

**Smoking and lifestyle in an area of social vulnerability****Tabagismo e estilo de vida em área de vulnerabilidade social****Tabaquismo y estilo de vida en área de vulnerabilidad social****Received: 06/07/2017****Approved: 10/10/2017****Published: 07/05/2018****Natália Cristina de Oliveira<sup>1</sup>****Leslie Andrews Portes<sup>2</sup>****Cristina Zukowsky-Tavares<sup>3</sup>****Leonardo Tavares Martins<sup>4</sup>****Jorge Bonito<sup>5</sup>**

The aim of this study was to investigate the prevalence of smoking and its relationship with the population's lifestyle in Jardim Colombo Community, São Paulo city, SP, Brazil. We used a transversal design and applied a closed questionnaire to the people in each household. 2,416 residences were visited, and the study had a sample of 5,155 participants. The prevalence of smoking (19.5%, IC95%: 18,1;20,9) was higher than the national prevalence (15%) and was associated with age, male gender, lack of schooling, and non-healthy lifestyles habits (alcohol consumption, low consumption of fruits and vegetables and lack of religiosity). The prevalence of smoking was high, and the results require interventions that focus on stop smoking and the promotion of a healthy lifestyle.

**Descriptors:** Social vulnerability; Health; Tobacco use disorder; Lifestyle.

O objetivo deste estudo foi investigar a prevalência de tabagismo e sua relação com o estilo de vida da população residente na Comunidade Jardim Colombo, cidade de São Paulo. Utilizou-se um desenho transversal e um questionário fechado foi aplicado nos domicílios. Foram visitadas 2.416 residências, e o estudo contou com uma amostra de 5.155 participantes. A prevalência de tabagismo (19,5%, IC95%: 18,1;20,9) foi superior à prevalência nacional (15%) e esteve associada à idade, ao sexo masculino, à falta de escolarização, e a hábitos não saudáveis de estilo de vida como: consumo de álcool, baixo consumo de frutas, verduras e legumes, e ausência de religião. A prevalência de tabagismo foi alta e os resultados requerem intervenções que tenham como foco a cessação do tabagismo e a promoção de um estilo de vida saudável.

**Descritores:** Vulnerabilidade social; Saúde; Tabagismo; Estilo de vida.

El objetivo de este estudio fue investigar la prevalencia del consumo de tabaco y su relación con el EV de la población residente en la Comunidad Jardín Colombo, ciudad de Sao Paulo, SP, Brasil. Se utilizó un diseño transversal, y un cuestionario fue aplicado en los domicilios. Fueron visitadas 2.416 residencias, y el estudio tuvo una muestra de 5.155 participantes. La prevalencia de tabaquismo (19,5%) fue mayor que la prevalencia nacional (15%, IC95%: 18,1;20,9) y se asoció con edad, sexo masculino, falta de enseñanza y hábitos poco saludables de estilo de vida, como: consumo de alcohol, bajo consumo de frutas y verduras, y falta de religión. La prevalencia de tabaquismo fue alta y los resultados requieren intervenciones que tengan como foco la cesación del tabaquismo y la promoción de un estilo de vida saludable.

**Descritores:** Vulnerabilidad social; Salud; Tabaquismo; Estilo de vida.

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## INTRODUCTION

In the end of 1970s, with the development of road works on the border between the southern and western areas of São Paulo city, several houses were installed nearby for workers to live. After the construction company left, workers and other families began to occupy these quarters, starting point of the Community Jardim Colombo<sup>1</sup>.

The Residents' Union, founded in 1984, estimates that about 3,500 families (approximately 17,000 people) live in this place, which occupies an area of around 30,000 m<sup>2</sup>. The main demands of the associations of community residents in this region of the city are concentrated in the areas of urban infrastructure, culture and health<sup>2</sup>.

Families living in areas of social vulnerability like this, generally have low education, low income and large number of people per household<sup>3</sup>.

The presence of the Government in terms of infrastructure and services is often deficient in this type of space<sup>4</sup>. Policies for education, health and income transfer, whose coverage has increased substantially in recent years, would have the potential to function as social protection networks; However, the increase in the number of vulnerable households indicates the complexity of recent patterns of urban poverty in San Paulo<sup>5</sup>.

One of the biggest public health problems associated with areas of social vulnerability are the chronic non-communicable diseases-CNCD<sup>6</sup>. Among the major modifiable risk factors related to CNCD include smoking, alcohol consumption, physical inactivity and inadequate food ingestion<sup>7</sup>.

Data that characterize and point the needs and peculiarities of this population, especially in relation to the prevalence of smoking and lifestyle (LS) of the residents do not exist so far. Thus, the objective of this study was to investigate the prevalence of smoking and its relationship with the lifestyle of the population resident in the Community Jardim Colombo, São Paulo city.

## METHOD

This cross-sectional delineation and quantitative study was carried out through the application of a closed questionnaire, adapted from the registration form of families of the Family Health Strategy of the Brazilian Ministry of Health.

Before data collection we characterized the territory, which resulted in the division of the community into three Census micro areas. Data collection was done in four days (Saturdays and Sundays) in the months of March and April 2012, with the participation of approximately 200 volunteers every day.

All volunteers were trained and accompanied by professor researchers during the collection. Each professor accompanied a group of six volunteers trained, instructed to visit all households in the community. The application of the questionnaire was made in the form of an interview (straight-filling) at the hallway of the house. It excluded from the sample shops, churches and kindergartens.

The prevalence of smoking was assessed and related to other LS indicators obtained from the questionnaire (religion, fruit consumption, vegetables, meat consumption, the practice of physical activity at least 30 minutes, 5 days a week, alcohol consumption and sleeping time equal to or greater than 6 hours per night). The study was approved by the Research Ethics Committee of the Centro Universitário Adventista in São Paulo, opinion number 5696.

Data were analyzed using the statistical package GraphPad Prism, version 6.0 for Windows ([www.graphpad.com](http://www.graphpad.com)). The Chi-square test was applied to the categorical bivariate analyses to determine the associations between them. Their prevalence and their 95% confidence intervals (95%) were also calculated. In all cases, the level of statistical significance established was  $p < 0.05$ .

## RESULTS

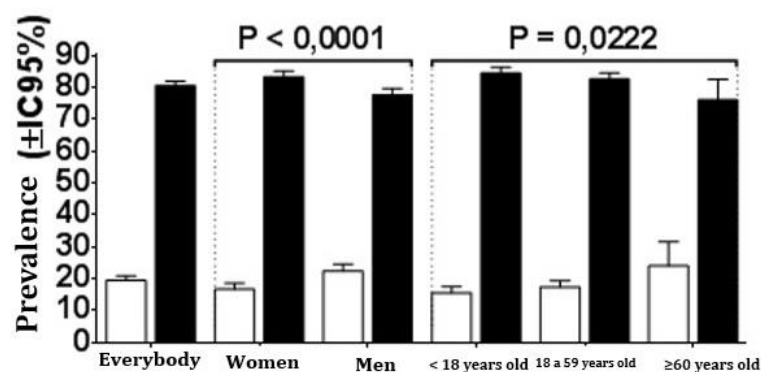
It visited 2,416 households, in which 1,546 families (64%) were present and received the researchers. Of these, 71 families (3%)

refused to participate in the study and in 799 households (33%) nobody answered to researchers.

The initial sample was composed of 5,282 inhabitants, and from it, we excluded individuals whose age and sex data had not been recorded ( $n=127$ ; 2%). The study included a final sample of 5,155 participants (98%), of whom 3,239 (89%) were 18 years

old or more and were considered in this analysis (1,674 female, 52%).

Figure 1 illustrates the prevalence of smoking in the population, among men and women and among age groups. We included in the figure, the data of individuals under the age of 18 years old, for informational purposes only.



**Figure 1.** Prevalence (%) of smoking (□ smokers and ■ non-smokers) by sex and age. Jardim Colombo, 2012.

The total prevalence of smokers was 19.5% (CI95%: 18.1; 20.9) or 631 individuals (Table 1), being significantly greater in men (22.4%, CI95%: 20.4; 24.6) compared to women (16.7%, CI95%: 15.0; 18.6). Figure 1 also shows the significant increase of smoking with increasing age.

Table 1 summarizes the characteristics and educational LS of smokers and non-smokers. Smokers were, on average, 3.2 years older than non-smokers ( $p<0.0001$ ). They also showed lower education level ( $p<0.0001$ ), lower prevalence of fruits, vegetables and legumes consumption

( $p<0.05$ ) higher prevalence of individuals who reported having no religion ( $p<0.01$ ) and higher prevalence of alcoholism ( $p<0.0001$ ). The prevalence of regular practice of physical activity, sleep for at least 6 hours/night and meat consumption did not differ between smokers and non-smokers.

In this population of periphery area of São Paulo city, considered an area of social vulnerability, smoking occurred more significantly among elders, among men and among those with no schooling, and was also related to the practice of alcoholism.

**Table 1:** Demographic, education and lifestyle characteristics of the population from 18 to 99 years old. Comunidade Jardim Colombo, 2012.

	Non-smokers	Smokers
<b>N</b>	2608 (81%)	631 (19%)
<b>Age</b>	34,1 ± 0,3	37,3 ± 0,5***
<b>Sex (M/F)</b>	1.214/1.394	351/280
<i>M % (IC95%)</i>	46,5 (44,6;48,5)	55,6 (51,6;59,5)+++
<i>F % (IC95%)</i>	53,5 (51,5;55,4)+++	44,4 (40,5;48,4)
<b>Literacy</b>		
<i>No % (IC95%)</i>	9,0 (7,9;10,1)	13,9 (11,3;16,9)***
<i>Yes % (IC95%)</i>	89,8 (88,6;91,0)	84,9 (81,9;87,6)***
<i>NI % (IC95%)</i>	1,2 (0,8;1,7)	1,1 (0,4;2,3)
<b>Physical Activity</b>		
<i>No % (IC95%)</i>	64,1 (62,2;66,0)	66,1 (62,2;69,8)
<i>Yes % (IC95%)</i>	31,4 (29,6;33,2)	28,7 (25,2;32,4)
<i>NI % (IC95%)</i>	4,5 (3,7;5,4)	5,2 (3,6;7,3)
<b>Fruits, Vegetables and Legumes</b>		
<i>No % (IC95%)</i>	32,1 (30,3;33,9)	36,5 (32,7;40,3)*
<i>Yes % (IC95%)</i>	66,7 (64,8;68,5)	62,1 (58,2;65,9)*
<i>NI % (IC95%)</i>	1,2 (0,8;1,7)	1,4 (0,7;2,7)
<b>Sleeping 6h/night</b>		
<i>No % (IC95%)</i>	16,2 (14,7;17,7)	19,3 (16,3;22,6)
<i>Yes % (IC95%)</i>	81,9 (80,3;83,3)	79,1 (75,7;82,2)
<i>NI % (IC95%)</i>	1,9 (1,5;2,6)	1,6 (0,8;2,9)
<b>Religion</b>		
<i>No % (IC95%)</i>	17,5 (16,0;19,0)	23,3 (20,1;26,8)**
<i>Yes % (IC95%)</i>	78,0 (76,4;79,6)	71,5 (67,8;75,0)**
<i>NI n (IC95%)</i>	4,5 (3,8;5,4)	5,2 (3,6;7,3)
<b>Meat</b>		
<i>No % (IC95%)</i>	12,6 (11,4;14,0)	12,5 (10,0;15,4)
<i>Yes % (IC95%)</i>	86,3 (84,9;87,6)	85,9 (82,9;88,5)
<i>NI % (IC95%)</i>	1,1 (0,7;1,6)	1,6 (0,8;2,8)
<b>Alcohol</b>		
<i>ão % (IC95%)</i>	67,0 (65,1;68,8)	38,5 (34,7;42,4)***
<i>Yes % (IC95%)</i>	31,1 (29,3;32,9)	57,4 (53,4;61,3)***
<i>NI % (IC95%)</i>	2,0 (1,5;2,6)	4,1 (2,7;6,0)***

Age expressed as mean ± standard error. M: male sex e F: female sex. NI: not informed. +++Statistically significant differences comparing men and women (p<0,0001). \*Statistically significant differences (p<0,05) comparing Smokers and Non-smokers. \*\* Statistically significant differences (p<0,01) comparing Smokers and Non-smokers. \*\*\* Statistically significant differences (p<0,0001) comparing Smokers and Non-smokers.

## DISCUSSION

The prevalence of smoking was high and associated with bad LS habits. The data of 19.5% smokers in the community (22.4% of men and 16.7% of women) was higher than that recorded by a study involving all Brazilian capitals and Federal district<sup>8</sup> (18.1% between men and 12.0% among women). However, the data of this study resembles those of the population of Sao

Paulo city (22.2% men and 16.8 smokers women), where the Colombo community is located<sup>8</sup>.

In this study, we found that smoking was more frequent among older individuals. The prolonged exposure to smoking entails greater risk of developing diseases related to it<sup>9</sup>, besides increasing the spending of older individuals with health care<sup>10</sup>. Among elderly individuals, this fact becomes specially worrying, because in this age group there is a

higher prevalence of chronic diseases, and smoking contributes to increase the risk of complications and comorbidities<sup>11</sup>.

It observed significantly higher number of individuals without schooling among smokers when compared with non-smokers. A recent study<sup>12</sup> also found that educational inequalities may contribute to the increased prevalence of smoking.

Education is another important factor which tends to remain unchanged after about 25 years old, while other socioeconomic variables (such as income or occupation) may change in life<sup>12</sup>. In addition, education appears as a key determinant of starting and maintaining smoking as well as other behaviors that affect health, such as health education<sup>13</sup>.

The number of individuals that consume alcohol was significantly higher among smokers compared to non-smokers evaluated in this study. This corroborates the other study that also found that smoking tends to occur in concomitance of other unhealthy behaviors, such as alcohol consumption and low intake of fruits, vegetables and legumes<sup>14</sup>, also observed in the population evaluated.

Most of the smokers reported not having religion. A study conducted with users of Health Basic Attention<sup>15</sup> verified that, among people who reported having some religion, the prevalence of smoking was lower. It is believed that religion is a factor of important positive influence in relation to non-smoking.

Contrary to the expected, significant differences were observed between smokers and non-smokers about other LS habits: practice of physical activity, hours of sleep and meat consumption. A recent study identified the association between smoking and LS bad habits<sup>16</sup>. It was recommended that smoking prevention measures should aim at improving LS as a whole<sup>16</sup>.

This study has some limitations. Smoking was not quantified nor was the tobacco exposure studied, which prevents to establish relations between the size of tobacco exposure and other variables. In addition, schooling data only refers to the

participants' literacy or illiteracy, which also prevents further affirmations about the influence of schooling time in smoking and other LS habits.

Despite this, the study brings important and unprecedented data on smoking and LS in an urban population in area of social vulnerability.

## CONCLUSION

Prevalence of smoking in the community Jardim Colombo, a social vulnerability area located in São Paulo city, was higher than the national prevalence and was associated with age, male, lack of schooling, and lifestyle habits not health promoters (alcohol consumption, low consumption of fruits, vegetables and legumes, and absence of religion).

The results require a deeper look at the economic, educational and cultural contexts of this community to design interventions that focus to stop smoking and the promotion of a healthy lifestyle.

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#### CONTRIBUTIONS

**Natália Cristina de Oliveira e Leslie Andrews Portes** contributed in data interpretation and writing. **Cristina Zukowsky-Tavares** participated in the conception and design, critical review. **Leonardo Tavares Martins** helped on data collection and writing. **Jorge Bonito** made the critical review.

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