled because they are a variable that can generally confuse the association of LGB orientations with alcohol drinking and cigarette smoking (13-15,34).

However, it was impossible to analyze each sexual orientation independently, as sexual orientation is not a homogeneous category (35). There are differences in alcohol and tobacco use among LGB people (2,5,6). Furthermore, lay interviewers' evaluation of sexual orientation has a high possibility of bias due to social desirability (30). Additionally, the estimates were not adjusted for the sampling method because insufficient information was available about the process (36). Future research should consider broader populations to enable stratified analyses by sexual orientation. Likewise, it is crucial to use a more valid and reliable method of assessing sexual orientation.

In conclusion, LGB people have a higher risk of current smoking and alcohol use than their heterosexual counterparts. It is necessary to consider sexual orientation to prevent and reduce alcohol and cigarette consumption in Colombian adults.

AUTHORS CONTRIBUTIONS

All authors participated in the research's conception and design and accepted the final version for publication.

EDITORIAL NOTE

The opinions expressed in this article, as well as the methodological approach and the results presented, are the sole responsibility of the authors. This work was reviewed and approved by external peer reviewers as part of the editorial process; however, it does not necessarily reflect the official position of the journal, its editorial committee, or its editor-in-chief

DATA AVAILABILITY

The data are available upon request to the corresponding author: Adalberto Campo Arias. Email: acampoa@unimagdalena.edu.co

REVIEWER COMMENTS

The external reviewers' reports and their official verdicts are available at the following link: Dictamen 547

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