

Use of tobacco and exposure to tobacco smoke in Brazil: results from the National Health Survey 2013

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Abstract

Objective: to describe indicators related to tobacco use and exposure to tobacco smoke in Brazil. Methods: this was a descriptive study using National Health Survey 2013 data. Results: prevalence of current tobacco use was 15.0% (95%CI 14.4%-15.5%), mainly via smoking (14.7%; 95%CI 14.2%-15.2%); in the 12 months preceding the interview, 51% (95%CI 49.3%-52.9%) of current smokers had tried to quit smoking; the prevalence of former smokers was 17.5% (95%CI 16.9%-18.0%), 19.2% (95%CI 18.3%-20.1%) in males and 11.2% (95%CI 10.6%-11.8%) in females; prevalence of exposure to tobacco smoke at home was 10.7% (95%CI 10.2%-11.3%) whilst in enclosed work places it was 13.5% (95%CI 12.6%-14.4%). Conclusion: in comparison with other countries, the prevalence of tobacco consumption in Brazil was low, as was exposure to tobacco smoke; nevertheless, around one-sixth of the population consumed some kind of tobacco product.

Key words: Smoking; Chronic Disease; Health Surveys; Passive Smoking; Epidemiology, Descriptive.

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Introduction

Smoking is one of the main risk factors for non-communicable diseases (NCDs). The NCDs contribute to a higher burden of diseases worldwide.¹ In 2007, 63% of the global deaths and 72.4% of the deaths in Brazil were attributed to NCDs.¹⁻³

The exposure to tobacco is associated with the occurrence of various circulatory diseases (hypertension, cerebrovascular accident and heart attack), cancer (lung, oral cavity, oesophagus, stomach, colon, bladder, kidneys and cervix), chronic respiratory diseases (chronic obstructive pulmonary disease), ocular problems (cataract and blindness), intrauterine growth retardation, apart from being an important risk factor for communicable diseases, such as tuberculosis.^{4,5}

The growth of mortality associated with tobacco is being documented for many decades. The habit of smoking may increase the risk of death in 20 to 30 times, whereas the passive smoker also has his or her mortality rates increased.^{1,4-7} In Brazil, it is estimated that around 200 thousand annual deaths are due to smoking.⁸

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In 1989, the first survey on the prevalence of smoking in Brazil was carried out. It showed a percentage of 34.8% in adults⁹; subsequent surveys revealed a continuous decrease of such habit, as it happened with the 2003 World Health Survey⁹ (22.4%) and the 2008 National Smoking Survey (*PETaB*) (18.5%).^{10,11} The Surveillance System of Risk and Protective Factors for Chronic Diseases by Telephone Survey (*Vigitel*), conducted annually since 2006, also points out a continuous decrease of the smoking prevalence in Brazilian capitals.¹²

In 2003, the Surveillance System of Risk Factors for NCDs was implemented in the country, starting the monitoring of these risk factors, such as smoking.¹³ In 2005, Brazil signed the Framework Convention on Tobacco Control, committing itself to the continuous monitoring of tobacco consumption in Brazil.¹¹ The first National Health Survey (PNS), conducted in 2013,

enabled the continuity of the monitoring of tobacco products in the whole country, with the inclusion of the same international tools of data collection used in 2008: the standard questionnaire (shortened) of the Global Tobacco Adult Survey (GATS).^{14,15}

The GATS questionnaire covers questions on the use of products of (1) smoked tobacco (industrialized cigarettes; hay or hand-rolled cigarettes; Indian cigarettes [known in India by 'bidis']; clove cigarettes [or 'from Bali']; pipes; cigars or cigarillo; *narguillé*) and (2) non-smoked tobacco (chewing tobacco, such as '*fumo de mascar*'; or snuff tobacco, such as '*rapê*'). Other thematic parts of the questionnaire refer to the cessation of tobacco use, exposure to the smoke from tobacco products, media exposure for and against tobacco and expenses with industrialized cigarettes. Since it is a tool that has been used in many countries, the GATS allows the comparison of results among countries that took part in the Global Tobacco Surveillance System (GTSS), from the World Health Organization (WHO) and the Pan-American Health Organization (PAHO) in partnership with the Institute for Global Tobacco Control, Johns Hopkins Bloomberg School of Public Health. Brazil was the first country in the Americas to conduct the survey and the second country in the world to perform the second inquiry.

This work aims to describe indicators related to the use and exposure to tobacco smoke in Brazil, using data from the National Health Survey 2013.

Methods

This is a descriptive study with data from the National Health Survey (PNS), conducted in 2013. The PNS is a household-based survey that composes the Household Surveys Integrated System (*SIPD*) from the Brazilian Institute of Geography and Statistics (*IBGE*) and makes use of the Master Sample of this System, with wider geographical spread and better estimates accuracy. The PNS was designed to collect information related to life and health condition, lifestyles, NCDs and use of health services. The data collection was made between August 2013 and February 2014.^{14,15}

Cluster sampling was conducted in three stages: census sectors or the set of these sectors form the Primary Sampling Units (PSU), the households were the units of the second stage and adult residents (aged 18 years or more) defined the units of the third stage.¹⁴ The survey

was composed by three questionnaires: the household questionnaire, related to the characteristics of the household; the questionnaire related to all residents of the household; and the individual questionnaire, answered by an adult resident aged 18 or more.¹⁴ Interviews were conducted in 64,348 households and 60,202 individuals answered to the individual questionnaire, which resulted in a non-response rate of 8.1%.¹⁵

The interviews were conducted using personal digital assistance (PDA) handheld computers, programmed for critical processing variables. The study considered and selected the following indicators:

- a) Prevalence of current users of tobacco: number of individuals users of derived products of tobacco that emit smoke or not, divided by the number of individuals interviewed (independent of the amount consumed, the frequency and the duration) x100.
- b) Prevalence of current smokers of tobacco: number of current individuals smokers of tobacco divided by the number of individuals interviewed x100.
- c) Prevalence of daily smokers of tobacco: number of daily individuals smokers of tobacco divided by the number of individuals interviewed x100.
- d) Prevalence of current smokers of cigarettes: number of current individuals smokers of cigarettes divided by the number of individuals interviewed x100.
- e) Prevalence of former smokers: number of former smokers individuals divided by the number of individuals interviewed x100.
In this indicator, former smokers were considered as individuals who answered negatively to the question *“Are you a currently smoker of any tobacco product?”* and that answered positively to the question *“And in the past, did you use to smoke any tobacco product?”*
- f) Prevalence of smokers who tried to quit smoking in the 12 months preceding the interview: number of current individuals smokers of tobacco who tried to quit smoking in the 12 months preceding the interview divided by the number of individuals interviewed who are currently smokers or who quit smoking for less than 1 year x100.
- g) Prevalence of individuals who sought for treatment: number of individuals who sought for treatment with a health professional to try quit smoking in the 12 months preceding the interview divided by the number of individuals who are currently smoking and tried to quit smoking in the 12 months preceding the interview or that quit smoking in less than 1 year x100.
- h) Prevalence of individuals who got treatment: number of individuals who got treatment with a health professional to try quit smoking in the 12 months preceding the interview divided by the number of individuals who looked for treatment with a health professional to try quit smoking in the 12 months preceding the interview x100.
- i) Prevalence of people aged 18 years old or more exposed to tobacco smoke at home: number of non-smoker individuals exposed to smoke inside their own household at least once a month divided by the number of individuals interviewed x100.
- j) Prevalence of people aged 18 years old or more exposed to tobacco smoke at work place: number of non-smoker individuals exposed to smoke inside their own enclosed work place in the 30 days preceding the interview divided by the number of individuals interviewed who work indoors x100.
- k) Prevalence of people exposed to pro-tobacco media: number of individuals who saw any cigarette advertisement on sale spots in the 30 days preceding the interview divided by the number of individuals interviewed x100.
- l) Prevalence of people exposed anti-tobacco media: number of individuals who saw or heard any anti-tobacco information on television or radio in the 30 days preceding the interview divided by the number of individuals interviewed x100.
- m) Prevalence of smokers exposed to warnings: number of smoker individuals who saw any picture or anti-tobacco advertisement on cigarettes packets: in the 30 days preceding the interview divided by the number of smokers interviewed.
- n) Prevalence of current smokers who thought of quitting smoking due to pictures or warnings on cigarettes packets: number of individuals who thought of quit smoking due to the advertisement

in the packets of cigarettes divided by the number of smokers interviewed.

The prevalences and the respective confidence intervals (95%CI) were calculated to the total of the population and according to sex (male; female), age group (in years: 18 to 24; 25 to 39; 40 to 50; 60 or more), education level (no schooling and incomplete primary school; complete primary school and incomplete secondary school; complete secondary school and incomplete tertiary school; complete tertiary school), ethnicity/skin color (white; black; brown; yellow; and indigenous), country regions (North; Northeast; Southeast; South; and Central-West), household area (urban; rural) and State. The statistical analysis was conducted by the Statistical Analysis Software (SAS)®.

This study was approved by the National Commission for Ethics in Research (CONEP) of the National Health Council (CNS), under the Decree n. 328,159, of June 26, 2013.

Results

In Brazil, in 2013, the prevalence of the current consumption of tobacco by people aged 18 years or

more was estimated in 15.0% (95%CI 14.4%-15.5%), 19.2% (95%CI 18.3%-20.1%) among men and 11.2% (95%CI 10.6%-11.8%) among women. Such prevalence corresponded to 21.8 million of Brazilians (Table 1). The prevalence was lower among youngsters aged 18 to 24 years old (10.7%; 95%CI 9.5%-11.9%) and higher among adults aged 40 to 59 years old (19.4%; 95%CI 18.4%-20.4%) (Table 2). As for the education level, the lowest prevalence of adults who are current consumers of tobacco was found among those with higher education levels (8.8%; 95%CI 7.6%-10.0%), and the highest, among those individuals with no schooling or with incomplete primary school (20.2%; 95%CI 19.3%-21.1%) (Table 3).

Regarding the characteristics of skin color or ethnicity, it was possible to observe that all the respondents who have white skin color, 13.1% (95%CI 12.4%-13.8%) declared themselves as current consumers of tobacco, followed by 16.4% (95%CI 15.6%-17.2%) of brown skinned individuals and 17.8% (95%CI 15.9%-19.8%) of individuals with black skin (Table 4).

The prevalence of current tobacco smoking was higher in the rural area, comparing to the urban area of the country (Figure 1). According to States, the higher prevalences were observed in the states of Acre, Mato

Table 1 – Prevalence and population estimate (in absolute numbers) of the indicators of smoking according to sex – National Health Survey. Brazil, 2013

Indicators	Brazil						
	Total			Sex			
	Expanded population (x1000)	%	95%CI ^a	Male		Female	
%				95%CI ^a	%	95%CI ^a	
Current users of tobacco	21,878	15.0	14.4-15.5	19.2	18.3-20.1	11.2	10.6-11.8
Current smokers of tobacco	21,519	14.7	14.2-15.2	18.9	18.0-19.7	11.0	10.4-11.6
Daily smokers of tobacco	18,628	12.7	12.2-13.2	16.2	15.4-17.0	9.7	9.1-10.2
Current smokers of cigarettes	21,204	14.5	14.0-15.0	18.7	17.8-19.5	10.8	10.2-11.3
Former smokers	25,541	17.5	16.9-18.0	21.2	20.3-22.1	14.1	13.4-14.8
Tried to quit smoking	11,893	51.1	49.3-52.9	47.9	45.5-50.4	55.9	53.3-58.6
Sought for treatment	1,049	8.8	7.3-10.3	6.2	4.4-7.9	12.3	9.7-14.9
Got treatment	767	73.1	65.3-80.9	74.7	63.0-86.3	72.1	61.8-82.4
Passive smokers at home	13,371	10.7	10.2-11.3	9.5	8.8-10.3	11.7	10.9-12.4
Passive smokers at work	7,578	13.5	12.6-14.4	16.9	15.5-18.2	10.4	9.3-11.5
Media pro-tobacco	42,011	28.7	27.9-29.6	32.4	31.2-33.6	25.4	24.4-26.4
Media anti-tobacco	76,257	52.1	51.1-53.1	53.0	51.7-54.3	51.3	50.1-52.5
Smokers exposed to warnings	18,540	86.2	84.8-87.6	85.8	83.9-87.8	86.7	84.8-88.5
Considered quit smoking due to warnings	11,248	52.3	50.3-54.2	50.6	48.0-56.1	54.9	52.1-57.7

a) 95%CI: 95% confidence interval

Table 2 – Prevalence of the indicators of smoking according to age group – National Health Survey. Brazil, 2013

Indicators	Total		Age groups (in years)							
			18 to 24		25 to 39		40 to 59		60 or more	
	%	95%CI	%	95%CI	%	95%CI	%	95%CI	%	95%CI
Current users of tobacco	15.0	14.4-15.5	10.7	9.5-11.9	13.2	12.4-14.0	19.4	18.4-20.4	13.3	12.2-14.2
Current smokers of tobacco	14.7	14.2-15.2	10.6	9.4-11.8	13.1	12.3-13.9	19.2	18.2-20.2	12.6	11.6-13.7
Daily smokers of tobacco	12.7	12.2-13.2	8.1	6.9-9.3	10.9	10.2-11.7	17.2	16.3-18.2	11.4	10.4-12.5
Current smokers of cigarettes	14.5	14.0-15.0	10.5	9.3-11.7	12.9	12.1-13.7	19.0	18.1-20.0	12.2	11.1-13.3
Former smokers	17.5	16.9-18	5.6	4.8-6.5	11.5	10.6-12.4	21.3	20.2-22.3	31.1	29.6-32.6
Tried to quit smoking	51.1	49.3-52.9	54.0	48.1-60.0	53.7	50.4-56.9	50.4	47.7-53.1	45.9	41.3-50.4
Sought for treatment	8.8	7.3-10.3	3.4	0.5-6.4	5.2	3.4-7.0	12.4	9.8-15.0	10.6	6.5-14.7
Got treatment	73.1	65.3-80.9	38.7	0.1-80.7	74.0	55.5-92.5	73.0	62.6-83.5	82.9	69.3-96.5
Passive smokers at home	10.7	10.2-11.3	16.2	14.6-17.8	9.6	8.8-10.4	9.2	8.4-10.0	10.4	9.2-11.5
Passive smokers at work	13.5	12.6-14.4	13.7	11.4-15.9	13.8	12.5-15.1	13.3	12.0-14.6	11.9	9.1-14.6
Media pro-tobacco	28.7	27.9-29.6	31.2	29.3-33.0	31.4	30.2-32.7	29.2	27.9-30.5	20.9	19.4-22.3
Media anti-tobacco	52.1	51.1-53.1	49.0	46.9-51.0	53.0	51.7-54.4	53.6	52.1-55.0	50.5	48.7-52.3
Smokers exposed to warnings	86.2	84.8-87.6	89.1	84.9-93.4	87.7	85.1-90.3	87.7	86.1-89.3	76.7	72.7-80.6
Considered quit smoking due to warnings	52.3	50.3-54.2	50.0	43.1-56.9	52.1	48.7-55.5	57.2	54.4-60.0	40.0	35.6-44.5

a) 95%CI: 95% confidence interval

Table 3 – Prevalence of the indicators of smoking according to education level – National Health Survey. Brazil, 2013

Indicators	Education level									
	Total		No schooling and incomplete primary school		Complete primary school and incomplete secondary school		Complete secondary school and incomplete tertiary school		Complete tertiary school	
	%	95%CI	%	95%CI	%	95%CI	%	95%CI	%	95%CI
Current users of tobacco	15.0	14.4-15.5	20.2	19.3-21.1	16.6	15.1-18.1	10.4	9.6-11.2	8.8	7.6-10.0
Current smokers of tobacco	14.7	14.2-15.2	19.7	18.8-20.5	16.5	15.1-18.0	10.3	9.5-11.0	8.7	7.5-9.9
Daily smokers of tobacco	12.7	12.2-13.2	17.3	16.4-18.1	14.3	12.9-15.7	8.7	8.0-9.5	7.2	6.2-8.2
Current smokers of cigarettes	14.5	14.0-15.0	19.3	18.4-20.1	16.4	14.9-17.9	10.2	9.4-11.0	8.7	7.5-9.8
Former smokers	17.5	16.9-18.0	24.2	23.2-25.2	14.8	13.5-16.2	11.9	11.0-12.8	14.4	12.9-15.8
Tried to quit smoking	51.1	49.3-52.9	51.6	49.2-54.0	52.4	47.5-57.3	51.1	47.1-55.0	44.8	38.6-51
Sought for treatment	8.8	7.3-10.3	8.1	6.2-10.0	6.0	3.2-8.8	9.6	6.6-12.7	18.7	10.8-26.6
Got treatment	73.1	65.3-80.9	74.6	63.4-85.9	64.5	40.4-88.7	63.9	46.9-80.9	91.5	80.0-103.0
Passive smokers at home	10.7	10.2-11.3	13.1	12.2-14.1	11.8	10.5-13.1	9.4	8.5-10.2	6.4	5.2-7.7
Passive smokers at work	13.5	12.6-14.4	21.0	18.8-23.2	15.9	13.7-18.2	12.4	11.1-13.7	7.1	5.6-8.6
Media pro-tobacco	28.7	27.9-29.6	24.7	23.5-25.8	31.3	29.5-33.1	32.2	30.9-33.5	28.9	26.7-31.1
Media anti-tobacco	52.1	51.1-53.1	53.6	52.2-55.0	53.0	51.0-55.0	52.0	50.5-53.5	46.8	44.4-49.2
Smokers exposed to warnings	86.2	84.8-87.6	81.1	79.1-83.0	90.6	87.5-93.7	92.6	90.4-94.7	91.5	87.2-95.9
Considered quit smoking due to warnings	52.3	50.3-54.2	53.1	50.6-55.6	54.9	49.9-59.9	52.6	48.5-56.7	39.4	33.3-45.6

a) 95%CI: 95% confidence interval

Table 4 – Prevalence of the indicators of smoking according to ethnicity/skin color – National Health Survey, Brazil, 2013

Indicators	Total		Ethnicity/skin color					
			White		Black		Brown	
	%	95%CI	%	95%CI	%	95%CI	%	95%CI
Current users of tobacco	15.0	14.4-15.5	13.1	12.4-13.8	17.8	15.9-19.8	16.4	15.6-17.2
Current smokers of tobacco	14.7	14.2-15.2	13.0	12.2-13.7	17.7	15.7-19.6	16.1	15.3-16.9
Daily smokers of tobacco	12.7	12.2-13.2	11.4	10.7-12.1	15.6	13.7-17.5	13.6	12.9-14.4
Current smokers of cigarettes	14.5	14.0-15.0	12.8	12.1-13.5	17.4	15.4-19.3	15.8	15.0-16.6
Former smokers	17.5	16.9-18	17.8	16.9-18.6	16.1	14.2-17.9	17.4	16.6-18.2
Tried to quit smoking	51.1	49.3-52.9	49.0	46.1-51.9	49.9	44-55.9	53.0	50.4-55.7
Sought for treatment	8.8	7.3-10.3	11.5	8.9-14.2	6.4	2.1-10.8	6.9	5.2-8.6
Got treatment	73.1	65.3-80.9	76.1	65.5-86.8	78.2	57.7-98.6	70.4	57.1-83.8
Passive smokers at home	10.7	10.2-11.3	9.8	9.0-10.6	11.8	10-13.6	11.7	10.9-12.5
Passive smokers at work	13.5	12.6-14.4	11.8	10.7-12.9	16.4	13.4-19.4	15.3	13.9-16.7
Media pro-tobacco	28.7	27.9-29.6	29.4	28.2-30.7	29.4	27.2-31.7	27.6	26.6-28.6
Media anti-tobacco	52.1	51.1-53.1	51.6	50.2-53.1	51.4	48.9-53.9	52.7	51.5-54.0
Smokers exposed to warnings	86.2	84.8-87.6	88.6	86.8-90.5	85.9	82.3-89.5	83.8	81.6-86.0
Considered quit smoking due to warnings	52.3	50.3-54.2	50.3	47.4-53.2	53.5	47.6-59.3	53.7	50.8-56.6

a) 95%CI: 95% confidence interval

Grosso do Sul, Paraná and Minas Gerais (Figure 1).

The prevalence of current tobacco smoking was 14.7% (95%CI 14.2%-15.2%), being 18.9% (95%CI 18.0%-19.7%) and 11% (95%CI 10.4%-11.6%), for male and female sex, respectively. The prevalence of current cigarette smoking was 14.5% (95%CI 14.0%-15.0%) (Table 1).

In Brazil, 51.1% (95%CI 49.3%-52.9%) of current smokers had tried to quit smoking in the 12 months preceding the interview. Women tried to quit more often than men: 55.9% (95%CI 53.3%-58.6%) versus 47.9% (95%CI 45.5%-50.4%). The prevalence of former smokers was 17.5% (95%CI 16.9%-18.0%), being higher among men than women. Approximately 73.1% (95%CI 65.3%-80.9%) of the people who tried to quit smoking in the 12 months preceding the interview managed to get medical treatment (Table 1).

Exposure to tobacco smoke at home, at least once a month, was reported by 10.7% (95%CI 10.2%-11.3%) of those who answered as non-smokers. Exposure to tobacco smoke at work place was reported by 13.5% (95%CI 12.6%-14.4%) of the non-smokers respondents who worked at enclosed places. Women had less exposure to tobacco smoke at work place than men (Table 1).

Anti-tobacco media in different communication means, including newspapers, magazines, television or

radio, was noticed by 52.1% (95%CI 51.1%-53.1%) of all respondents.

Among smokers, 86.2% (95%CI; 84.8%-87.6%) saw an anti-tobacco picture or warning on packets of cigarettes in the 30 days preceding the interview. More than half of the smokers (52.3%; 95%CI 50.3%-54.2%) thought of quitting smoking due to the warnings on the packets of cigarettes (Table 1). The proportion of those who reported noticing media that was in favour of tobacco was of 28.7% (95%CI; 27.9%-29.6%), higher among men (32.4%; 95%CI; 31.2-33.6%) comparing to women (25.4%; 95%CI 24.4%-26.4%) (Table 1)

Discussion

The present study estimated that approximately one sixth of the adult population – or 21.8 million people – consume some tobacco product, most of them making use of smoked tobacco. Men smoke more, as well as people with low education levels and brown and black skin. Youngsters aged 18 to 24 years old smoke less, whereas adults aged 44 to 54 years old smoke more; among the elderly, tobacco consumption is reduced. The prevalence of former smokers was close to one sixth of the population. Approximately half of the Brazilian smoking population have tried to quit smoking in the last 12 months preceding the interview, representing

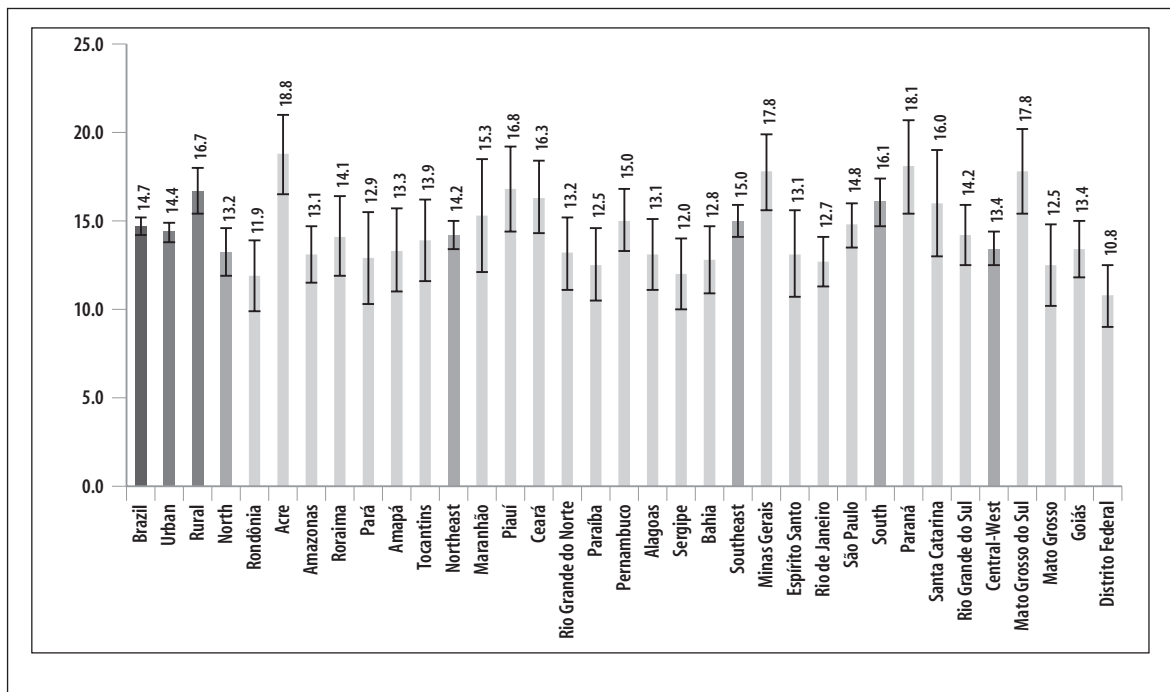


Figure 1 – Prevalence (%) and 95% confidence interval (95%CI) among current smokers of tobacco according to urban or rural area, country regions and States – National Health Survey, Brazil, 2013

25.5 million people aged 18 years old or more.

Half of the general population was exposed to anti-tobacco media and approximately one third to pro-tobacco media. Passive smokers at work – generally men – correspond to one tenth of the population. At home, women were more exposed to tobacco smoke. Among smokers exposed to warnings in packets of cigarettes, more than a half considered quit smoking.

Tobacco consumption in Brazil has decreased on the last decades.^{9,11,12} Data from the 2008 Brazilian National Household Survey (*PNAD*) have pointed out that, among individuals aged 18 or more, the prevalence of smoking was 18.2% for the total population: 22.9% for men and 13.9% for women.¹⁶ Comparing these data with PNS 2013 data, described in this present study (14.7%; 19.2%-11.2%), we can observe that there was a decrease of 19.2% on smoking among adult population.

Differences were observed in the prevalence of individuals who consume products of tobacco in urban and rural areas of the country, with higher prevalence in the rural area, fact already observed by *PNAD* 2008.¹⁰ Higher prevalences on the states of Acre, Mato Grosso do Sul, Paraná and Minas Gerais, also identified in *PETaB*¹⁰ may be explained by factors such as border region situation – where there is more product coming from

other countries and being sold –, tobacco producer region, like Paraná, besides cultural determinants.¹⁰

Brazil counts with one of the lowest prevalences of smoking, according to the Global Adult Tobacco Survey when comparing to 16 other countries – China, Russia, Thailand, Bangladesh, Egypt, India, Mexico, Philippines, Turkey, Ukraine, Vietnam and others –¹⁷ of which, together, represented approximately 3 billion inhabitants.

The same study has also found out that men smoke more than women.⁷ Cultural and religious aspects influence sex differences, resulting in prevalences of smoking lower than 2% for women who live in countries like Egypt, India and Bangladesh, whereas the same prevalences among men are above 30%.¹⁷ Considering the world by continental regions, such as Africa, Americas and Europe, the same trend to lower tobacco consumption among women was observed. In Occidental Pacific and Asian Southeastern regions, men smoke between 10 to 15 times more when comparing to women¹. Brazil follows the same trend, with prevalences among women representing approximately half of the prevalences correspondent to men.

Such behavior is due to the fact that tobacco consumption was primarily introduced among

men, associated to the joint idea of glamour and masculinity¹⁸; only later, mid XX century, the consumption of the product affected the female audience, associated to factors as women's independence and sex equality.^{18, 19}

This present study pointed out that the population with no schooling presents almost the double of smoking prevalence than those with higher education levels (Primary School and Tertiary School), as it was already outlined in studies carried out in Brazil^{10, 12} and in other countries.¹⁷

Individuals with black and brown skin color referred higher prevalence to tobacco consumption and exposure to its smoke, according to results in this present study. Surveys conducted in the United States of America pointed out different results, showing that people with black skin smoke less.²⁰

Passive smoking increases the risk of the exposed population to the development of the same diseases that active smoking produces, although with lower magnitude.²¹ In 2008, the percentage of passive smokers at work place, among people aged 15 or more, was 24.4% (PETaB).¹⁰ Current data, according to this study, revealed an important decrease to 14.4%, which represents approximately 7.5 million people. Such fact might be related to the set of action implemented in the period. With an even higher intense Legislation and the prohibition of smoked tobacco consumption in public closed places, as well as the enhancement of supervision, it is expected an even greater reduction of passive smoking at work place, for the following years.^{22, 24}

The reduction of smoking prevalence, verified on PNS 2013 data here analysed, may be related to actions developed on the last few years, whether these actions are educational, preventive, therapeutic or regulatory.^{7, 9, 21} After all, various actions were taken over the last years, such as the prohibition of partial advertisement on tobacco products in 1996, and the subsequent legislations which improved the legal term.²⁴

This process was consolidated by the Law nº 12,546/2011, about tobacco environment-free, which furthermore expanded to 85% the taxation over tobacco products, establishing a minimal price for cigarettes and prohibiting whatsoever advertisement of this product. The Presidential Decree n. 8,262/2014

regulated these actions, such as prohibition of smoked tobacco consumption in closed places, the regulation of cigarette exposure exclusively to sale points, in addition to expanding the space used by sanitary warnings²³. In December 4 2014, the Interministerial Ordinance n. 2,647, from December 4 2014, regulated the consumption of smoked tobacco in public places and established rules of protection to workers²⁵. In 2005, Brazil ratified the Framework Convention on Tobacco Control and since then, this treaty became the base of the National Policy of Tobacco Control (PNCT) with the implementation of a series of deals and actions¹¹. Thus, the country has been presenting better evidences of tobacco control:

- a) Prohibition of tobacco products sale to underage individuals;
- b) Prohibition of smoking in closed public places and transportation;
- c) Insertion of warnings on cigarette packets about the dangers of tobacco consumption;
- d) Raise of taxes and prices over tobacco products; and
- e) Prohibition of advertisement, sponsorship and tobacco promotion.

In 2011, the Strategic Action Plan to Tackle Non-communicable Diseases (NCDs) in Brazil 2011-2022^{24, 26} established as one of its goals, the reduction of smoking in the country in 30%, in a deadline of a decade. Data from PNS reinforced that the decrease of smoking has been continuous, making it fairly possible to reach a reduction of 30% on tobacco consumption and derivatives, on the established time.²⁶

Among the limits for the development of this present study, it should be noted the use of self-referred information to estimate smoking prevalences. This kind of information collection, recommended by international studies, allows the comparison of the results presented with the studies carried out in other countries.¹⁷

The results here described show that the prevalence of tobacco consumption in Brazil, compared to other countries, was low in the period analysed, in addition to confirming the decrease of this prevalence when these results are compared to previous ones. Furthermore, the findings of the National Health Survey 2013 show the progresses achieved on international commitments taken by Brazil regarding the control of tobacco consumption.

Authors' Contributions

Malta DC was responsible for the conception and drafting of the article, outlining of the study, analysis and data interpretation.

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CL participated in the writing and critical revision of the content, analysis and data interpretation.

All of the authors approved the final version of the manuscript and declared being responsible for all aspects of the work, guaranteeing its accuracy and integrity

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