Perceived enforcement of anti-smoking laws in bars and restaurants of three Brazilian cities: data from the ITC-Brazil survey

Abstract

Passive smoking causes severe and lethal effects on health. Since 1996 Brazil has been moving forward in the implementation of anti-smoking legislation in enclosed public spaces. This article aims to evaluate the perceived enforcement of anti-smoking legislation in the cities of Porto Alegre (Rio Grande do Sul State), Rio de Janeiro and São Paulo, Brazil, based on the results of the ITC-Brazil Survey (International Tobacco Control Policy Evaluation Project). The results of the survey showed a significant reduction in the proportion of people who saw individuals smoking in restaurants and bars between 2009 and 2013 in the three cities surveyed. Concurrently there was an increase in the proportion of smokers who mentioned having smoked in the outer areas of these facilities. These results likely reflect a successful implementation of anti-smoking laws. Of note is the fact that by decreasing passive smoking we further enhance smoking denormalization among the general population, decreasing smoking initiation and increasing its cessation.

Smoking; Tobacco Smoke Pollution; Legislation

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Introduction

Worldwide, tobacco consumption has killed 100 million people in the 20th century; in the 21st there will be about 1 billion deaths if the current smoking patterns remain. Studies indicate that tobacco use causes 147,000 deaths a year in Brazil.

The World Health Organization (WHO) has warned that the economic and social burden of chronic noncommunicable diseases (cardiovascular, chronic respiratory, diabetes and cancer) are the main barriers to fulfilling of the United Nations Millennium Development Goals. Tobacco use is the only risk factor common to these four groups of noncommunicable diseases.

In turn, passive smoking is the third cause of avoidable deaths in the world, after active tobacco use and excessive consumption of alcohol. Investigations on tobacco use have confirmed the severe and lethal health effects related to an increased risk of death due to heart diseases and cancer, and are a significant risk factor for children (worsening of asthma, respiratory and pulmonary diseases, and sudden childhood death syndrome).

It is estimated that passive smoking causes more than 600,000 premature deaths a year in the world. In Brazil, at least seven people die every day due to this cause.

According to data from the 2013 National Health Survey (PNS in Portuguese), 10.7% of non-smokers were exposed to the smoke of tobacco products at home, and 13.5% of non-smokers were exposed to passive smoking at the workplace.

To reverse the alarming global tobacco epidemic, in 2003 the 56th World Health Assembly approved the first international treaty on public health that established a set of intersectoral public health measures – the WHO Framework Convention on Tobacco Control (WHO-FCTC).

The Brazilian National Congress ratified this treaty in 2005, and its regulations were incorporated into the Brazilian legal system (Decree 5,658/2006). Hereafter, the measures established by the treaty are impositions to be enforced by the country, and the National Tobacco Control Policy came to be guided by these impositions.

WHO-FCTC acknowledges that science has shown unequivocally that exposure to tobacco smoke causes mortality, morbidity and disability, and determines, in article 8, that the Parties to the treaty adopt measures to protect their populations from the risks of passive smoking in public environments, workplaces and public transportation. WHO states that the only way to fully protect the health of the population is by enforcing a complete ban in enclosed public spaces, such as bars, restaurants, malls, healthcare facilities, schools, company offices, etc.

In Brazil, since 1996 Federal Law 9,294/1996 regulates the restrictions regarding use and advertisement of tobacco products. Originally, the law banned the use of cigarettes, cigarillos, cigars, pipes or any other tobacco product in public or private enclosed spaces, except for designated smoking areas in these places (called smoking rooms or smoking lounges), that should be properly isolated and conveniently ventilated. The law was regulated by Decree 2,018/1996, which was not clear or explanatory enough about the isolation and ventilation conditions of the smoking lounges. In practice, the commercial facilities merely separated smokers from non-smokers in the same environment, allowing the tobacco smoke to disseminate in the atmosphere, affecting all customers. Furthermore, most of these were service – provision facilities, such as bars and restaurants; this was thus an occupational health issue, as those affected the most were the workers exposed to the toxic effects of cigarette smoke in their working hours.

The Brazilian Association of Gastronomy, Lodging and Tourism, with support of cigarette manufacturer Souza Cruz, had a program called Coexistence in Harmony, with the purpose of orienting restaurant and hotel owners to ensure “respect to individual rights of smokers and non-smokers, creating conditions for them to live in harmony”. This was a model for which the law was not effective, as it did not ensure the due protection of the population from the risks associated to passive smoking, and that was commonly observed throughout the country.

In the city of Porto Alegre, Rio Grande do Sul, for instance, a municipal law of 2007 banned smoking in public spaces, but allowed the establishment of smoking lounges, without defining their characteristics in regards to demarcation, isolation and ventilation, similar to the 1996 federal legislation.
Encouraged by the obligations established by the WHO-FCTC and laws adopted in different countries, starting in 2008 some Brazilian cities and states approved local legislation that presented advances compared to the federal legislation, as they completely banned smoking in public and private enclosed spaces.

The State of São Paulo, pioneered in this initiative, banning smoking lounges in May 2009. The smoke ban was extended to partially closed spaces on any of its sides by wall, partition, ceiling or roof, even if temporary, wherever there were people circulating or remaining. This means, for instance, that tables in patios or under awnings in a restaurant or bar should also comply with the law.

Following São Paulo, in the same year the State of Rio de Janeiro, sanctioned Law 5,517. This law also banned smoking in totally or partially closed public spaces, and put an end to smoking lounges in these facilities. Of note is the fact that the city of Rio de Janeiro had already had municipal legislation on the matter since 2008.

Concurrently, bills of law sought to change Federal Law 9,294/1996 to align it to the obligations posed by the WHO-FCTC. Only in December 2011 Federal Law 12,546 was approved, banning smoking in public spaces throughout the country, even if the place is only partially closed. This law was regulated by Decree 8,262 in 2014.

The aim of this study is to assess the perceived enforcement of anti-smoking legislation in the cities of Porto Alegre, Rio de Janeiro and São Paulo, based on data of people smoking in bars and restaurants, collected from Waves 1 and 2 of the International Tobacco Control Policy Evaluation Project (ITC) conducted in Brazil in 2009 and 2012-2013.

Method

Since 2009 Brazil has been a member of the ITC survey, a joint effort of international health organizations, investigators and policy makers in more than 20 countries. Its goal is to measure the psychosocial and behavioral impact of the main WHO-FCTC policies in the countries, and thus guide their formulation and development. All ITC surveys are developed using the same methods and conceptual framework.

The ITC-Brazil survey was conducted in the cities of Rio de Janeiro, São Paulo and Porto Alegre. In each city, some 400 smokers and 200 non-smokers living at homes randomly selected from residential phone records of each city where the survey took place were interviewed over the telephone. For homes with more than one eligible individual (having smoked more than 100 cigarettes in life, or having smoked at least 1 cigarette within the last month), the “next birthday method” was used to select only one individual age 18 years of older.

The selection of the number of smokers and non-smokers per city allowed estimates to be obtained with a 5% margin of error for most tobacco use-related questions of the questionnaire.

The first wave of the ITC-Brazil survey took place between April and June 2009, when 1,215 smokers (Rio de Janeiro, 410; São Paulo, 403; Porto Alegre, 402) and 610 non-smokers (Rio de Janeiro, 205; São Paulo, 203; Porto Alegre, 202) were interviewed. The same individuals were contacted again between October 2012 and February 2013 (Wave 2), the sample having been refreshed to replace Wave 1 individuals lost to follow up (58.7% of total loss, being 53.3% in Rio de Janeiro, 62.2% in São Paulo, and 60.5% in Porto Alegre), taking the same selection criteria into consideration: selection at home (assessment of household residents), and selection according to the next birthday criterion. In the second Wave, 1,097 smokers were interviewed (Rio de Janeiro, 343; São Paulo, 390; Porto Alegre, 364), and 733 current non-smokers or former smokers from Wave 1 (Rio de Janeiro, 255; São Paulo, 235; Porto Alegre, 243).

The proportion of residential households found among the households randomly contacted using the residential telephone records and, in the case of Wave 2, also among the households of individuals who had participated in the Wave 1, were approximately 31% for each of the survey Waves. In turn, individual refusal of selected individuals to participate was lower than 5% for both Waves.
Data analysis

The questions asked to assess the “perceived enforcement of anti-smoking legislation in bars and restaurants” by the individuals are presented below:

a) For smokers and non-smokers: “In the last time (within the past 6 months) you went to a bar (or restaurant), were people smoking in the bar (or in the restaurant)?” (yes; no; does not apply; refused to answer; does not know).

b) For smokers only: “Did you smoke the last time you were in a bar (or restaurant), whether inside or outside?” (yes; no; does not apply; refused to answer; does not know); “Did you smoke inside, outside or both?” (inside; outside; both inside and outside; does not apply; refused to answer; does not know).

For all questions, individuals who did not know or refused to answer, or who did not go to a bar or restaurant in the past 6 months were excluded. Moreover, for the specific question about having smoked inside or outside the bar or restaurant, the answer “both inside and outside” was included in the group of those who had smoked inside.

A dichotomous variable was also created, defined as “time in the sample”, to indicate whether the individual had been recruited in Wave 1, with follow-up in Wave 2, or if he/she was a Wave 2 replacement.

The proportion of “perceived enforcement of anti-smoking laws” in bars (or restaurants), simple and adjusted according to time in the sample, sex and age, for the cities of Rio Janeiro, São Paulo and Porto Alegre in the two ITC-Brazil survey waves. Logistic regression analyses using the generalized estimated equations (GEE 22) method were performed separately for smokers and non-smokers. The smokers recruited in Wave 1 and followed in Wave 2 who stopped smoking were analyzed in the group of smokers of Wave 2 (10% of smokers of this Wave). The p-values ≤ 0.05 were used to establish a statistically significant difference of the passive exposure proportions over time.

For all analyses the Stata 12.0 (StataCorp LP, College Station, USA) statistical package was used, taking into consideration the complex sampling process of the ITC survey. The sample weights made the corrections for the expected distribution per smoker (or non-smoker) versus city versus sex versus age group.

The ITC-Brazil survey was approved by the Ethics Research Committees of the National Cancer Institute José Alencar Gomes da Silva and the University of Waterloo, Canada, for Wave 1, and revalidated for Wave 2.

Results

Smoking in bars and restaurants

In Waves 1 and 2, the ITC-Brazil survey asked the respondents if they had seen people smoking in a bar or restaurant, among those who went to such places within six months prior to the survey.

In Porto Alegre, in Wave 1, 69% of the smokers and 58% of the non-smokers saw people smoking in bars, and 17% of the smokers and 32% of the non-smokers saw people smoking in restaurants. In turn, for Wave 2, the proportions went down to 16% of the smokers and 26% of the non-smokers in bars, and 4% of smokers and 10% of non-smokers in restaurants. These data are presented in Figure 1.

The perception of people smoking in bars, in São Paulo, dropped between Waves 1 and 2 from 73% to 13% among smokers, and from 79% to 22% among non-smokers. For restaurants, the proportions between Waves 1 and 2 dropped from 21% to 8% among smokers and 30% to 6% among non-smokers. These data are presented in Figure 2.

In Rio de Janeiro, 14% of the smokers and 29% of the non-smokers have seen people smoking in restaurants, in Wave 1. These proportions dropped to 4% and 10%, respectively, in Wave 2. In bars, 61% of the smokers and 71% of the non-smokers saw people smoking in Wave 1, while 29% of the smokers and 29% of the non-smokers saw people smoking in Wave 2 (Figure 3).

In the total of the three cities, regarding observing people smoke in restaurants, the proportions dropped from 17% to 5% among smokers, and 30% to 9% among non-smokers. In turn, for bars, the proportion went from 68% to 19% among smokers, and from 69% to 26% among non-smokers (data not shown).
Proportion of smokers and non-smokers who observed people smoking inside bars and restaurants, among those who went to these places in the past six months, per wave. Porto Alegre, Rio Grande do Sul, Brazil.

Note: (1) Antismoking laws in Porto Alegre (with smoking lounge) and in the city of Rio de Janeiro; (2) Antismoking laws in the States of São Paulo and Rio de Janeiro: smoking lounges banned; (3) National antismoking laws pending regulation.

* p-values for statistically significant differences of the proportion of passive exposure for Waves 1 and 2 for all scenarios were lower than 0.001.

Smoking in external area of bars

Among the interviewed smokers who reported having gone to a bar and having also smoked in this bar in the past six months, the proportion of individuals who reported having smoked in the external area of the bar increased significantly in all three cities surveyed: from 46% in Wave 1 to 87% in Wave 2 in Porto Alegre; from 40% in Wave 1 to 96% in Wave 2 in São Paulo; and from 65% in Wave 1 to 88% in Wave 2 in Rio de Janeiro (Figure 4).

There was also an increase in the proportion of smokers who did go to a restaurant, had smoked in the past six months, and stated having smoked in the external area: between Waves 1 and 2 it went from 89% to 96% in Porto Alegre; from 77% to 99% in São Paulo; and from 92% to 98% in Rio de Janeiro (Figure 4).

In the total of the three cities, for bars, the proportions went from 48% to 91%, and for restaurants, from 85% to 98% (data not shown).
Figure 2

Proportion of smokers and non-smokers who observed people smoking inside bars and restaurants, among those who went to these places in the past six months, per Wave. São Paulo, Brazil.

Note: (1) Antismoking laws in Porto Alegre (with smoking lounge) and in the city of Rio de Janeiro; (2) Antismoking laws in the States of São Paulo and Rio de Janeiro: smoking lounges banned; (3) National antismoking laws pending regulation.

* p-values for statistically significant differences of the proportion of passive exposure for Waves 1 and 2 for all scenarios were lower than 0.001.

Discussion

When Wave 1 of the ITC-Brazil survey was conducted, in 2009, the city of Porto Alegre had a municipal law, from 2007, that banned smoking in enclosed spaces but allowed designated smoking lounges. In turn, the city of Rio de Janeiro passed a law in 2008 determining smoke-free environments. Wave 2 (2012-2013) was conducted about five years after the laws of Porto Alegre and Rio de Janeiro entered in effect, three years after anti-smoking laws were implemented in the states of São Paulo and Rio de Janeiro, and almost a year after the passing of Federal Law 12,546/2011, yet to be regulated and enforced.

Perception of smoking in restaurants and bars

The results from the ITC-Brazil survey showed a significant reduction of people perceived to be smoking inside restaurants and bars between Waves 1 and 2, among smokers and among non-smokers in the cities of Porto Alegre, São Paulo and Rio de Janeiro. These results likely reflect a major successful step in the enforcement of municipal and state laws in the three cities.

Rio de Janeiro and São Paulo have invested in disseminating and enforcing anti-smoking laws by means of educational campaigns through the media, doing checks of people’s breath carbon monoxide in areas of buzzing nightlife, having cars and uniforms identified with the campaign logo, establishing partnerships with phone companies to send messages to consumers, training of city and
Figure 3

Proportion of smokers and non-smokers who observed people smoking inside bars and restaurants, among those who went to these places in the past six months, per Wave. Rio de Janeiro, Brazil.

Note: (1) Antismoking laws in Porto Alegre (with smoking lounge) and in the city of Rio de Janeiro; (2) Antismoking laws in the States of São Paulo and Rio de Janeiro: smoking lounges banned; (3) National antismoking laws pending regulation.

* p-values for statistically significant differences of the proportion of passive exposure for Waves 1 and 2 for all scenarios were lower than 0.001.

The passing of the anti-smoking federal law in December 2011, despite lacking regulation, and the broad coverage by the media, might have strengthened the movement towards the adjustment of the facilities, enhancing Wave 2 results.

Another possibility for a decrease in the proportion of people perceived to be smoking and stronger enforcement of the anti-smoking law in bars and restaurants of Porto Alegre comes from the development of other tobacco-control policies, such as health warnings on cigarette packs, tax increasing, and treatment for tobacco addiction provided by the Brazilian Unified National Health System (SUS), which increase the knowledge of the population and support smoking cessation, thus causing an impact in the prevalence of smokers and in the willing preference for smoke-free environments. Data from the Surveillance System of Risk and Protective Factors for Chronic Noncommunicable Diseases through Telephone Interviews Survey (VIGITEL), the prevalence of smokers in Porto Alegre dropped from 18.2% in 2012 to 16.5% in 2013.

One can see, however, that the proportion of perceived non-enforcement of anti-smoking laws found in Wave 2, for bars, is higher than for restaurants. For bars, more than one fourth of non-smokers saw people smoking, in the three cities. This might have occurred because, typically, in Brazil, bars have a more relaxed, informal environment compared to restaurants. Because of their physical distribution, they are normally partially open facilities, with tables on patios or sidewalks, or clients consuming standing by the counter or outside. This possibly makes the smoker feel more comfort-
Figure 4

Proportion of smokers who smoked in the external areas of bars and restaurants, among those who went to these places in the past six months and stated having smoked, per city, per Wave.

able to ignore the ban, and the other clients to be more tolerant. All these factors may also hamper the employees or owners from preventing people from smoking.

A confounding factor for the respondents, which may contribute to an even higher proportion of smokers in the cities, is that despite the 2009 laws of Rio de Janeiro and São Paulo having specified that "partially enclosed places on each of its sides, by wall, partition walls, ceiling or roof" are also included in the smoking ban, in practice the enforcement of the law in such spaces still causes doubts in the population, as they are likely to infer that a space under an awning or canopy is not considered an area "inside a restaurant or bar". Hence, the results from the survey on the perception of people smoking in the internal spaces of such places may reflect some mistaken interpretation by the respondents in their responses.

The enforcement of the anti-smoking law is seen in the lower perception of people smoking in restaurants and bars between Waves 1 and 2, supported by an increase in the proportion of smokers who smoked in the external areas of bars and restaurants in the past six months.

Regarding Uruguay and Mexico, countries where the ITC survey was also conducted, in the former, exposure to passive smoking did not change between 2008 and 2010 (in Montevideo, 6%-6%; in the other cities, 8%-9%) 24. Since 2006 Uruguay has had national smoke-free environment legislation. Air monitoring data from enclosed spaces collected in 2010 indicate high enforcement of the legislation 25. In Mexico City, the prevalence of passive smoking in restaurants remained stable between 2008 and 2010 (5%-7%), while in other Mexican cities with passive smoking prevalence higher than Mexico City’s, a statistically significant reduction was observed in the same period (32%-17%) 24. Mexico City was the first jurisdiction of the country to ban smoking in public and workspaces, in April 2008. In May of that year Mexico’s General Tobacco-Control Law banned smoking in enclosed spaces countrywide, but allowed that designated smoking areas be established in these spaces, provided that there were isolation and ventilation systems in place, which scientific studies have shown to be ineffective in regards to health protection 26.

Regarding bars, the passive smoking exposure likelihood was higher in other Uruguayan cities (36%-22%) compared to Montevideo (14%-8%), and the drop in prevalence of exposure over that
period was not statistically different per city. Exposure to passive smoking in bars was also higher in other Mexican cities (86%-74%) compared to Mexico City (31%-23%), and the respective drops observed in 2008 and 2010 were of the same magnitude 24.

The ITC-Brazil Survey results observed in bars and restaurants are extremely important, and they indicate strong enforcement and support to anti-smoking laws in effect in these cities. The data also indicate a decrease in passive smoking exposure, with direct impact on the health of customers and, particularly, employees, as two studies conducted by the Heart Institute (Incor), Sao Paulo University, Faculty of Medicine, Clinics Hospital have shown. Breath carbon monoxide measurements were taken in bars, restaurants and nightclubs of Sao Paulo and Rio de Janeiro, before and after anti-smoking laws were in effect. In Sao Paulo, the results indicated that carbon monoxide concentration in air exhaled by non-smoking waiters dropped from 7 parts per million (ppm) (similar to that of light smokers) to 3.5ppm (level of non-smokers) 27. In Rio de Janeiro, the carbon monoxide concentration in the air of bars dropped from 5 ppm to 1 ppm, very close to the level of smoke-free environments of the city (less than 1ppm) 28.

In many countries, studies have shown a significant reduction of respiratory symptoms among workers, and in the number of hospital admissions due to acute cardiovascular disease after the adoption of laws banning smoking in enclosed spaces. In Scotland, for instance, ten months after the ban of smoking in enclosed spaces was adopted, hospital admissions due to acute coronary artery disease dropped 17% 29. In Brazil, a study presented in 2015 by Incor revealed that the velocity in which the number of hospital admissions due to cardiovascular disease or stroke decreased tripled after the law became effective in Sao Paulo. Between 2005 and 2009, the drop in admission rates due to these conditions was 1% a year. After the anti-smoking law became effective, this decrease was three times higher, reaching 3% a year 30.

The main justification claimed by the hotel, gastronomy and entertainment sectors not to ban cigarette smoking in enclosed spaces was the economic loss they could suffer from the loss of smokers. This was proven wrong with the experience from this legislation. A survey conducted by the newspaper Folha de S. Paulo in 60 places of entertainment in the capital city showed that 82% of the business owners stated their flow of customers either grew or remained stable; 85% stated that the length of stay of customers increased or did not change; finally, 95% informed there was an increase in hiring or there were no layoffs of employees 31. Another important piece of data came from a survey conducted by Abrasel (Brazilian Association of Bars and Restaurants), indicating that after two years of the law being in effect, there was an increase in the revenue of restaurants, bars and nightclubs. In the city of Sao Paulo, the revenue increased 15%, and statewide, the revenue raised from about R$ 37.5 million, in 2009, to R$ 46 million in 2011 32; finally another survey conducted also in the city of Sao Paulo by Ibope one year after the anti-smoking law became effective showed that 29% of the city residents believe it protects people from hazardous tobacco smoke, and that 49% of smokers were smoking less on account of the anti-smoking law 33.

Limitations

The results of the ITC-Brazil survey reflect the information provided by individuals selected from a record of residential landline telephone numbers. The proportion of smokers and non-smokers who do not have a landline among the low-income, low-education population is likely higher than the proportion of selected individuals 34. Therefore, the presented results may not represent the totality of smokers/non-smokers of the cities surveyed, in case the individuals excluded had a “passive exposure pattern” different from what was presented in this article. Finally, our data are also subject to bias of information of the respondents themselves.

Conclusion

The results indicate that the smoke-free environment legislation in Brazil, whether local or national, have been effective in reducing exposure to smoking in bars and restaurants; however, there is still room for improvement.
Another important factor is that by decreasing exposure to passive smoking, we further increase smoking denormalization in the overall population, which may decrease smoking initiation among the young people and increase cessation among regular smokers 35,36,37.

One expects that with the regulation of the national anti-smoking law, the results of the next ITC-Brazil survey waves will be even more significant, considering that its implementation will likely engage in stronger commitment by local governments, and in the capacity-building of the public health surveillance operations in these cities. The ITC-Brazil survey third wave may assess this possibility, particularly in the city of Porto Alegre, whose local legislation will be revoked by the national law.

Contributors

F. L. Mendes contributed with the design, data analysis, article writing and revising. A. S. Szklo, C. A. Perez and G. T. Fong collaborated with data analysis, article writing and revising. T. M. Cavalcante contributed with the revision of the article and approval of its final version.

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PERCEIVED ENFORCEMENT OF ANTI-SMOKING LAWS IN BARS AND RESTAURANTS

References

Resumo


Hábito de Fumar; Poluição por Fumaça de Tabaco; Legislação

Resumen

El tabaquismo pasivo causa serios y mortales efectos para la salud. Desde 1996, Brasil ha avanzado en la implementación de la legislación antitabaco en locales públicos cerrados. Este artículo busca evaluar la percepción del cumplimiento de la legislación antitabaco en las ciudades de Porto Alegre (Rio Grande do Sul), Rio de Janeiro y São Paulo, Brasil, en base a los resultados de la investigación ITC-Brasil (International Tobacco Control Policy Evaluation Project). Los resultados de esta investigación mostraron una reducción significativa de la proporción de personas que notaron individuos fumando en restaurantes y bares entre 2009 y 2013 en las tres ciudades investigadas. Paralelamente, hubo un aumento de la proporción de fumadores que informaron haber fumado en el área externa de esos establecimientos. Tales resultados probablemente reflejan una implementación exitosa de las leyes antitabaco. Vale resaltar que al disminuir la exposición al humo pasivo, aumentamos incluso más la desnormalización del tabaquismo en la población en general, pudiendo así disminuir su iniciación y aumentar el abandono del tabaco.

Hábito de Fumar; Contaminación por Humo de Tabaco; Legislación

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