



Smoking among industrial workers in Brazil: association with sociodemographic factors, alcohol consumption, and stress levels

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ABSTRACT

Objective: To determine the prevalence of smoking, as well as its association with sociodemographic factors, alcohol consumption, and stress levels, among industrial workers in Brazil. **Methods:** This was a nationwide survey, conducted in 24 capitals in Brazil through the application of a pre-tested questionnaire. The response to the question “What is your smoking status?” was the outcome variable. To determine the associations, we performed Poisson regression analyses in which the inputs were blocks of variables: block 1 (age and marital status); block 2 (level of education and gross family income); block 3 (geographic region); and block 4 (alcohol consumption and stress level). All analyses were stratified by gender. **Results:** The sample consisted of 47,328 workers ≥ 18 years of age, of whom 14,577 (30.8%) were women. The prevalence of smoking was 13.0% (15.2% in men and 7.9% in women). Advancing age, alcohol consumption, and a high stress level were positively associated with smoking. A lower risk of smoking was associated with being married, having a higher level of education, and living in the northeastern region of the country (versus the southern region). **Conclusions:** The prevalence of smoking was greater in men than in women. Alcohol consumption and high stress levels appear to promote smoking.

Keywords: Tobacco use disorder/epidemiology; Tobacco smoking; Occupational health; Industry; Brazil.

INTRODUCTION

Smoking is an important risk factor for various morbidities and is associated with early onset of cardiovascular diseases, respiratory diseases, some types of cancer, stroke, and increased mortality.⁽¹⁾ Nevertheless, 928 million men and 207 million women smoke.⁽²⁾

In Brazil, data from a nationwide telephone survey demonstrated a decrease in the prevalence of smokers ≥ 18 years of age: from 15.6% in 2006 to 10.8% in 2014.⁽³⁾ In 2017, this prevalence was close to 10%, being higher among men than among women (13.2% vs. 7.5%).⁽⁴⁾ Therefore, smoking differs by sociodemographic factors, such as gender and economic status.^(3,5) Studies have indicated that adult men⁽⁴⁾ with a low family income and a low level of education⁽⁶⁾ are more likely to smoke. In addition, certain risk conditions, such as alcohol consumption and stress levels, appear to be directly related to smoking.^(7,8)

It remains unknown whether the behaviors seen in the general population manifest themselves in the same pattern among industrial workers, because the circumstances of this social group are known to be determined by social, economic, and organizational factors, as well as by working/living conditions and specific occupational risk factors.⁽⁹⁾

Surveillance of these various factors, in parallel with monitoring of smoking,^(3,10,11) knowledge of the deleterious effects of smoking, and understanding of the importance of prevention⁽¹²⁾ can potentiate the development and implementation of anti-smoking policies in the workplace, such as the 2011 Anti-Smoking Law.⁽¹³⁾ These actions are aimed at reducing the health harms caused by and the more serious consequences of smoking, such as the onset of morbidities and early mortality attributable to tobacco use.⁽¹⁴⁾

Considering that industrial workers correspond to a specific class of Brazilian adult workers, who have different work routines, we sought to assess whether exposures to alcohol consumption and stressful situations are associated with smoking. Therefore, the objective of the present study was to determine the prevalence of smoking, as well as its association with sociodemographic factors, alcohol consumption, and stress levels, among industrial workers in Brazil.

METHODS

The present study is part of a nationwide survey entitled “Lifestyle and Leisure Habits of Industrial workers”,⁽¹⁵⁾

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carried out by the Brazilian *Serviço Social da Indústria* (SESI, Industrial Social Services Agency) in partnership with the Federal University of Santa Catarina Center for Research on Physical Activity and Health, between 2006 and 2008, with the participation of 24 of the 27 federal units in Brazil. This was a representative study of Brazilian industrial workers in Brazilian capitals. The states of Rio de Janeiro, Piauí, and Sergipe did not participate in the survey in a timely manner.

In 2006, Brazil had approximately 5,293,000 industrial workers.⁽¹⁶⁾ For the survey, each regional department of the SESI provided worker registration information and information on the number of workers at each company in the state it represented. Information on population size was provided by each regional department, and, on the basis of those data, we calculated the sample size using the following parameters: an estimated prevalence of leisure time physical inactivity of 45%, obtained from a survey conducted in Santa Catarina, the main purpose of which was to identify the prevalence of leisure time physical inactivity⁽¹⁷⁾; a sampling error of 3%; and a confidence interval of 95%. The minimum sample size was then increased by 50% as a strategy to attenuate the effects of the sampling design; subsequently, the sample size was increased by an additional 20% to account for potential losses during the data collection process.⁽¹⁵⁾ The total sum of samples from all regional departments was 52,774 workers. The sampling plan was developed separately in each regional department, in two stages: random selection of companies, considering the distribution of workers in companies by company size—small (20-99 workers), medium (100-499 workers), and large (≥ 500 workers)—10-50% of small, medium, and large companies being selected depending on the number of existing companies and the required number of patients for the sample; and random selection (systematic sampling) of workers in each of the companies selected in the previous phase of the sampling process. The sampling plan was then sent to each regional department, so that the companies could be contacted and the questionnaires could be administered. Companies that did not allow the administration of the questionnaires were replaced with companies of the same size and, when possible, in the same industry. Workers who were absent or on leave were replaced by choosing the next name on the employee list provided by the company. More details can be found in a previous publication.⁽¹⁵⁾

The data in the present study were collected using a self-report questionnaire with 58 questions.⁽¹⁷⁾ Content and logic validity were checked. Kappa index values and intraclass correlation coefficients ranged from 0.40 to 0.79.⁽¹⁷⁾ For the present study, 9 items of the questionnaire were used: tobacco use ("What is your smoking status?"); alcohol consumption ("How many alcoholic drinks do you consume in a typical week?"); stress level ("How would you rate the stress level in your life?"); geographic region of the regional department of the SESI; gender; age; marital status (married/

living with a partner or other); level of education; and gross family income. The ways in which data on the study variables were collected and operationalized can be seen in Chart 1.

We used relative frequencies to describe the study variables. We performed crude and adjusted Poisson regression analyses to determine the association of smoking with demographic profile, socioeconomic profile, alcohol consumption, and stress levels. In the adjusted model, the critical level of p for variable selection was set at $p \leq 0.05$, in order to control for possible confounding factors.

Variables were entered in blocks, according to the Dumith model,⁽¹⁸⁾ in the following order: block 1 (age and marital status); block 2 (level of education and gross family income); block 3 (geographic region); and block 4 (alcohol consumption and stress level). In the adjusted analyses, the variables in the next block were adjusted for the variables in the previous blocks. All analyses were stratified by gender, and the level of statistical significance was set to 5% ($p < 0.05$). For statistical analyses, we used the STATA statistical software package, version 15 (StataCorp LP, College Station, TX, USA).

The survey was approved by the Research Ethics Committee of the Federal University of Santa Catarina (Ruling nos. 306/2005 and 009/2007). The SESI, which was a partner in the survey, authorized this secondary data analysis.

RESULTS

The sample consisted of 47,328 workers, of whom 33,057 (69.2%) were male. The prevalence of smoking among the workers was 13.0% (15.2% in men and 7.9% in women; Table 1).

Among men, the smoking prevalence rates were highest in those who were < 30 years of age (38.6%), those who were married (61.8%), those who had completed high school (37.0%), those who had a monthly gross family income, in Brazilian reals (R\$) of R\$601-1,500 (39.7%), those who lived in the northern region of the country (32.5%), those who consumed 1-7 alcoholic drinks per week (47.6%), and those who reported being rarely or only sometimes stressed (84.3%).

In the adjusted analysis (Table 2), age, marital status, level of education, family income, geographic region, weekly alcohol consumption, and stress levels remained associated with smoking.

Among women, the smoking prevalence rates were highest in those who were < 30 years of age (34.2%), those whose marital status was other than married (58.7%), those who had completed high school (45.3%), those who had a monthly gross family income \leq R\$600 (37.0%), those who lived in the northeastern region of the country (24.7%), those who did not drink alcohol (54.9%), and those who reported being rarely or only sometimes stressed (74.4%). In the adjusted analysis

Chart 1. Study variables.

Variable	Response options	Operational categories
Dependent		
Smoking	I have never smoked ² I quit over 2 years ago ² I quit less than 2 years ago ² I smoke < 10 cigarettes/day ¹ I smoke 10-20 cigarettes/day ¹ I smoke > 20 cigarettes/day ¹	Smokes ¹ Does not smoke ²
Independent		
RD	Any of the 24 RDs participating in the survey, grouped by geographic region	Southeast South Central-West Northeast North
Gender	Male Female	Male Female
Age	< 30 years 30-39 years 40-49 years ≥ 50 years	< 30 years 30-39 years ≥ 40 years
Marital status	Single ² Married/Living with a partner ¹ Widowed ² Divorced/Separated ²	Married ¹ Other ²
Level of education	< 9 years of schooling 9 years of schooling High school graduate College graduate	< 9 years of schooling 9 years of schooling High school graduate College graduate
Gross family income ^a	≤ R\$600 R\$601-1,500 R\$1,501-3,000 > R\$3,000	≤ R\$600 R\$601-1,500 > R\$1,500
Alcohol consumption ^b	0 drinks 1-7 drinks 8-14 drinks ≥ 15 drinks	Does not drink 1-7 drinks ≥ 8 drinks
Stress levels ^c	Rarely stressed Sometimes stressed Almost always stressed Always stressed	Rarely/sometimes stressed Almost always/always stressed

RD: regional department; and R\$: Brazilian reais. ^aThe national monthly minimum wage was R\$350 in 2006, R\$380 in 2007, and R\$415 in 2008. ^bNumber of alcoholic drinks consumed per week. ^cPerceived stress levels over time.

(Table 3), the following variables remained associated with smoking: age group (30-39 years and ≥ 40 years); marital status (married); level of education (high school graduate and college graduate); geographic region (northeastern and northern); weekly alcohol consumption (1-7 drinks and ≥ 8 drinks); and stress level (almost always/always stressed).

DISCUSSION

In the present study, 1 in every 10 female industrial workers and 2 in every 10 male industrial workers smoked. The association analyses indicated that being > 30 years of age, consuming alcohol, and having a high stress level were associated with a higher prevalence of smoking in men and women, whereas living in the South or North was associated with a higher prevalence of smoking only in men. In contrast,

having a higher level of education and being married were associated with a lower prevalence of smoking, regardless of gender. Having an intermediate family income (R\$601-1,500) and living in the northeastern region of the country were associated with a lower prevalence of smoking in men, whereas living in the northeastern or northern region was associated with a lower prevalence of smoking in women.

Between 1990 and 2015, the prevalence of smoking declined considerably in the Brazilian population, and that decline can be attributed to control, regulation, and prevention policies.^(3,11) As an example, we highlight the National Program for Smoking Control, which has the objective of reducing the prevalence of smoking through a model in which educational, communication, and health care interventions, as well as legislative and economic measures, work in concert to prevent smoking initiation, promote smoking cessation, and

Table 1. Smoking prevalence, by demographic and socioeconomic variables, alcohol consumption, and stress levels, among industrial workers (N = 47,328). Brazil, 2006-2008.

Variable	Sample size, n	Smoking		
		Total, % ^a	Smoking, % ^b	
Smoking	47,328	6,163	13.02	100.0
Gender	47,328			
Women		1,126	7.89	18.27
Men		5,037	15.24	81.73
Age, years	47,142			
< 30		2,317	10.66	37.79
30-39		1,921	13.16	31.33
≥ 40		1,893	17.53	30.88
Marital status	47,211			
Other		2,577	12.49	41.96
Married		3,564	13.41	58.04
Level of education	47,230			
< 9 years of schooling		1,963	21.98	31.92
9 years of schooling		1,210	16.35	19.68
High school graduate		2,374	9.84	38.61
College graduate		602	8.88	9.79
Gross family income ^c	46,872			
≤ R\$600		2,358	15.69	38.66
R\$601-1,500		2,380	12.26	39.02
≥ R\$1,501		1,362	10.95	22.33
Geographic region	47,328			
Southeast		721	12.03	11.70
South		924	13.03	14.99
Central-West		1,130	13.89	18.34
Northeast		1,555	10.71	25.23
North		1,833	15.80	29.74
Alcohol consumption ^d	47,052			
0 drinks		2,186	8.06	35.65
1-7 drinks		2,826	17.32	46.09
≥ 8 drinks		1,119	31.12	18.25
Stress levels ^e	47,205			
Rarely/sometimes stressed		5,069	12.45	82.48
Almost always/always stressed		1,077	16.57	17.52

R\$: Brazilian reals. ^aSmoking prevalence relative to the sample as a whole. ^bProportion of the total number of smokers. ^cThe national monthly minimum wage was R\$350 in 2006, R\$380 in 2007, and R\$415 in 2008. ^dNumber of drinks consumed per week. ^ePerceived stress levels over time.

protect the population from exposure to environmental tobacco smoke.⁽¹⁹⁾

The present study showed that men smoke more than women, corroborating data in the literature, which suggest that this is attributable to the fact that women adopt healthier lifestyles and take better care of their health, consequently making more positive health choices.^(20,21)

The relationship between smoking and age found among industrial workers appears to be similar to that reported for the general population.^(3,11) Data from a survey conducted in Brazil in 2017⁽⁴⁾ indicate that the prevalence of smoking among adults is higher in the 45- to 54-year age group (11.2%) than in the 18- to 24-year age group (8.5%). Although youth is the period of life when most people have their first experiences with cigarettes, young people smoke less in Brazil,

a possible reflection of campaigns and interventions aimed at nonsmokers⁽²²⁾ and of intersectoral public policies, such as the School Health Program and the Health Knowledge Program, which address smoking prevention in schools.⁽²³⁾ In addition, Brazilian law acts to reduce access of young people to tobacco, prohibiting the sale of cigarettes to minors, the advertisement of tobacco products in the media, and tobacco industry sponsorship of sporting and cultural events.⁽¹⁹⁾ Furthermore, an industrialized goods tax has been put on cigarettes, which has increased the retail price.⁽²⁴⁾

Our results show that marital status was associated with smoking, indicating that being married/living with a partner is a protective factor against smoking. Several explanations for this emerge from the assumption that marital relationships appear to produce a series of results

Table 2. Smoking prevalence and smoking prevalence ratios, by demographic and socioeconomic variables, alcohol consumption, and stress levels, among male industrial workers (N = 5,037). Brazil, 2006-2008.

Variable	Sample size, n	n (%)	Crude PR (95% CI)	p	Adjusted PR (95% CI)	p
Age, years	5,011			< 0.001		< 0.001
< 30		1,934 (38.6)	1.00		1.00	
30-39		1,540 (30.8)	1.18 (1.10-1.26)		1.22 (1.14-1.31)	
≥ 40		1,537 (30.6)	1.49 (1.40-1.60)		1.55 (1.45-1.67)	
Marital status	5,015			0.168		0.002
Other		1,916 (38.2)	1.00		1.00	
Married		3,099 (61.8)	1.04 (0.98-1.10)		0.91 (0.85-0.97)	
Level of education ^a	5,023			< 0.001		< 0.001
< 9 years of schooling		1,719 (34.3)	1.00		1.00	
9 years of schooling		1,026 (20.4)	0.76 (0.71-0.83)		0.80 (0.74-0.87)	
High school graduate		1,864 (37.0)	0.48 (0.45-0.51)		0.51 (0.48-0.55)	
College graduate		414 (8.3)	0.46 (0.42-0.52)		0.47 (0.41-0.53)	
Gross family income ^{a,b}	4,990			< 0.001		0.228
≤ R\$600		1,947 (39.0)	1.00		1.00	
R\$601-1,500		1,982 (39.7)	0.80 (0.75-0.85)		0.91 (0.85-0.97)	
≥ R\$1,501		1,061 (21.3)	0.72 (0.67-0.77)		0.96 (0.88-1.05)	
Geographic region ^c	5,037			< 0.001		0.015
Southeast		546 (10.8)	1.00		1.00	
South		658 (13.1)	1.15 (1.03-1.29)		1.16 (1.03-1.30)	
Central-West		916 (18.2)	1.16 (1.05-1.30)		1.04 (0.93-1.16)	
Northeast		1,278 (25.4)	0.92 (0.83-1.02)		0.84 (0.76-0.93)	
North		1,639 (32.5)	1.40 (1.27-1.54)		1.26 (1.14-1.39)	
Alcohol consumption ^{d,e}	5,013			< 0.001		< 0.001
0 drinks		1,537 (31.4)	1.00		1.00	
1-7 drinks		2,387 (47.6)	1.90 (1.78-2.02)		1.94 (1.82-2.07)	
≥ 8 drinks		1,053 (21.0)	3.26 (3.01-3.52)		3.24 (2.99-3.51)	
Stress levels ^{e,f}	5,022			< 0.001		< 0.001
Rarely/sometimes stressed		4,233 (84.3)	1.00		1.00	
Almost always/always stressed		789 (15.7)	1.36 (1.26-1.46)		1.29 (1.19-1.39)	

PR: prevalence ratio; and R\$: Brazilian reals. ^aAdjusted for age and marital status. ^bThe national monthly minimum wage was R\$350 in 2006, R\$380 in 2007, and R\$415 in 2008. ^cAdjusted for age, marital status, level of education, and gross family income. ^dWeekly. ^eAdjusted for age, marital status, level of education, gross family income, and geographic region. ^fPerceived stress levels over time.

due to the acquisition of different health behaviors, the greater social support received by married subjects apparently promoting smoking cessation, whereas subjects who do not have a partner are more prone to loneliness, have less social support, and experience high levels of stress due to a break-up, all of which may stimulate smoking.⁽²⁵⁾

In the present study, the prevalence of smoking was inversely proportional to the level of education, in both genders. This result corroborates the findings of a previous study profiling the Brazilian population, in which the proportion of smokers was shown to be lower among individuals, of either gender, with a higher level of education.⁽⁴⁾ In studies conducted in other countries, such as Russia⁽²⁶⁾ and India,⁽²⁷⁾ a similar relationship has been observed between educational variables and smoking. In this regard, we emphasize the importance of understanding the factors that influence the adoption of healthy lifestyles and the extent to which the various smoking control interventions reach men and women

in different social strata and with different levels of education.⁽²⁸⁾

In our study, none of the family income categories were associated with smoking in either gender. Regardless, the impact that spending has on overall family income appears to differ across income brackets, given that higher-income individuals spend proportionately less on tobacco products, while having greater access to resources for smoking cessation.⁽²⁹⁾

When analyzing smoking among industrial workers in Brazil by geographic region, we found that, for both genders, workers in the northeastern region were at a lower risk of smoking than were those in the southeastern region. In addition, among women, those in the northern region of the country were at a lower risk of smoking than were those in the southeastern region. A study of adults in Brazil found that the prevalence of daily smoking ranged from 12.8% in the northern region to 17.4% in the southern region.⁽³⁰⁾ This finding may explain to some extent the higher

Table 3. Smoking prevalence and smoking prevalence ratios, by demographic and socioeconomic variables, alcohol consumption, and stress level, among female industrial workers (N = 1,126). Brazil, 2006-2008.

Variable	Sample size, n	n (%)	Gross PR (95% CI)	p	Adjusted PR (95% CI)	p
Age, years	1,120			< 0.001		< 0.001
< 30		383 (34.2)	1.00		1.00	
30-39		381 (34.0)	1.49 (1.30-1.72)		1.61 (1.39-1.86)	
≥ 40		356 (31.8)	2.22 (1.92-2.57)		2.36 (2.04-2.74)	
Marital status	1,126			0.003		< 0.001
Other		661 (58.7)	1.00		1.00	
Married		465 (41.3)	0.83 (0.74-0.94)		0.73 (0.65-0.83)	
Level of education ^a	1,126			< 0.001		< 0.001
< 9 years of schooling		244 (21.6)	1.00		1.00	
9 years of schooling		184 (16.3)	0.72 (0.60-0.88)		0.83 (0.68-1.01)	
High school graduate		510 (45.3)	0.45 (0.39-0.53)		0.54 (0.46-0.65)	
College graduate		188 (16.8)	0.43 (0.36-0.52)		0.47 (0.38-0.60)	
Cross family income ^{a,b}	1,110			< 0.001		0.665
≤ R\$600		411 (37.0)	1.00		1.00	
R\$601-1,500		398 (35.9)	0.73 (0.64-0.84)		0.87 (0.75-1.00)	
≥ R\$1,501		301 (27.1)	0.73 (0.63-0.85)		0.97 (0.81-1.16)	
Geographic region ^c	1,126			< 0.001		< 0.001
Southeast		175 (15.5)	1.00		1.00	
South		266 (23.6)	1.04 (0.86-1.25)		0.98 (0.80-1.19)	
Central-West		214 (19.0)	1.02 (0.84-1.25)		0.92 (0.75-1.13)	
Northeast		277 (24.7)	0.73 (0.61-0.88)		0.64 (0.53-0.77)	
North		194 (17.2)	0.74 (0.61-0.91)		0.72 (0.58-0.88)	
Alcohol consumption ^{d,e}	1,118			< 0.001		< 0.001
0 drinks		613 (54.9)	1.00		1.00	
1-7 drinks		439 (39.1)	2.38 (2.11-2.70)		2.52 (2.23-2.86)	
≥ 8 drinks		66 (6.0)	5.05 (3.92-6.51)		5.04 (3.89-6.54)	
Stress levels ^{e,f}	1,124			< 0.001		< 0.001
Rarely/sometimes stressed		836 (74.4)	1.00		1.00	
Almost always/always stressed		288 (25.6)	1.61 (1.40-1.84)		1.49 (1.30-1.70)	

PR: prevalence ratio; and R\$: Brazilian reals. ^aAdjusted for age and marital status. ^bThe national monthly minimum wage was R\$350 in 2006, R\$380 in 2007, and R\$415 in 2008. ^cAdjusted for age, marital status, level of education, and gross family income. ^dWeekly. ^eAdjusted for age, marital status, level of education, gross family income, and geographic region. ^fPerceived stress levels over time.

prevalence of smoking in the southern region, because two of the three states in this region, Rio Grande do Sul and Santa Catarina, are responsible for most of the national production of tobacco, which may be leading to higher tobacco use in this region.⁽³¹⁾ In addition, the higher tobacco use in this region may be attributed to cultural factors, such as the strong influence of its European immigrants and its proximity to countries such as Argentina and Uruguay, where the prevalence of smoking is close to 30%.⁽¹¹⁾ Likewise, some prevalence studies coordinated by the Brazilian federal government also report that the number of smokers is higher in the southern region.^(15,31-33)

With regard to alcohol consumption, we found that an increase in the number of drinks consumed per week was paralleled by an increase in the prevalence of smoking. This finding is similar to those reported in other studies in Brazil, which assessed associations in risk behaviors in adults.^(8,34) A study that monitored the prevalence of health-related characteristics and behaviors in the United States, Guam, Puerto Rico,

and the Virgin Islands found that smokers are more likely to drink compulsively than are former smokers or nonsmokers.⁽³⁵⁾ Therefore, the co-use of alcohol and nicotine leads to a greater desire to consume both substances.⁽³⁶⁾ The nature of the relationship between nicotine and alcohol suggests that the severity of dependence on these drugs should be considered jointly.⁽³⁷⁾ According to the World Health Organization, there is a growing worldwide trend toward people using various psychoactive substances together and at different times, leading to increased health risks.⁽³⁸⁾

The findings of the present study showed that the prevalence of smoking was higher among workers with higher stress levels, for both genders. This bidirectional relationship can occur, as reported in a study of occupational stress among bank workers that found that smoking was significantly associated with stress.⁽³⁹⁾ It is plausible that this relationship is due to occupational pressure resulting from the precariousness of employment, an accumulation of

duties, and increased responsibility, all of which imply susceptibility to stress,⁽⁴⁰⁾ reinforcing tobacco use.⁽⁷⁾

Our study has some limitations. First, the results are dependent on the criterion used to define "smoking", and comparisons should consider this aspect. Second, the data are representative of industrial workers in Brazilian capitals and may not reflect the reality of workers in other locations or other work settings. Third, the data are representative of a 2006-2008 scenario and may not portray the current situation. Finally, the sample specifically included adult workers, therefore not being representative of the elderly population.

The current debate on occupational health should consider the ongoing changes in the world of labor, so that the lifestyle of workers can be improved. Our results showed that the behavior of variables such as gender, age, level of education, alcohol consumption, and stress levels among industrial workers is similar to that found in the general population, indicating that the understanding may be similar. Nevertheless, further studies, such as longitudinal surveys that allow monitoring of the real impact of these and other

variables on smoking in this population and intervention studies that allow testing of interventions for behavior change, should be encouraged.

In summary, our study revealed that 1 in every 10 industrial workers smokes, the prevalence of smoking being higher in men and in workers > 30 years of age.

In addition, alcohol consumption and high stress levels are factors that potentiate smoking.

AUTHOR CONTRIBUTIONS

PMS and KSS participated in the study design, assisted in the literature review and in the interpretation of data, participated in the writing and critical review of the manuscript, and approved the final version. GTM and MTGK participated in the study design, assisted in the analysis and interpretation of data, participated in the writing and critical review of the manuscript, and approved the final version. AFB and MVN prepared and coordinated the project, collected the data, participated in the writing and critical review of the manuscript, and approved the final version.

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