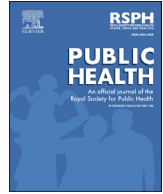




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Short Communication

Who wears the face mask? Preventive measures against COVID-19 in Latin America before vaccination

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ABSTRACT

Objectives: We analyze the profile of adults who used a mask in the context of the COVID-19 pandemic in Latin America, between October and November 2020, right before the mass vaccination campaigns.**Study design:** Based on the Latinobarometer 2020 data, we assess the individual, regional, cultural and political factors of people who used a mask in the context of the COVID-19 pandemic in 18 countries of Latin America.**Methods:** We applied a logistic regression to model the probability of using the mask regularly to avoid being infected with the COVID-19 virus.**Results:** Women, older people, those with higher education, those being employed and not working in temporarily jobs, retirees, students, people with a centrist political ideology, and Catholics had a higher chance of using a face mask on a regular basis. People living in Venezuela, Chile, Costa Rica and Brazil were the most likely to use face masks.**Conclusion:** These results highlight the need to understand the social forces behind the willingness to adopt non-pharmacological preventive measures to make them more effective in health crisis emergencies.

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Introduction

The World Health Organization (WHO) recommended the use of face masks as one of the main measures to prevent COVID-19 transmission. However, the medical discourse about preventive measures is mediated by a range of factors that affect their implementation, such as gender constructions in health care,¹ risk perception related to age and care attitudes linked to educational level² and also political orientation and religious affiliation.³ In the specific context of COVID-19, the role of national governments in recognizing the magnitude of the pandemic and their willingness to implement the WHO health recommendations were also critical. The latter has been especially relevant in Latin America, where political instability, low levels of investment in public health systems, and the idiosyncrasy of each government defined different public interventions and prevention messages sent to the population.⁴

The use of the face mask was related to the individual perception of risk, the feeling of responsibility and solidarity, cultural and religious traditions, and the need to express their own identity in an earlier study.⁵ In relation to the adoption of protective attitudes against respiratory epidemics, a study before COVID-19, found that women were more inclined to adopt non-pharmacological preventive measures (such as the use of mask, washing hands and avoiding public transport), whereas men were more prone to pharmacological measures such as vaccination and antiviral medication.⁶ Regarding political ideology, being of right-wing ideology in the United States (US) was correlated with the belief that the use of mask would not prevent the spread of the COVID-19 virus,⁷ and accordingly, the US was the only country where government supporters were less likely to follow health prevention guidelines against COVID-19 in a cross-country study,³ showing the importance of the government position for individual prevention attitudes.

Previous studies analyzing mask wearing determinants in Latin America have been conducted at the national level, but cross-country comparisons are important to put into perspective the diversity of individual attitudes and governmental responses to the

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pandemic. Moreover, the use of a face mask during the COVID-19 pandemic has not been a trivial act, and it is important to understand the determinants that influence this decision to obtain lessons and design more effective preventive campaigns to manage future health crises. A transnational analysis in Latin America can allow us to understand the different levels of influence that are interconnected in the individual decision to wear a mask as a protective measure against the COVID-19 virus. This study aims to develop a descriptive analysis of the profile of people who wear masks and to understand the importance of the cultural and sociopolitical context of individuals in Latin America. We carried out logistic regression models controlling for all the demographic, socio-economic and country variables, relevant to understand the determinants of preventive behaviors.

Data and methods

The Latinobarometer [Latinobarómetro] is a representative population survey conducted between October 26 and November 17, 2020, in 18 Latin American countries. The sample includes 20,204 people, ranging from 1000 to 1200 adults interviewed by country. We eliminated 127 minors, 89 people who did not answer the question about the use of masks, and three people who did not report their educational level.

We performed a logistic regression of the binary-dependent variable created from the question about the use of mask on a regular basis to not get infected with the COVID-19 virus. The model included as independent variables the gender (male/female), age (18–25, 26–40, 41–60, and ≥61 years), educational level (illiterate, basic education completed, completed high school, completed higher education), current occupational status (self-employed, salaried, retired or pensioned, unemployed and student), political ideology (left, center left, center, center right, right), religion (Catholic, Evangelical, others, none) and the country of residence (see Table 1). Survey's interviews were conducted face-to-face.

Results

Table 1 shows the results of the multivariate regression model, indicating women use more the mask than men (odds ratio [OR] = 1.488; P value <0.001). Younger people are less likely to use a mask, although a greater correlation is not observed among the population aged >60 years (OR = 1.576; P value <0.001) compared with those aged between 41 and 60 years (OR = 1.580; P value <0.001). Those with higher educational level, have a higher chance of wearing a mask, and differences are significant for people with higher education (OR = 2.102; P value <0.001) and secondary education (OR = 1.401; P value <0.01). Employees, temporarily unemployed people, retirees and students use the mask to a greater extent than people who are self-employed. Self-perceived social class in the bivariate analysis (results not shown here) indicates that the middle class is more likely to use masks than the upper class but this is not significant in the multivariate analysis.

Regarding religion, Catholics have a higher chance of wearing the mask than Evangelicals (OR = 1.292; P value <0.001), whereas other religions and people who declare no religion show no significant difference. The results on political ideology indicate that people from the center right (OR = 1.443; P value <0.01) and center (OR = 1.502; P value <0.001), as well as those with missing values (OR = 1.386; P value <0.01) use the mask to a greater extent than right-wing people. However, there are no significant differences between people who is on the right with respect to those on the left, center left or without political ideology. Compared with Brazil,

Table 1

Logistic regression over the regular use of face mask in Latin American countries.

Variables	Odds Ratio	Std. err.
Sex (Men)		
Women	1.488	(0.087)***
Age (18–25)		
26–40	1.186	(0.086)*
41–60	1.580	(0.127)***
61+	1.576	(0.166)***
Education (Illiterate)		
Basic	1.110	(0.111)
Secondary	1.401	(0.147)**
Tertiary	2.102	(0.256)***
Labor activity (self-employed)		
Employee	1.431	(0.117)***
Unemployed	1.317	(0.135)**
Retired	1.723	(0.286)**
Inactive	1.039	(0.075)
Student	1.388	(0.21)*
Social Class (High)		
Medium	1.215	(0.129)
Low	1.046	(0.105)
Missing	0.906	(0.132)
Religion (Evangelical)		
Catholic	1.292	(0.094)***
Other	1.060	(0.148)
None	0.820	(0.072)
Missing	0.624	(0.112)
Political ideology (Right)		
Center-Right	1.443	(0.156)**
Center	1.508	(0.15)***
Center-Left	1.097	(0.109)
Left	0.870	(0.091)
None	1.235	(0.152)
Missing	1.386	(0.161)**
Country (Brazil)		
Argentina	0.617	(0.121)*
Bolivia	0.180	(0.03)***
Chile	1.385	(0.327)
Colombia	0.505	(0.093)***
Costa Rica	1.259	(0.283)
Dominican Rep.	0.524	(0.097)***
Ecuador	0.915	(0.187)
El Salvador	0.933	(0.191)
Guatemala	0.997	(0.202)
Honduras	0.678	(0.128)*
Mexico	0.191	(0.032)***
Nicaragua	0.350	(0.062)***
Panama	0.663	(0.128)*
Paraguay	0.402	(0.072)***
Peru	0.663	(0.126)*
Uruguay	0.789	(0.156)
Venezuela	2.094	(0.541)**
Constant	5.736	(1.286)***
N	19988	

*** P <0.001; ** P <0.01, * P <0.05

the reference category, the only country where the use of masks is significantly higher is Venezuela (OR = 2.070; P value <0.01), although Chile and Costa Rica also showed non-significant higher rates. In contrast, the use of the mask is lower in Bolivia, Colombia, the Dominican Republic, Honduras, Mexico, Nicaragua, Panama, Paraguay, and Peru.

Discussion

Here we profile individuals who commonly used a mask between October and November 2020 before the vaccination campaign started in Latin America. The results of this analysis are consistent with previous studies showing that men are more prone to risky behaviors than women.² Although young people are less

likely to use masks, both the middle-aged and oldest-age groups showed similar propensity, suggesting that the age perception of risk started earlier than the actual risk. The finding that higher levels of education are associated with greater use of masks is consistent with previous studies where higher educational levels are associated with healthier behaviors.²

Regarding occupational status, the fact that retirees or pensioners are more likely to use face masks than those who are self-employed is related to the fact that older people are the most vulnerable group to the virus.⁸ In addition, students might be more likely to use them because of the mandatory use of face masks in educational centers. We also find that the employees and the unemployed are more likely to wear a mask than the self-employed. In this sense, it should be noted that although we control for the current occupational situation, the survey does not have variables that allow us to control which people can perform their daily lives without having to leave their homes, where the use of a face mask would not be so necessary. Social class does not show significant results, but this may be a limitation of the self-perceived question to capture this dimension. Unlike countries such as the US, where political orientation shapes prevention behaviors,³ the results of our study indicate that there is no left-right polarization of mask use in Latin America. Interestingly, centrist people are the most likely to wear a mask. In this sense, religion, which has also been present in discussions about the pandemic,⁹ also shapes prevention behaviors. Those belonging to the Evangelical religion wear a mask to a lesser extent than Catholics. These findings raise many questions about the role of religions in promoting health behaviors and the arguments that certain religions make against medical discourse. Finally, Venezuela, Chile, Costa Rica and Brazil are the countries in Latin America where the use of a mask is highest. In the case of Brazil, the lack of rapid and equitable responses from the government might have led the population to increase their prevention attitudes against the virus.¹⁰ Regarding Venezuela, the country has deepened its political and economic crisis since COVID-19, and there has been a lack of credibility from the citizenship in the reported cases because of the shortage of virus tests.¹¹

The study presents some limitations that should be noted. First, the sample size may be too small for some big countries such as Brazil or Mexico, which can limit the generalization of findings. Second, the cross-sectional nature of the survey does not allow to establish causal relationships between variables. Finally, it is an inherent limitation of surveys that participants provide socially desirable responses, which cannot be overcome considering that the survey does not include questions that allow to control for this. Future research should aim to address these limitations.

The use of face mask to prevent COVID-19 infection was uneven across individual, regional, cultural and ideological factors in Latin America. The analysis showed the importance of understanding the demographic and socio-economic profile of those individuals more prone to use preventive measures to stop the spread of the pandemic in the region, and the critical role of social forces—through religion and political ideas—in shaping health-related attitudes in a health emergency crisis.

Author statements

Ethical approval

This article adheres to ethical standards and complies with relevant guidelines for using secondary survey data. Data on the research is done are freely available and ensure the confidentiality and privacy of the participants in accordance with relevant laws and regulations. The analysis presented here are available upon request.

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Competing interests

None declared.

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