The use of other tobacco products among Brazilian school children (PeNSE 2012)

Uso de outros produtos do tabaco entre escolares brasileiros (PeNSE 2012)

Uso de otros productos del tabaco entre escolares brasileños (PeNSE 2012)

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Abstract

The goal of this paper is to estimate the prevalence and to identify factors related to the use of other tobacco products among schoolchildren. A cross-sectional study was conducted with a representative sample of high school students enrolled in the 9th grade. A total of 109,104 students were interviewed, and 4.8% of them had used other tobacco products in the previous 30 days. The factors that increased the likelihood of using other tobacco products were: male gender, being administratively dependent on the school, having a job, living with mother and/or father, perception that the parents or guardians would not care if they smoked, having difficulties sleeping, not having close friends, having experienced domestic violence, skipping classes, having used tobacco and alcohol within the past 30 days, having experimented drugs, having smoking parents or guardians, having seen people smoking. The prevalence of using other tobacco products is high among Brazilian students, and is associated with higher socioeconomic conditions, presence of risk behavior, and living in an environment permissible to tobacco use.

Tobacco Products; School Health; Adolescent Health

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Introduction

The use of tobacco by young people is associated with significant increase of health problems during childhood and adolescence, and is an important risk factor for chronic noncommunicable diseases [1,2,3].

In the Western world, tobacco products consumed the most are manufactured cigarettes; however, with the retraction of the cigarette market, the tobacco industry decided to invest in expanding consumption of tobacco products other than manufactured cigarettes, such as hand-rolled cigarettes, cigarillos, narghile, snuff, chewing tobacco, and snus [4,5,6].

Data from the *National Youth Tobacco Surveys* (NYTS), applied to young students of the United States between 2011 and 2014 showed a significant increase in the prevalence of electronic cigarettes and tobacco use, and a significant decrease in cigarette smoking in that period. The electronic cigarette was the tobacco product most frequently utilized by high school (13.4%) and elementary school (3.9%) students, followed by narghile, with the proportions of 9.4% and 2.5% respectively. The highest increase in prevalence of use of other tobacco products was between 2013 and 2014. Particularly in 2014, 24.6% of high school students used some type of tobacco product [7].

In Brazil, few publications address the use of other tobacco products among teenagers. A study analyzing data from the *Survey on Tobacco Use Among Schoolchildren* (*Inquérito de Tabagismo em Escolares* – Vigescola) in three Brazilian capital cities in 2009 has concluded that the prevalence of using other tobacco products is high among middle school students enrolled in the 7th and 8th grades and High School students enrolled in the 9th grade of public and private schools in the investigated cities, with the proportions of 4.3% in Vitória (Espírito Santo State), 18.3% in Campo Grande (Mato Grosso do Sul State), and 21.3% in São Paulo. The authors identified that narghile was the tobacco product other than cigarettes most often used by the students [8].

Risk factors for using tobacco products other than cigarettes, particularly narghile, are the subject of many studies in other countries [9,10]. In Brazil, even though studies have estimated the prevalence of use of other tobacco products among schoolchildren and medical students [8,11], no publications addressing the factors associated to the use of these products in Brazil were found.

Considering that all tobacco products are nicotine-delivery vehicles, causing addiction and increasing the risk of developing a number of conditions [1,2,3], it is important to know the magnitude of consumption among the Brazilian youth, and to identify the factors associated to the use of these products.

The goal of this paper is to estimate the prevalence and to identify factors associated to the use of other tobacco products among the students who took part in the *National School Health Survey* (*Pesquisa Nacional de Saúde do Escolar* – PeNSE) in 2012.

Methods

The analyzed data are from the second edition of the PeNSE conducted in Brazil in 2012. PeNSE included high school students enrolled in the 9th grade, day-time classes, of public and private schools in urban or countryside schools of Brazil [12].

The sample design allows estimation of population parameters for different geographic divisions, and for the country as a whole. To that end, the Brazilian territory was stratified as follows: each of the 26 state capital cities and the Federal District were considered one geographic stratum, and the other cities were grouped in one of the five Major Regions of Brazil, forming five geographic strata. The secondary sampling units were the schools, and the classes were the tertiary sampling units. All students of the selected classes who were present on the day the questionnaire was applied were invited to participate [12].

The sample was planned according to the schools listed on the 2010 *School Census*. According to the information provided by the schools, 132,123 students were enrolled, and on the day the questionnaire was applied, 110,873 attended classes, out of which 1,651 chose not to participate, and 118 did not inform their sex or age. Hence, 109,104 students were interviewed, corresponding to 83% of high school students enrolled in the 9th grade who attended classes in the schools where the survey

was done. Sample weights were calculated so that the responding students represented all high school students enrolled in the 9th grade who regularly attend daily classes in public and private schools [12].

Information was collected through a self-applied, anonymous questionnaire, in the first half of 2012. Prior to the survey, State and City Secretariats of Education and the principals of the selected schools in each city were contacted. Student participation was voluntary, by agreeing with the "Free Consent Form" presented on the first page of the smartphone used for the questionnaire survey. Of note is the fact that the information provided was confidential, and the students could leave any or all questions unanswered. The PeNSE 2012 survey was approved by the National Committee on Ethics in Research – Conep (Registration n. 16,805) [12].

The use of other tobacco products was defined as confirmation by the students of having used straw or hand-rolled cigarettes, cigars, pipes, cigarillos, Indian or Bali cigarettes, narghile, snuff or chewing tobacco at least once in the past 30 days.

The independent variables according to the information provided by the students were analyzed as follows: sex (male or female); age in completed years ($\leq$ 13, 14, 15, 16 and older); skin color/race (white, black, yellow, brown, or indigenous), administrative dependency on the school (public or private), perception of the family's reaction if they knew the student smoked (would care much; would care little; would not care), having meals with parents or guardians (no, 2 times a week or less, 3 to 4 times a week, 5 or more times a week), and having close friends (no, 1, or more).

The following independent variables were considered dichotomous, and defined as follows: is currently working (has a current job, employment or business), lives with father or mother (living with father and/or mother), feels lonely (feeling lonely in the past 12 months), difficulties to sleep (not being able to sleep at night for feeling strongly worried about something in the past 12 months), close friends (having close male of female friends), domestic violence (having been physically assaulted by a family adult in the past 30 days), family supervision (knowledge of parents or guardians about what the student was actually doing in his/her spare time in the past 30 days), skipping classes (having skipped classes without permission of parents or guardians in 1 or more days in the past 30 days), use of tobacco (having smoked cigarettes at least once in the past 30 days), use of alcohol (having drunk at least a glass or a shot of an alcoholic beverage), drug experimentation (having used illicit drugs at least once in life), people smoking in his/her presence (having people smoking in his/her presence in the past 7 days), smoking parents or guardians (having parents or guardians who smoke).

For describing the variables, their relative values and respective 95% confidence intervals (95%CI) were used. Pearson's chi-square test was used to check the association between the independent variables according to groups. Statistical significance was admitted only if the likelihood of the phenomenon analyzed having occurred by chance was lower than 0.05.

Initially, a bivariate analysis to assess the effect of each variable alone was performed, and variables that presented a descriptive level up to 0.20 were selected for the model. The pooled analysis of the factors selected in the previous stage was performed using forward stepwise regression. To that end, the multiple logistic regression technique was applied. The dependent variable (Y) was using other tobacco products, and the reference category for each independent variable (X) was the risk likelihood for the investigated age group, according to the literature on the matter. The measure of estimated association was the odds ratio (OR), with a 95%CI. The final model included the variables associated to the use of other tobacco products with alpha (type I) error lower than or equal to 0.05. The variable maternal schooling was not included in the multivariate analysis due to information loss. Statistical analysis was made with the software Stata version 11.1 (StataCorp LP, College Station, USA), using the svyset command with sampling weights.

Results

In Brazil, in 2012, 4.8% (95%CI: 4.6-5.0) of the students have used other tobacco products, such as straw or hand-rolled cigarettes, cigars, pipes, cigarillos, Indian or Bali cigarettes, narghile, snuff or chewing tobacco in the past 30 days. When data on the use of cigarettes and other tobacco products were pooled, 7.6% (95%CI: 7.3-7.9) of the students used some tobacco product in the past 30 days (Table 1).

Table 1

Distribution of tobacco exposure prevalence and respective 95% confidence intervals (95%CI), according to the nature of the exposure and sex of high school students enrolled in the 9th grade in Brazil. *National School Health Survey* (PeNSE), Brasil, 2012.

Tobacco exposure	Sex				Total		p-value
	Male		Female				
	%	95%CI	%	95%CI	%	95%CI	
Smoked cigarettes in the past 30 days	5.1	4.8-5.5	5.0	4.7-5.3	5.0	4.9-5.3	0.560
Smoked other tobacco products * in the past 30 days	5.4	5.1-5.7	4.3	4.1-4.6	4.8	4.6-5.0	0.000
Smoked cigarette and/or other tobacco products * in the past 30 days	7.9	7.6-8.3	7.3	6.9-7.6	7.6	7.3-7.9	0.010

* Straw or hand-rolled cigarettes, cigars, pipes, cigarillos, Indian or Bali cigarettes, narghile, snuff or chewing tobacco.

In the analysis according to sex, the proportion of students who used other tobacco products in the past 30 days was higher among males over females, respectively 5.4% and 4.3%, and this is a statistically significant difference (p = 0.000) (Table 1).

Table 2 presents the prevalence of use of other tobacco products smoked, according to the different categories of the independent variables, as well as the gross and adjusted odds ratio and their respective 95%CI (Table 2).

According to the results of the multivariate analysis, the factors that increased the chance of students making use of other tobacco products were: male sex, administrative dependence on the school, working, living with mother and/or father, perception that the parents or guardians would care little if they smoked, having difficulties to sleep, not having close friends, having experienced domestic violence, skipping classes, having used tobacco or alcohol in the last 30 days, having experimented drugs, having parents or guardians who smoke, having seen people smoking. The variables associated to a decreased likelihood of using other tobacco products were: older age; black, brown, indigenous race/color; having meals with parents/guardian five or more times a week; and being under family supervision (Table 2).

Discussion

According to the PeNSE results, about 5% of the students who attend school during daytime made use of other tobacco products in the past 30 days, and this behavior is associated with better socio-economic conditions, maintaining a risk-prone behavior, and living in an environment permissible to tobacco use. The analysis of another national study, the Vigescola, indicated that the use of other tobacco products is high among middle school students enrolled in the 7th and 8th grades and high school students enrolled in the 9th grade of public and private schools in the selected capitals, particularly in the city of São Paulo, where the prevalence was 22.1% [8].

The data analyzed here did not allow identification of what tobacco products other than cigarettes that attracted Brazilian students the most. However, other studies conducted in Brazil indicate that narghile is the product used the most by students and youngsters who have used tobacco products other than cigarettes [8,11]. Of note is the fact that the smoke from the narghile contains high levels of carbon monoxide and other hazardous substances that may cause the same diseases as smoking cigarettes. A narghile session takes, on average, 20 to 80 minutes, in which the smoker puffs between 50 and 200 times, inhaling the same amount of smoke a cigarette smoker would inhale from smoking 100 or more cigarettes. Another important factor for consideration is that the tobacco used is often flavored, enhancing tastiness, and consumption by young people [13].

In the present analysis, it was observed that the prevalence of use of other tobacco products was higher among boys. The publication with the analysis of the data collected by PeNSE 2012 in the 26 state capital cities and the Federal District has identified that boys are more likely to use other tobacco

Table 2

Prevalence of smoking other tobacco products, gross and adjusted odds ratio (OR) and respective 95% confidence intervals (95%CI) according to independent variables. *National School Health Survey* (PeNSE), Brasil, 2012.

Variable	%	95%CI	OR crude	95%CI	p-value	OR adjusted *	95%CI	p-value
Age (years)								
< 13	4.4	3.2-6.0	1.1	0.8-1.5	0.624	0.8	0.5-1.4	0.417
13	4.0	3.8-4.3	1.0			1.0		
14	4.5	4.2-4.9	1.1	1.0-1.2	0.002	0.8	0.8-0.9	0.001
15	5.7	5.2-6.2	1.4	1.3-1.6	< 0.001	0.6	0.5-0.7	< 0.001
16 and older	7.1	6.5-7.7	1.8	1.7-2.0	< 0.001	0.6	0.5-0.7	< 0.001
Sex								
Male	5.5	5.3-5.8	1.3	1.2-1.3	< 0.001	1.4	1.3-1.5	< 0.001
Female	4.5	4.3-4.6	1.0			1.0		
Color/Race								
White	5.6	5.3-5.8	1.0			1.0		
Black	5.0	4.6-5.4	0.9	0.8-1.0	0.006	0.7	0.6-0.8	< 0.001
Yellow	5.5	4.8-6.2	1.0	0.9-1.1	0.818	0.9	0.8-1.1	0.261
Brown	4.3	4.1-4.6	0.8	0.7-0.8	< 0.001	0.8	0.7-0.9	< 0.001
Indigenous	5.7	4.9-6.5	1.0	0.9-1.2	0.808	0.8	0.6-0.9	0.002
Administrative dependency on the school								
Private	4.6	4.3-5.0	0.9	0.8-1.0	0.019	1.2	1.1-1.3	< 0.001
Public	5.0	4.9-5.2	1.0			1.0		
Is currently working								
No	4.2	4.1-4.4	1.0			1.0		
Yes	9.7	9.1-10.3	2.4	2.3-2.6	< 0.001	1.3	1.2-1.4	< 0.001
Lives with mother and/or father								
No	6.4	5.8-7.0	1.0			1.0		
Yes	4.9	4.4-5.4	0.8	0.7-0.8	< 0.001	1.2	1.0-1.4	0.027
Has meals with parent/guardian								
No	7.9	7.5-8.3	1.0			1.0		
2 times or less a week	5.9	5.4-6.4	0.7	0.7-0.8	< 0.001	1.0	0.9-1.1	0.973
3 to 4 times a week	6.2	5.5-7.0	0.8	0.7-0.9	< 0.001	1.0	0.8-1.2	0.945
5 or more times a week	4.0	3.8-4.3	0.5	0.4-0.5	< 0.001	0.9	0.8-1.0	0.024
Perception of parental reaction if they smoked								
Would care much	4.1	4.0-4.2	1.0			1.0		
Would care little	16.7	15.4-18.1	4.7	4.3-5.2	< 0.001	1.9	1.7-2.2	< 0.001
Would not care	12.6	11.7-13.5	3.4	3.1-3.7	< 0.001	1.4	1.3-1.6	< 0.001
Feeling lonely								
No	4.5	4.4-4.7	1.0			1.0		
Yes	6.8	6.4-7.3	1.5	1.4-1.6	< 0.001	1.0	1.0-1.2	0.307
Difficulties to sleep								
No	4.4	4.3-4.6	1.0			1.0		
Yes	9.4	8.8-10.0	2.2	2.1-2.4	< 0.001	1.3	1.2-1.4	< 0.001
Close friends								
None	7.5	6.7-8.4	1.6	1.4-1.8	< 0.001	1.2	1.0-1.5	0.012
1 or more	4.8	4.7-4.9	1.0			1.0		
Domestic abuse								
No	4.1	3.9-4.2	1.0			1.0		
Yes	11.9	11.1-12.6	3.2	3.0-3.4	< 0.001	1.4	1.3-1.5	< 0.001
Family supervision								
No	7.1	6.9-7.4	1.0			1.0		
Yes	3.3	3.2-3.5	0.4	0.4-0.5	< 0.001	0.9	0.8-0.9	< 0.001

(continues)

Table (continued)

Variable	%	95%CI	OR crude	95%CI	p-value	OR adjusted *	95%CI	p-value
Skipping classes								
No	3.4	3.3-3.6	1.0			1.0		
Yes	9.2	8.8-9.7	2.8	2.7-3.0	< 0.001	1.4	1.3-1.5	< 0.001
Tobacco use								
No	2.8	2.7-2.9	1.0			1.0		
Yes	45.6	44.0-47.2	29.4	27.6-31.4	< 0.001	7.6	7.0-8.3	< 0.001
Alcohol use								
No	1.6	1.5-1.7	1.0			1.0		
Yes	14.4	13.6-15.2	10.4	9.8-11.2	< 0.001	4.4	4.1-4.7	< 0.001
Drug experimentation								
No	3.0	2.9-3.1	1.0			1.0		
Yes	30.4	29.2-31.8	14.1	13.3-15.0	< 0.001	4.2	3.9-4.5	< 0.001
Having seen people smoking in their presence								
No	1.9	1.7-2.0	1.0			1.0		
Yes	7.0	6.5-7.5	4.0	3.7-4.3	< 0.001	1.7	1.6-1.9	< 0.001
Having smoking parents or guardians								
No	3.9	3.7-4.0	1.0			1.0		
Yes	7.1	6.7-7.5	1.9	1.8-2.0	< 0.001	1.2	1.1-1.2	< 0.001

* OR adjusted by the variables significant to the model.

products compared to girls [14]; however, the publication with the analysis of the data collected by Vigescola has not identified sex differences [8].

The results found in this study indicate that older age is associated with a lower chance of the student to use other tobacco products. The national literature on the matter does not present studies that show the prevalence trend of the consumption of other tobacco products according to the students' age. However, the result from this study conflicts with the findings of investigations that assessed cigarette-consumption among Brazilian students, as these have identified that older age is associated with an increase in cigarette-smoking prevalence [15,16].

In this analysis, an association between the use of other tobacco products and the occupational status of the student: the student who works is more likely to use other tobacco products. Other studies have identified that adolescents with more pocket money are more likely to smoke cigarettes [15,17,18]. A study conducted in Brazil aimed at comparing the prevalence of recent use of alcohol, tobacco and other drugs among working and non-working teenage students enrolled in state middle and high schools of the urban area of the city of Cuiabá (Mato Grosso State), Brazil, identified higher prevalence of use of these substances among working students. The authors discuss the possible interpretation of the results found, among them the availability of money, the use of substances, work-related stress, low commitment with the school, early transition into adulthood, among others [18].

The results found in the present analysis verified that having difficulties to sleep, not having close friends, and having experienced domestic abuse increased the likelihood of the student using other tobacco products. Other published studies have identified the association of factors such as conflicts with parents, and feelings of loneliness with the use of tobacco among adolescents [19,20].

In this investigation, it was observed that using cigarettes, alcohol, and having experimented drugs were associated to using other tobacco products. Previous studies have identified that risk behaviors, including the use of alcohol and drugs, are associated with tobacco consumption [19,20,21].

According to the results found, the perception that parents or guardians would care little if they smoked, having parents or guardians who smoke, and having experienced people smoking were associated with the use of other tobacco products, whereas being under family supervision was negatively associated with the chance of the student using other tobacco products. The domestic literature indicates that exposure to environmental tobacco smoke and having smoking parents, as well the feeling

that the parents would not care if they smoke are risk factors for smoking among adolescents [14,19,22]. Analysis of data from the Vigescola, conducted in 2002 in the cities of Curitiba (Paraná State) and Porto Alegre (Rio Grande do Sul State), and in 2004 in the city of Florianópolis (Santa Catarina State), showed that the proportion of students who mentioned exposure to environmental tobacco smoke at home ranged between 48.2%, in Porto Alegre to 38.4% in Florianópolis [22]. Adopting 100% cigarette smoke-free environments is the only effective way to protect adolescents from the hazardous effects of passive exposure to this smoke [23]. Hence the need to develop strategies to reduce passive exposure to cigarette smoke at home. Of mention is that from the analysis of PeNSE data, in state capital cities there was a reduction in the frequency of students who reported having smoking parents [3].

There are some limitations in the findings of this investigation. The cross-sectional design does not allow the establishment of a causative relationship between the associated factors and the outcomes, in this case the use of other tobacco products. It should be noted that despite the cross-sectional design of the study, the odds ratio was used as the measure of association, since it has statistical properties that allow the application of multivariate techniques, and that, for low prevalence outcomes no significant numerical differences are observed between odds ratio and prevalence ratio [24,25].

It is also to be stressed that the results are based on data provided by the students, without validation. A study conducted in Brazil with 13 and 14 year-old public school students aimed at validating tobacco-related self-reported data has identified a poor match between the self-reported use of tobacco and the urine continine concentration, suggesting that the adolescents underestimated their use of tobacco [26].

This is the first investigation that addresses the use of other tobacco products among adolescents nationwide. The importance of systematic monitoring on the prevalence of use of these products is highlighted, in accordance with the recommendations of the World Health Organization Framework Convention on Tobacco Control (WHO-FCTC) [27], article 20, in which the countries commit to gradually deploy a national tobacco consumption surveillance system, and related social, economic and health indicators. The need for effective implementation is also highlighted, as well as strict enforcement of *Law 12,546/2016* [28], regulated by presidential decree [29] and inter-ministry ordinance [30], for Brazil to achieve its goal of continuously and significantly reducing the prevalence of tobacco consumption and exposure to tobacco smoke.

The conclusion is that the prevalence of consuming other tobacco products is high among Brazilian students, and is associated with better socioeconomic conditions, presence of risk-prone behavior, and living in an environment permissible to tobacco consumption.

Contributors

A. L. L. C. Hallal contributed in the data analysis, interpretation, and article writing. V. C. Figueiredo and L. Moura collaborated in the critical review relevant to the intellectual content. R. R. Prado contributed in the data analysis and interpretation. D. C. Malta collaborated in the project conception, critical review relevant to the intellectual content, and approval of the version submitted for publication.

Acknowledgments

References

1. U.S. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. Preventing tobacco use among young people. A report of the Surgeon General. Atlanta: Centers for Desease Control and Prevention; 1994.
2. U.S. Office of the Surgeon General, Office on Smoking and Health. The health consequences of smoking. A report of the Surgeon General. Atlanta: Centers for Disease Control and Prevention; 2004.
3. Malta DC, Sardinha LMV, Mendes I, Barreto SM, Giatti L, Castro IRR, et al. Prevalência de fatores de risco e proteção de doenças crônicas não transmissíveis em adolescentes: resultados da Pesquisa Nacional de Saúde do Escolar (PeNSE), Brasil. Ciênc Saúde Coletiva 2010; 15 Suppl. 2:3009-19.

4. Warren CW, Jones NR, Eriksen MP, Asma S. Patterns of global tobacco use in young people and implications for future chronic disease burden in adults. Lancet 2006; 367:749-53.

5. Eriksen M, Mackay J, Schluger N, Gomeshtapeh FI, Drope J. The tobacco atlas. 5th Ed. Atlanta: American Cancer Socity; 2015.

6. Federal Trade Commission. Smokeless Tobacco Report for 2011. https://www.ftc.gov/sites/default/files/documents/reports/federal-trade-commission-smokeless-tobacco-report-2011/130521smokelesstobaccoreport.pdf (accessed on 25/Jun/2015).

7. Arrazola RA, Singh T, Corey CG, Husten CG, Neff LJ, Apelberg BJ, et al. Tobacco use among middle and righ school students – United States, 2011-2014. MMWR Morb Mortal Wkly Rep 2015; 64:381-5.

8. Szklo AS, Sampaio MMA, Fernandes EM, Almeida LM. Perfil de consumo de outros produtos de tabaco fumado entre estudantes de três cidades brasileiras: há motivo de preocupação? Cad Saúde Pública 2011; 27:2271-5.

9. Ramji R, Arnetz J, Nilsson M, Jamil H, Norström F, Maziak W, et al. Determinants of waterpipe use amongst adolescents in Northern Sweden: a survey of use pattern, risk perception, and environmental factors. BMC Res Notes 2015; 8:441.

10. Ward KD, Eissenberg T, Gray JN, Srinivas V, Wilson N, Maziak W. Characteristics of US waterpipe users: a preliminary report. Nicotine Tob Res 2007; 9:1339-46.

11. Martins SR, Paceli RB, Bussacos MA, Fernandes FLA, Prado GF, Lombardi EMS, et al. Experimentação de e conhecimento sobre narguilé entre estudantes de medicina de uma importante universidade do Brasil. J Bras Pneumol 2014; 40:102-10.

12. Instituto Brasileiro de Geografia e Estatística. Pesquisa Nacional de Saúde Escolar (PeNSE), 2012. Rio de Janeiro: Instituto Brasileiro de Geografia e Estatística; 2012.

13. WHO Study Group on Tobacco Product Regulation. Advisory note: Waterpipe tobacco smoking: health effects, research needs, and recommended actions by regulators. Geneva: World Health Organization; 2006.

14. Barreto SM, Giatti L, Oliveira-Campos M, Andreazzi MA, Malta DC. Experimentação e uso atual de cigarro e outros produtos do tabaco entre escolares nas capitais brasileiras (PeNSE 2012). Rev Bras Epidemiol 2014; 17 Suppl 1:62-76.

15. Malcon MC, Menezes AMB, Chatkin M. Prevalência e fatores de risco para tabagismo em adolescentes. Rev Saúde Pública 2003; 37:1-7.

16. Malcon MC, Menezes AMB, Mata MFS, Chatkin M, Victora CG. Prevalência e fatores de risco para tabagismo em adolescentes na América do Sul: uma revisão sistemática da literatura. Rev Panam Salud Pública 2003; 13:222-8.

17. Unger JB, Sun P, Johnson CA. Socioeconomic correlates of smoking among an ethnically diverse sample of 8th grade adolescents in Southern California. Prev Med 2007; 4:323-7.

18. Souza DPO, Silveira Filho DX. Uso recente de álcool, tabaco e outras drogas entre estudantes adolescentes trabalhadores e não trabalhadores. Rev Bras Epidemiol 2007; 10:276-87.

19. Malta DC, Oliveira-Campos M, Prado RR, Caribé Andrade SS, Mello FCM, Dias AJR, et al. Uso de substâncias psicoativas, contexto familiar e saúde mental em adolescentes brasileiros, Pesquisa Nacional de Saúde dos Escolares (PeNSE 2012). Rev Bras Epidemiol 2014; 17 Suppl 1:46-61.

20. Vieira PC, Aerts DRGC, Freddo SL, Bittencourt A, Monteiro L. Uso de álcool, tabaco e outras drogas por adolescentes escolares em município do Sul do Brasil. Cad Saúde Pública 2008; 24:2487-98.

21. Machado Neto AS, Andrade TM, Napoli C, Abdon LCSL, Garcia MR, Bastos FI. Determinants of smoking experimentation and initiation among adolescent students in the city of Salvador, Brazil. J Bras Pneumol 2010; 36:674-82.

22. Hallal ALC, Gotlieb SLD, Almeida LM, Casado L. Prevalência e fatores associados ao tabagismo em escolares da Região Sul do Brasil. Rev Saúde Pública 2009; 43:779-88.

23. World Health Organization. Protection from exposure to second-hand tobacco smoke. Policy recommendations. Geneva: World Health Organization; 2007.

24. Zocchetti C, Consonni D, Bertazzi P. Relationship between prevalence rate ratios and odds ratios in cross-sectional studies. Int J Epidemiol 1997; 26:220-3.

25. Vigo A. Modelando desfechos comuns: viés e precisão. Cad Saúde Pública 2006; 22:2496-7.

26. Malcon MC, Menezes AMB, Assunção MCF, Neutzling MB, Hallal PC. Agreement between self-reported smoking and cotinine concentration in adolescents: a validation study in Brazil. J Adolesc Health 2008; 43:226-30.

27. World Health Organization. Framework convention on tobacco control. Geneva: World Health Organization; 2003.

28. Presidência da República. Lei nº 12.546, de 14 de dezembro de 2011. Diário Oficial da União 2011; 15 dec.

29. Presidência da República. Decreto nº 8.262, de 31 de maio de 2014. Altera o Decreto nº 2.018, de 1º de outubro de 1996, que regulamenta a Lei nº 9.294, de 15 de julho de 1996. Diário Oficial da União 2014; 2 jun.

30. Brasil. Portaria interministerial nº 2.647, de 4 de dezembro de 2014. Diário Oficial da União 2014; 5 dec.

Resumo

Estimar a prevalência e identificar fatores asso-ciados ao uso de outros produtos do tabaco entre escolares. Foi realizado um estudo transversal, com amostra representativa de escolares que cur-saram o 9º ano do Ensino Fundamental. Foram entrevistados 109.104 estudantes, sendo que 4,8% fizeram uso de outros produtos de tabaco nos últi-mos 30 dias. Os fatores que aumentaram a chance de uso de outros produtos do tabaco foram: sexo masculino, dependência administrativa da escola, trabalhar, morar com mãe e/ou pai, percepção de que os pais ou responsáveis se importariam pouco caso fumasse, ter dificuldade para dormir, não ter amigos próximos, sofrer violência familiar, faltar às aulas, ter feito uso de tabaco e álcool nos últi-mos 30 dias, ter experimentado drogas, possuir pais ou responsáveis fumantes e ter presenciado pessoas fumando. A prevalência de consumo de outros produtos do tabaco é elevada entre estu-dantes brasileiros e está associada com melhores condições socioeconômicas, presença de comporta-mentos de risco e viver em ambiente permissível ao consumo de tabaco.

Produtos do Tabaco; Saúde Escolar; Saúde do Adolescente

Resumen

Estimar la prevalencia e identificar factores aso-ciados al consumo de otros productos del tabaco entre escolares. Se realizó un estudio transversal, con una muestra representativa de escolares que cursaron el 9º año de enseñanza fundamental. Se entrevistaron a 109.104 estudiantes, siendo que un 4,8% consumieron otros productos diferentes al ta-baco durante los últimos 30 días. Los factores que aumentaron la oportunidad de consumo de otros productos del tabaco fueron: sexo masculino, de-pendencia administrativa de la escuela, trabajar, vivir con la madre y/o padre, percepción de que a los padres o responsables les importaría poco, en caso de que fumase, tener dificultad para dormir, no tener amigos cercanos, sufrir violencia fami-liar, faltar a las clases, haber consumido tabaco y alcohol en los últimos 30 días, haber probado dro-gas, tener padres o responsables fumadores y haber presenciado personas fumando. La prevalencia de consumo de otros productos del tabaco es elevada entre estudiantes brasileños y está asociada con mejores condiciones socioeconómicas, presencia de comportamientos de riesgo y vivir en un ambiente permisible al consumo del tabaco.

Productos de Tabaco; Salud Escolar; Salud del Adolescente