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Original Research

The sociodemographic patterning of opposition to raising taxes on tobacco and restricting tobacco advertisements in Argentina



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ABSTRACT

Background: Argentina has enacted important tobacco control initiatives in recent years. Yet little is known about the social patterning of attitudes toward tobacco control. Research is needed to explore what predicts opposition to tobacco control initiatives such as higher taxes on tobacco and the prohibition of tobacco advertising.

Study design: Secondary analysis of Argentina's Global Adult Tobacco Survey (N = 6645). Methods: Binary logistic regression analysis examining opposition to raising tobacco taxes and banning tobacco publicity. Models were stratified by smoking status.

Results: Respondents generally indicated very little opposition to either tobacco control measure, with only 15.6% of respondents opposed to increasing taxes on tobacco products and 9.6% opposed to banning tobacco advertisements. Smoking status is the most important predictor of opposition to increasing taxes (OR = 7.85, 95% CI = 6.60-9.34) and banning advertisements (OR = 1.72, 95% CI = 1.39-2.11). Opposition to these measures is most likely among young respondents (aged 15-24) and least likely among older age groups (55–64 and 65 or over), compared to the 25-34 age group. Stratified models suggest that the effect of age may be different for smokers and non-smokers. Low income is a significant predictor of opposition, but only in stratified models for smokers.

Conclusion: There is general support for stronger tobacco control measures in Argentina. Opposition to raising taxes on tobacco products and banning tobacco advertisement appears to be concentrated among young smokers with low and medium levels of household income.

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Introduction

Non-communicable diseases are the leading cause of death in Argentina,^{1,2} and tobacco use is known to be the country's foremost preventable cause of death.³ The latest estimates suggest that tobacco use is responsible for 40,000 deaths annually.⁴ The country is in stage four of the tobacco epidemic, experiencing decreases in the prevalence of smoking among both men and women in recent years.² Yet while the overall prevalence of tobacco consumption may be decreasing, tobacco consumption remains a key driver of health inequalities. National survey data from 2005 suggest a strong socio-economic patterning for tobacco use among adults, with statistically significant gradients for both men and women in the 18–24 age group.⁵

Tobacco smoking in Argentina is decreasing but is still a public health priority, with 22.1% of the adult population being a current smoker, according to Global Adult Tobacco Survey (GATS).¹ Exposure to second-hand smoke (SHS) is a significant problem, with the latest data showing that 46.8% of non-smokers are exposed. Exposure to tobacco advertisements is high, with 51.3% of adults noticing cigarette advertisements/ promotions (other than in stores), or sporting event sponsorship and 63.4% of adults noticing anti-cigarette smoking information on the television or radio. At the same time, Argentina's GATS data suggests widespread knowledge about the health consequences of smoking and about the dangers of being exposed to SHS, and almost half (48.6%) of smokers made a quit attempt in the last 12 months.¹

Argentina has not ratified the Framework Convention on Tobacco Control (FCTC) but has adopted most of their recommendations through the National Tobacco Control Law, sanctioned in 2011. These measures include a wide ranging ban on tobacco product advertising (with the only exception of point of sale advertisements), smoke-free environments, and pictorial health warnings in tobacco products.⁶ It is estimated that these measures, in addition to previously existing subnational laws, have yielded a decrease of 900,000 smokers in the past eight years.⁷ Although new taxation was not included in the National Tobacco Control Law, taxes currently represent approximately 70% of the final price of tobacco products,^{7,8} accomplishing the suggested level of taxation of the World Health Organization.⁹ However, the production of tobacco products is very cheap in the country, and cigarettes in Argentina – despite existing levels of taxation – are among the most affordable in Latin America.^{7,8}

In multicountry studies, there is evidence of public support for smoking bans in public places,¹⁰ bars and restaurants.¹¹ Furthermore, studies in other countries suggest that the general public is generally in support of comprehensive bans on the advertising of tobacco products¹² and is also in support of increasing taxation for the purpose of reducing demand for tobacco.^{13,14} Currently, little is known about social attitudes toward these tobacco control initiatives in Argentina. Given that the country's current Tobacco Control Act does not prohibit point of sale advertising and did not introduce new taxes on tobacco products, it is critically important to better understand the population's attitudes towards these initiatives, and in particular, the predictors of opposition to these initiatives. The GATS, implemented in Argentina in 2012, offers the opportunity to explore population attitudes towards tobacco control for the first time in the country.

This study seeks to assess the social patterning of attitudes toward tobacco control. In particular, the social factors are examined that may be associated with opposing two critical tobacco control initiatives: higher taxes on tobacco and the prohibition on tobacco advertising.

Methods

Data source

The GATS is a global standard for systematically monitoring adult tobacco use and tracking key tobacco control indicators. GATS uses a global standardized methodology and includes information on respondents' background characteristics, tobacco use (smoking and smokeless), cessation, SHS, economics, media, and knowledge, attitudes and perceptions towards tobacco use.¹⁵ In Argentina, as an initiative of the Ministry of Health, GATS was conducted in 2012 as a household survey of persons 15 years of age and older by National Institute of Statistics and Censuses (INDEC). A multistage, geographically clustered sample design was used to produce nationally representative data. A total of 9790 households were sampled and one individual was randomly selected from each participating household to complete the survey. Survey information was collected electronically by using handheld devices. There were a total of 6645 completed individual interviews with an overall response rate of 74.3%. Additional methodological details were published elsewhere.¹

Variables

Two variables are used to operationalize respondents' attitudes toward tobacco control. First, the attitudes toward raising tobacco taxes ('Would you favor or oppose increasing taxes on tobacco products?', coded 1 = opposed, 0 = in favor or don't know) were examined. Second, the attitudes towards banning tobacco publicity ('Would you favor or oppose a law prohibiting all advertisements for tobacco products', coded 1 = opposed, 0 = in favor or don't know) were examined. As per GATS analysis and reporting guidelines, 'don't know' responses for these attitude variables were included in the analysis.¹⁶

Socio-economic status was measured using three indicators: educational attainment, household income, and household wealth. Educational attainment was coded in four categories (less than primary, completed primary/less than secondary, secondary completed, and some college/university or more). Household income was categorized into three groups: 0 - 3,000, 0,000 and greater than 7,000,following INDEC protocol. The household wealth variable was constructed using principal components analysis (PCA) with information on household ownership of assets.^{17–19} The GATS questionnaire collects information on whether households possess items such as a fixed or cellular telephone, television, car or motorcycle, washing machine, etc. Following common practice, the first component was retained, and categorized it into five economic groups, the lowest 20% referring to the poorest quintile and the highest 20% referring to the richest quintile.^{20,21} Along with socio-economic status, sex and age were also considered as independent variables.

Smoking status was assessed relying on self-reported information and defined using the Global Tobacco Surveillance System methodology,¹⁵ with current smokers being comprised of current daily and less than daily tobacco smokers. Age was treated as a categorical variable, following the GATS Reporting and Analysis Guidelines¹⁶ and previous work using Argentina's GATS data.²²

Analysis

Data analysis was conducted using Stata version 12. The analysis took into account the complex survey design, using stata's svy features to account for weight, clustering, and strata. Binary logistic regression models were developed to analyze socio-economic differences in relation to tobacco control, with all models stratified by smoking status.²³

Results

Respondents indicated generally very little opposition to either tobacco control measure, with only 15.6% of respondents opposed to increasing taxes on tobacco products and 9.6% opposed to banning tobacco advertisements (see Table 1).

Smokers are significantly more likely than non-smokers to oppose increasing taxes (37.0% vs 9.3%, P < 0.001; see Table 2). Smokers are also more likely to oppose prohibiting advertisements (13.0% vs 8.7%), but this difference was not statistically significant. Age, education, income and wealth differences between smokers and non-smokers are also explored in Table 2, with statistically significant differences only with age.

Logistic regression analysis examining opposition to increasing taxes on tobacco products is presented in Table 3. In the combined model, smoking status is the most important predictor of opposition (OR = 7.85, 95% CI = 6.60–9.34). A pattern by age emerges, with opposition to increasing taxes being more likely among young respondents (aged 15–24; OR = 1.58, 95% CI = 1.25–2.01) and less likely among older age groups (55–64 and 65 or over), compared to the 25–34 age

Table 1 — Level of support for selected new tobacco control initiatives.						
	Oppose	Don't know	In favor	Total		
'Would you favor or oppose increasing taxes on tobacco products?' (N = 6632)	15.6%	9.7%	74.8%	100%		
'Would you favor or oppose a law prohibiting all advertisements for tobacco products?' (N = 6630)	9.6%	8.5%	81.8%	100%		

Table 2 – Description of the sample, by smoking status.							
	Smok	Total					
	Smokers	Non-smokers					
	(N = 1650)	(N = 4995)	(N = 6645)				
Dependent variables							
'Would you favor	37.0	9.3	15.6				
or oppose increasing							
taxes on tobacco							
products?'							
(% oppose)*							
'Would you favor	13.0	8.7	9.6				
or oppose							
a law prohibiting all							
advertisements for							
tobacco products?'							
(% oppose)							
Independent variables							
(% by smoking status)							
Age ¹	00.7	047	04.0				
15–24 (years)	22.7	24.7 17 E	24.3				
25-34 (years)	24.1	17.5	18.9				
35-44 (years)	17.0	14.1	14.0				
45-54 (years)	10.2	14.2	14.3				
$65 \perp (vears)$	53	15.9	13.5				
Education	5.5	15.5	15.5				
Less than primary	8.0	9,9	9.5				
Primary completed/less	42.9	41.6	41.9				
than secondary							
Secondary completed	20.6	19.9	20.1				
Some college/university	28.5	28.6	28.6				
Household income							
0-3000 (\$)	44.3	39.9	43.3				
3001-7000 (\$)	39.3	41.9	39.8				
7001+ (\$)	16.5	18.2	16.8				
Wealth index							
Poorest	16.7	15.8	16.0				
2	16.8	15.8	16.0				
Middle	13.6	10.8	11.4				
4	21.5	23.1	22.8				
Richest	31.4	34.5	33.8				
Note: * Statistically significant difference between current smokers							

Note: * Statistically significant difference between current smokers and former/never smokers.

group. No statistically significant effects are observed for education, income, or wealth index in the combined model.

In the stratified model, the effect of age appears to be different for smokers and non-smokers. In contrast to the 25-34 year old reference group, respondents aged 15-24 years are more likely to oppose increasing taxes on tobacco products if they are a smoker (OR = 2.53, 95% CI = 1.41-4.51); the effect is not statistically significant for non-smokers (OR = 1.35, 95% CI = 0.45-4.03). In the combined model, being in an older age group was associated with being less likely to oppose new taxation on tobacco; in the stratified models, this effect is significant only among non-smokers. In the combined model, income did not hold any statistical significance. In the stratified model, respondents with low household income are more likely to oppose increasing taxes if they are smokers (OR = 2.90, 95% CI = 1.23-6.85 for the lowest income group and OR = 2.51, 95% = 1.73-5.88 for the middle income group).

don't knowj.							
	Smokers		Non	Non-smokers		Total	
	OR	95% CI	OR	95% CI	OR	95% CI	
Current smoker							
Yes	-	-	-	-	7.85	(6.60–9.34)	
No	-	-	-	-	1.00	-	
Sex							
Female	1.00	-	1.00	-	1.00	-	
Male	0.82	(0.51–1.30)	0.77	(0.36–1.63)	0.96	(0.81–1.14)	
Age							
15–24 (years)	2.53	(1.41–4.51)	1.35	(0.45-4.03)	1.58	(1.25–2.01)	
25–34 (years)	1.00	-	1.00	-	1.00	-	
35–44 (years)	0.42	(0.19–0.95)	0.62	(0.23–1.65)	0.77	(0.60-1.00)	
45–54 (years)	0.82	(0.38–1.74)	1.14	(0.34–3.85)	0.85	(0.64–1.12)	
55—64 (years)	1.36	(0.44-4.28)	0.27	(0.08–0.90)	0.68	(0.49–0.94)	
65+ (years)	0.50	(0.20-1.24)	0.15	(0.05-0.47)	0.70	(0.51–0.98)	
Education							
Less than primary	0.86	(0.32-2.32)	2.36	(0.71–7.90)	0.94	(0.66–1.33)	
Primary completed/less than secondary	1.03	(0.58–1.84)	1.37	(0.62–3.03)	1.13	(0.91–1.41)	
Secondary completed	0.51	(0.23–1.15)	0.57	(0.21–1.57)	0.87	(0.68–1.12)	
Some college/university	1.00	-	1.00	-	1.00	-	
Household income							
0–3000 (\$)	2.90	(1.23–6.85)	1.30	(0.53–3.18)	0.91	(0.69–1.21)	
3001–7000 (\$)	2.51	(1.07–5.88)	1.46	(0.57–3.74)	0.84	(0.65–1.10)	
7001+ (\$)	1.00	-	1.00	-	1.00	-	
Wealth index							
Poorest	0.86	(0.42-1.73)	1.39	(0.52–3.74)	1.16	(0.88–1.52)	
2	0.78	(0.38–1.59)	0.97	(0.36–2.60)	0.76	(0.56–1.04)	
Middle	0.65	(0.31-1.39)	0.91	(0.33–2.50)	0.86	(0.67–1.09)	
4	0.67	(0.31–1.49)	1.06	(0.38–2.56)	0.82	(0.59–1.12)	
Richest	1.00	-	1.00	-	1.00	-	
Ν	1436		4265		5701		

Table 3 – Logistic regression predicting opposition to increasing taxes on tobacco products (1 = opposed, 0 = in favor or don't know).

Logistic regression analysis examining opposition to prohibiting advertisements of tobacco products is presented in Table 4. In the combined model, smoking status is an important predictor of opposition (OR = 1.72, 95% CI = 1.39-2.11), and the age patterned observed in Table 2 is repeated, with opposition being most likely among the young (OR = 1.48, 95% CI = 1.13-1.95) and least likely among older age groups, in comparison to the 24–35 years reference group. Education and income do not hold statistical significance, but the wealth index does, with opposition to restricting tobacco advertisements decreasing in a gradient-like pattern through the wealth spectrum.

The stratified models for opposition to tobacco advertising show that the effect of age may be different for smokers and non-smokers. Respondents aged 15–24 years are most likely to oppose restricting tobacco advertisements if they are smokers (OR = 3.13, 95% CI = 1.45-6.74), with a non-significant effect for non-smokers (OR = 1.83, 95% CI = 0.65-5.16). In the combined model, being in an older age group was associated with being less likely to oppose restrictions on advertisements; in the stratified models, this effect is significant only among non-smokers as well as smokers aged 65 or over. Respondents with low household income are generally more likely to oppose prohibiting advertisements, but the effect is statistically significant only among smokers in the middle income group.

Discussion

The analysis of Argentina's GATS data shows that, in general, there is strong support for tobacco control measures, with only small minorities of respondents expressing opposition to increasing taxes on tobacco products and to prohibiting advertisements for tobacco products. This is consistent with findings from surveys in a wide range of countries, including Australia, Britain, Canada, Georgia, Netherlands, New Zealand, South Africa, and the United States.^{10–14} However, this support is not truly widespread in Argentina, with almost 40% of smokers responding being opposed to increasing taxes on tobacco products. In general, no statistically significant differences were observed by education or household wealth, suggesting support for these initiatives across the socioeconomic spectrum. Opposition to these initiatives is highest among young people (respondents aged 15-24) as well as smokers with low household income. Opposition is least likely among older age groups. These findings could be the basis for targeted health promotion programs for young people, highlighting the need to work with communities on the dangers of tobacco consumption.

The findings further strengthen the existing literature demonstrating public support for government actions to control the tobacco industry.^{13,14} Together with a growing literature that has modelled the significant decreases in

Table 4 – Logistic regression predicting opposition to a law prohibiting all advertisements for tobacco products (1 = opposed, 0 = in favor or don't know).

	Smokers		Non-smokers		Total	
	OR	95% CI	OR	95% CI	OR	95% CI
Current smoker						
Yes	-	-	-	-	1.72	(1.39–2.11)
No	-	-	-	-	1.00	-
Sex						
Female	1.00	-	1.00	-	1.00	-
Male	1.90	(0.88-4.12)	1.53	(0.65–3.58)	1.16	(0.95–1.42)
Age						
15—24 (years)	3.13	(1.45–6.74)	1.83	(0.65–5.16)	1.48	(1.13–1.95)
25–34 (years)	1.00	-	1.00	-	1.00	-
35–44 (years)	0.71	(0.25–1.95)	0.80	(0.33–1.95)	0.91	(0.68–1.22)
45–54 (years)	0.72	(0.28–1.84)	0.21	(0.06–0.79)	0.70	(0.49–0.99)
55–64 (years)	2.22	(1.20–4.11)	0.24	(0.04–1.35)	0.59	(0.40-0.88)
65+ (years)	0.29	(0.09–0.94)	0.23	(0.06–0.86)	0.52	(0.35–0.78)
Education						
Less than primary	0.95	(0.23–3.87)	2.06	(0.43–9.81)	0.77	(0.49–1.21)
Primary completed/less than secondary	1.33	(0.62–2.85)	1.58	(0.63–3.88)	1.00	(0.77-1.28)
Secondary completed	1.07	(0.41–2.81)	1.05	(0.40–2.77)	1.06	(0.80-1.39)
Some college/university	1.00	-	1.00	-	1.00	-
Household income						
0-3000 (\$)	2.23	(0.80–6.24)	1.49	(0.53–4.15)	0.92	(0.68–1.25)
3001–7000 (\$)	2.49	(1.04–5.94)	1.44	(0.39–5.38)	0.76	(0.56–1.01)
7001+ (\$)	1.00	-	1.00	-	1.00	-
Wealth index						
Poorest	0.59	(0.17–2.08)	0.76	(0.23–2.53)	0.62	(0.45–0.85)
2	0.99	(0.16–6.14)	0.66	(0.18–2.44)	0.64	(0.46–0.91)
Middle	0.49	(0.20–1.19)	0.64	(0.19–2.14)	0.72	(0.55–0.94)
4	0.28	(0.11–0.76)	0.44	(0.16–1.21)	0.74	(0.52-1.05)
Richest	1.00	-	1.00	-	1.00	-
Ν	1436		4266		5702	

tobacco consumption that may be generated by increasing tobacco taxes^{24,25} and by implementing comprehensive bans on tobacco advertising,²⁶ the results contribute to the momentum for implementing additional tobacco control initiatives in Argentina. Local price-demand elasticity studies suggests an increase of 100% in the final price of cigarettes could decrease consumption by 31%²⁷ and avoid more than 15,000 coronary heart disease deaths in the next 10 years.⁶ At the same time, the country has a very strong tobacco industry with a history of intense lobbying and litigation efforts to block tobacco control.^{28,29}

There are several limitations to this analysis. As a consequence of the relatively small sample size in the GATS survey, the authors were not able to explore provincial or urban-rural differences. Given the significant between-province differences that exist in Argentina, it would be important to do so in future studies. Additionally, they could not explore contextual effects since GATS contains only individual-level information. Previous research indicates that contextual effects (e.g., characteristics of cities and communities) influence smoking behaviour^{30–32}; these contextual effects may similarly influence social attitudes toward tobacco control. They have also operationalized the dependent variables around the notion of opposition, grouping together 'don't know' and 'in favor' responses. Other studies in this field have investigated support for, rather than opposition to, tobacco control initiatives.^{12,33} Some care must be taken, therefore, in comparing results

from studies using these different operationalization strategies. In the case of Argentina, with a new Tobacco Control Act which did not prohibit point of sale advertising or introduce new taxes on tobacco products, an understanding of the predictors of opposition to these initiatives is a public health priority. Lastly, GATS is based entirely on self-reported information; social desirability and other forms of bias may be present in the data. To the knowledge this is the first study to analyze the sociodemographic patterning of attitudes towards tobacco control in Latin America. Future studies should explore the feasibility of comparing GATS data on social attitudes across countries in the region.

In conclusion, there is widespread public support for tobacco control measures in Argentina. Opposition to raising taxes on tobacco products and banning tobacco advertisement appears to be concentrated among young smokers with low and medium levels of household income.

Author statements

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Ethical approval

Ethical approval was not necessary since it is a secondary analysis of a public use database with anonymous data.

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Competing interests

No competing interests to declare.

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