

Tobacco Industry Interference in Brazil: the Necessity of Settling Accounts

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Interferência da Indústria do Tabaco no Brasil: a Necessidade do Ajuste de Contas

Interferencia de la Industria Tabacalera en Brasil: la Necesidad del Ajuste de Cuentas

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Abstract

Introduction: In Brazil, illegal actions of advertising, promotion, and sponsorship by part of the tobacco industry are increasingly identified in music events, and through social media, aimed mainly to attract young people to use cigarettes. **Objective:** To develop a methodology that allows the creation of a parameter of quantification of the negative impacts to the health sector of non-compliance with the law. **Method:** Combination of the current national information about i) the equivalence between “mean direct cost of medical care” and “deaths by diseases attributable to tobacco addiction” and ii) the equivalence between “the portion of the profit translated into marketing actions” and “deaths of smokers who contributed for the generation of this profit through purchase of cigarettes” in order to obtain the relation between “direct cost of the treatment” vs “portion of the profit translated into market actions”. The diseases selected were those that presented the biggest direct cost of treatment attributable to tobacco. **Results:** For every cent invested in marketing strategies by the tobacco industry, Brazil spends 1.93 times more financial resources to treat tobacco-related diseases. **Conclusion:** The measurement of the liability for non-compliance of the tobacco national legislation is essential to offset part of the associated costs of the treatment of patients and programs of tobacco cessation to favor the reduction of smoking prevalence in Brazil.

Key words: Tobacco Industry; Tobacco-Derived Products Publicity; Tobacco Use Disorder/economics; Compensation and Redress; Social Marketing.

Resumo

Introdução: No Brasil, cada vez mais são identificadas ações ilegais de publicidade, propaganda e patrocínio por parte da indústria do tabaco em eventos musicais e por meio das redes sociais, voltadas a atrair principalmente o público jovem para o uso do cigarro. **Objetivo:** Desenvolver uma metodologia que permita estabelecer um parâmetro de quantificação dos impactos negativos para o setor saúde desse descumprimento da lei. **Método:** Combinaram-se as informações nacionais existentes sobre i) a equivalência entre “custo direto médio da assistência médica” e “mortes por doenças atribuíveis ao tabagismo” e ii) a equivalência entre “a parcela do lucro revertido em ações de *marketing*” e “mortes de fumantes que contribuíram para a geração desse lucro por meio da compra de cigarros”, de forma a se obter a relação “custo direto do tratamento” vs “parcela do lucro revertido em ações de *marketing*”. As doenças selecionadas foram aquelas que apresentam os maiores custos diretos de tratamento atribuíveis ao fumo. **Resultados:** Para cada centavo investido em *marketing* pela indústria do tabaco, o Brasil tem um gasto com tratamento de doenças relacionadas ao tabaco 1,93 vezes superior ao dinheiro investido pela indústria. **Conclusão:** A mensuração da responsabilização dos violadores da legislação nacional para o controle do tabaco é fundamental para compensar parte dos custos associados ao tratamento de pacientes e aos programas de cessação ao fumo, favorecendo assim a redução do tabagismo no país.

Palavras-chave: Indústria do Tabaco; Publicidade de Produtos Derivados do Tabaco; Tabagismo/economia; Compensação e Reparação; Marketing Social.

Resumen

Introducción: En Brasil, es cada vez más común identificar acciones ilegales de publicidad, promoción y patrocinio del tabaco por parte de la industria tabacalera en eventos musicales y a través de redes sociales, destinadas principalmente a atraer al público joven al consumo de cigarrillos. **Objetivo:** Desarrollar una metodología que permita establecer un parámetro para cuantificar los impactos negativos al sector de la salud de esa acción ilegal de la ley. **Método:** El artículo integra la información nacional existente sobre i) la equivalencia entre el “costo directo promedio de asistencia médica” y “muertes por enfermedades atribuíbles al tabaquismo” y ii) la equivalencia entre “la parte del ingreso usado en acciones de *marketing*” y “las muertes de fumadores que han contribuido a la generación de estos ingresos a través de la compra de cigarrillos”, para obtener la relación “costo directo del tratamiento” vs “parte de los ingresos usados en acciones de *marketing*”. Las enfermedades seleccionadas fueron las que presentaron los costos más altos de tratamiento directo atribuíbles al uso del tabaco. **Resultados:** Por cada centavo invertido en *marketing* por la industria tabacalera, Brasil tiene un gasto en tratamiento de enfermedades relacionadas con el tabaco 1,93 veces mayor que el monto invertido por la industria. **Conclusión:** Medir la responsabilidad de los infractores de la legislación nacional de control del tabaco es esencial para compensar parte de los costos asociados con el tratamiento de los pacientes y con los programas para dejar de fumar, favoreciendo así la reducción del consumo de tabaco en el país.

Palabras clave: Industria del Tabaco; Publicidad de Productos Derivados del Tabaco; Tabaquismo/economia; Compensación y Reparación; Mercadeo Social.

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INTRODUCTION

Currently, there are 1.1 billion smokers in the world under major risk of developing severe diseases caused by smoking than non-smokers such as cancer, cardiovascular and chronic respiratory diseases^{1,2}. Consequently, smoking is responsible for more than eight million annual deaths worldwide, being seven million the direct result of tobacco use, while nearly 1.2 million are attributable to non-smokers exposed to passive smoking². In Brazil, smoking causes 157 thousand deaths annually, corresponding to 12.6% of the total annual deaths³, responsible for 21.4% of all deaths by cancer⁴, 74% of the deaths by chronic obstructive pulmonary disease (COPD), 18% of the deaths by coronary diseases (angina and infarction) and 13% of deaths by cerebrovascular diseases (stroke)³. Still, it is worth pointing out that smoking *per se* is also considered a disease and as such is included in the tenth edition of the International Classification of Diseases and Related Health Problems (ICD-10) of the World Health Organization (WHO)⁵.

To face this global epidemic, it was created the first international treaty of public health with binding effects of the history of WHO, the WHO Framework-Convention on Tobacco Control (WHO/FCTC)⁶. Its objective is “to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco use and exposure from tobacco smoke”. One of the effective actions to reduce the demand for tobacco is addressed in the compromise disposed in Article 13 of WHO/FCTC⁶. In this article, the Parties compromise to undertake a comprehensive ban of all tobacco advertising, promotion and sponsorship.

The relevance of this compromise to reduce the number of tobacco users is symbolized in the words of the then WHO General Director, Gro Brundtland, when she highlights that “smoking is a communicable disease; communicable from the media, the entertainment industry and more directly through marketing actions and promotion of tobacco products by the industry”⁷. Therefore, explicit forms of its association with glamour, pleasure, sexual and physical performance, among other, eventually encourage the initiation of youths and adolescents to use psychoactive substances releasing products and create chemical dependence and mental disorder^{8,9}.

Actually, in USA and UK internal documents confiscated by litigation, it is clear how transnational companies, also doing business in Brazil, improve their capacity to induce adolescents to smoking, being this initiation to smoking essential for “business profitability” (e.g., “Today’s teenager is tomorrow’s potential regular

customer, and the overwhelming majority of smokers first begin to smoke while still in their teens...The smoking patterns of teenagers are particularly important to Philip Morris”⁹).

Since 2005, Brazil is a Member State of WHO/FCTC which fostered tobacco control measures that were being implemented in the country since the 1990 decade. In this scenario, Article 220 of the Federal Constitution of 1998 stands out because it opened the possibility of restrictions to tobacco marketing advertising through Federal Law number 9.294 of 1996¹⁰. This Law, which initially limited the time to vehiculate advertising in the principal communication means was gradually modified by other federal laws until in 2011, when tobacco products advertising was banned¹⁰. Currently in the country, consequently, pro-tobacco advertising in television, radio, newspapers, magazines, Internet, art and sport events are banned, remaining only the authorization to expose tobacco by-products in retailers, submitted to a set of specific restrictions determined by the Brazilian Health Regulatory Agency (ANVISA)¹¹. It is emphasized the mandatory inclusion of sanitary warning about smoking-related health damages at the retailers showcases and front windows with tobacco products.

These actions, added to other WHO/FCTC measures implemented in Brazil, like tobacco products tax measures, implementation of smoke-free collective environment, promotion of smoking cessation and implementation of clarification campaigns about tobacco damages, generated relevant results in terms of reduction of the prevalence of smokers, including youths, and, consequently, reduction of tobacco-caused deaths (e.g., reduction of nearly 60% of the proportion of adult smokers in 15 years: from 34.6% in 1989 to 14.7% in 2013)^{12,13}.

Despite all the efforts, in Brazil, nearly 19% of the adolescents between 13 and 15 years still try cigarettes¹⁴ lured by tobacco industry marketing strategies. The adolescents who are trying cigarettes are those mentioned in the industry internal documents and a part of them will continue smoking into adult life^{12,14}. This situation contributes, therefore, for an “evil cyclic movement” where the perpetuation of the tobacco industry profit occurs at the expense of sickening and death of its current users, victims of a chemical dependence initiated in childhood and adolescence and, consequently, of the cumulative effect of smoking throughout time¹.

WHO estimates that the use of cigarette kills two at each three smokers¹⁵, incurring, consequently, in health treatment costs and loss of productivity³. It is estimated yet that the cost of tobacco for the global economy is approaching US\$ 2 trillion year, i.e., approximately 2% of the global Gross Domestic Product (GDP)^{16,17}. In Brazil,

a study about the tobacco use attributable disease burden pointed out that the direct costs of medical care related to smoking correspond to nearly 8.0% of the whole country's health public and private expenditure, and if the indirect costs of productivity lost by early death and impairment are added, it reaches 0.96% of the whole national GDP^{3,18}. And tobacco tax collecting covers but 23% of smoking generated losses³.

This article, therefore, has the objective of developing a methodology that allows, based on data from the existing national surveys about 'smoker' behavior, to establish a relation between the portion of the tobacco industry profit translated in marketing tactics to lure new smokers and the costs resulting from the treatment of tobacco-related diseases of the current smokers.

METHOD

The present article proposes a methodology that allows the combination of the information from two studies presented thoroughly in articles already published^{3,15}.

Study I: Equivalence between profit translated into marketing actions and deaths of smokers who contributed for the generation of this profit¹⁵.

The purpose of tobacco industries is to sell cigarettes and other tobacco products and, like any firm, the major goal is to increase profits and expand their market share. For such, the companies continue to use increasingly a

portion of the profits from cigarettes sales in strategies to undermine tobacco control policies and capture new users, ensuring the expansion of their businesses¹⁹. Among the several examples of strategies that attempt to disconnect the negative image of their main business, investments in social, cultural, environmental, events and researches can be mentioned¹⁹.

And what is the cost to the Brazilian society in terms of deaths from this investment in marketing of the tobacco industry? To respond to this question, the study quantified the impact of legal cigarette sales in deaths based in the following logic flow (Figure 1).

The study was based on data about smoking behavior of the Brazilian user aged 35 years or older in 2013 collected from the National Health Survey (PNS)²⁰ and from the Secretariat of Federal Revenues²¹, further to information about mortality rate adjusted by the age distribution of the Brazilian Population for specific diseases according to gender and smoker status (smoker, ex-smoker and non-smokers)^{22,23}. The available data of disease-specific mortality by gender of the Brazilian population were also utilized²³.

Further details about the study methodology involving the estimate of the profit of the tobacco industry originated from legal cigarettes sales and calculations of fractions of mortality by specific diseases attributable to the use of legal cigarettes, i.e., necessary data to establish the equivalence between the profit invested fully in marketing actions and

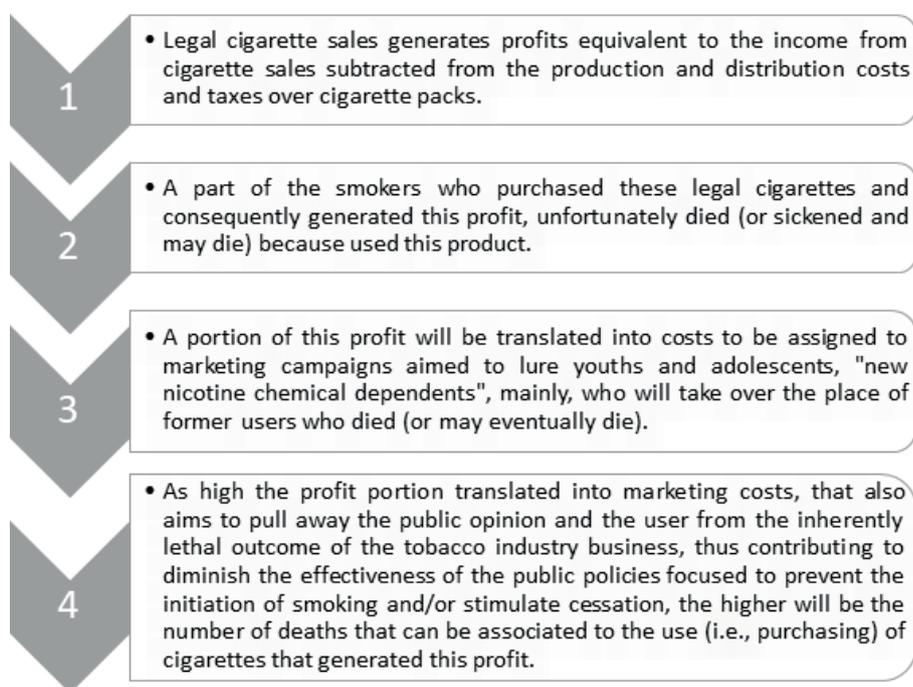


Figure 1. Logic flow of quantification in deaths of smokers from the profit originated from sales of legal cigarettes and translated into marketing actions

deaths of smokers who contributed for the generation of this total profit, can be found in recent publication¹⁵.

Study II: Equivalence between direct healthcare costs of tobacco-related diseases and deaths attributable to smoking³.

The tobacco burden to the country in terms of mortality, morbidity and direct costs of medical care of 16 tobacco-related diseases was calculated in 2015. For such, a mathematical model was developed, based on a probabilistic microsimulation of thousands of individuals aged 35 years or more²⁴, where the parameters utilized by the model relied upon: i) general mortality of the population and specific mortality by disease, age and gender²³; ii) prevalence of smokers/ex-smokers²⁰; iii) relative risks of developing specific disease according to age, gender and condition of tobacco use²⁵; and iv) lethality per age and gender for the respective illnesses^{23,26,27}. In addition, for the direct cost of medical care, it was estimated the average unit cost per disease for the National Health System (SUS) and for the supplementary health sector through micro-costing and cost per procedure²⁸⁻³².

More details about the methodology of the model and calculation of the respective costs of the diseases can be found in a recent publication³.

Combining Study I and Study II:

The diseases selected for the present article were those that presented the higher direct treatment costs attributable to smoking³ and were present in the calculations of study I as well: ischemic heart diseases (ICD-10 I20–I25), COPD (ICD-10 J40–J44), Stroke (ICD-10 I60–I69) and lung cancer (ICD-10 C33–C34)⁵.

Considering that the data of the study I bring the possibility of reflection about the cost in lives resulting from the investments in marketing of the tobacco industry, including donations as strategy to create alliances against tobacco reducing measures¹⁹, it is possible to think in moving beyond and shift from a “moral-social” cost to a financial cost. For such, it is necessary to divide the information of direct cost of medical treatment/care associated to deaths by smoking, which was estimated in study II, by the equivalence between the profit fully translated into marketing actions expenses and deaths of smokers who contributed to generate this total profit, which was estimated for study I. In that manner, it is established a constant relation between “mean direct cost of treatment” and “potential expense to be used in marketing actions”, that can be useful in the cases where it is feasible to find the value actually spent with, for example, a marketing campaign in order to determine the equivalent cost for Brazil in terms of treatment for smokers.

It is worth mentioning that the direct costs of treatment/care calculated originally in Reais (R\$) of

2015 were updated for 2013 by the inflation adjustment measured by the variation of the Broad Consumer Price Index (IPCA)³³, so it can be possible to use the same year of reference to combine the studies I and II.

RESULTS

Study I:

In Brazil, the study estimated that, in 2013, each R\$ 0,137 million of profit earned by the tobacco industry with cigarette sales and hypothetically used fully for marketing strategies was equivalent to one death by COPD, lung cancer, acute myocardial infarction, acute coronary syndrome or stroke attributable to smoking (Table 1).

Study II:

During 2015, smoking was responsible for 93,889 deaths by five causes: COPD, lung cancer, acute myocardial infarction, acute coronary syndrome and stroke. Considering still that these deaths hold correlation with the existing respective total cases diagnosed (i.e., through lethality among the incident cases of the disease)^{23,26,27}, smoking was responsible for 470,666 cases diagnosed of acute myocardial infarction or acute coronary syndrome, 59,509 cases diagnosed with stroke, 378,594 cases of COPD and 26,850 diagnoses of lung cancer. The total cost to treat these ill individuals, who obviously include those who died, was estimated in R\$ 24,776 million, corrected for 2013. And the mean direct cost of treatment/care of these cigarette use-related diseases equivalent to one death was R\$ 0.264 million (Table 1).

Combining Study I and Study II:

For every cent invested in marketing by the tobacco industry, Brazil spends 1.927 times more to treat tobacco-related diseases than the amount invested by the industry (Table 1 and Figure 2).

DISCUSSION

The WHO/FCTC establishes references for tobacco control in order to reduce continuously and substantially its use and its sanitary, social, environmental and economic impacts. However, its measures are continuously undermined and obstructed by tobacco industry strategies to keep its capacity of luring youths to smoking and, thus, keep its consumer market: either through breaches left in the national legislation, violation of the existing laws or even lawsuits intended to revert or at least, delay the adoption of effective measures to reduce the use of their products. As a recent example of the efforts involved with this last strategy, it is worth mentioning ANVISA's norm which banned the use of flavoring additives in tobacco

Table 1. Relation between the mean direct cost of treatment of the cases diagnosed attributable to cigarette use and the portion of the tobacco industry translated into marketing actions

Diseases	Study I "Part of the tobacco industry profit equivalent to 1 death" *			Study II "Direct cost of treatment of diagnosed cases attributable to cigarette use" *				Studies I and II: Relation "mean direct cost of the treatment" vs "portion of the profit translated into marketing actions"
	Deaths attributable to legal cigarette use	Total profit (R\$ million)	Portion of profit equivalent to 1 death (R\$ million)	Deaths attributable to cigarette	Diagnosed cases attributable to cigarette	Direct cost of treatment (R\$ million) #	Mean direct cost of treatment equivalent to 1 death (R\$ million) #	
Acute myocardial infarction/acute coronary syndrome	9,858	3,090	na	28,195	470,666	7,131	na	na
Stroke	6,780	3,090	na	10,812	59,509	1,872	na	na
Chronic obstructive pulmonary disease	3,416	3,090	na	31,120	378,594	13,796	na	na
Lung cancer	2,479	3,090	na	23,762	26,850	1,976	na	na
Total	22,533	3,090	0,137	93,889	935,619	24,776	0,264	1,927

Captions: na=not applicable; *related to 35 years old or older individuals; #reference year 2013³³

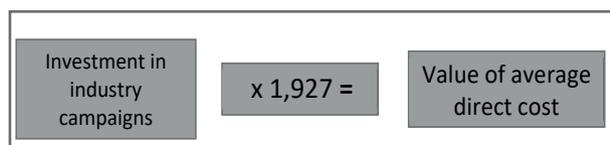


Figure 2. "Disproportion" between the value invested by tobacco industry in marketing actions and what is spent with treatment

products in 2012^{34,35}. The measure failed to come into force because of an injunction granted to the National Confederation of Industry (CNI) by the Supreme Court (STF) that argued whether ANVISA would be legally competent to determine this prohibition.

Smoking is frequently described as a pediatric disease⁵. Not because the negative consequences to health resulting from smoking are limited to youngsters, but because the initiation occurs in the adolescence, a time of life characterized by intense changes, pursue of self-affirmation, rebellion and transgression, when youngsters attempt to experience new attitudes and behaviors^{9,14,20}.

Although the tobacco industry denies vehemently that it targets marketing strategies intended to reach the young population, internal documents obtained from international lawsuits revealed that the tobacco industries did and do it and, that, actually, depend on the consumer market of youths for its long-term survival³⁶⁻³⁹. Several studies have revealed consistently that the exposure to advertising/promotion of tobacco increases the likelihood

of adolescents to start smoking⁴⁰⁻⁵³, having been proven a relationship "dose-response"⁵².

Although the Brazilian legislation limits the depiction of tobacco products to the stores⁵⁴ internal space, the ideal would be that the regulation banned any visibility in these spaces. In addition, the international/national experience shows that, whenever publicity, promotion and advertising of tobacco products are banned in certain places/communication means, there are marketing investments of the tobacco industry to "circumvent" this restriction and/or stimulate the "illegal" migration to medias more difficult to control, such as videogames, mobile and Internet advertising⁵⁵, which indicates the importance of the continuous monitoring of the perception of all types of publicity. Actually, the Internet has become a field to propagate tobacco products use. It is increasingly common to identify the utilization of digital influencers in social network advertising legal and illegal tobacco-products⁵⁶. This theme has gained so much sensitiveness that in the 8th. Session Conference of the Parties of the WHO/FCTC held in 2018, the member states decided to establish a working group to develop specific guidelines to challenge the actions related to the Article 13 of the Convention, mainly for its cross-board impact triggered by the technological advancements of the last decades⁵⁵.

With the banning in the traditional medias and authorization to depict tobacco products only in retailers/

point of sales, there was a “physical expansion of these retailers” in publicity actions involving big musical events as “Rock in Rio” and Lollapalooza⁵⁷. Specifically in the case of the 2017 Rock in Rio, the State of Rio de Janeiro Prosecutor Office (MPRJ) filed a Civil Public Action (ACP) against the company Souza Cruz, the Rock World (responsible for the event Rock in Rio) and tobacco store Vega Fina for the identification of a set of illegal activities of promotion and advertising of cigarettes of the brand Kent⁵⁸. Among the violations proven, it stood out: sale of kits with cigarette packs and electric lighter with the logo of “Rock in Rio”, utilization of peddlers in the space of the event, utilization of open lighted stand and the brand of the product. The investment for the implementation of the tobacco store, according to the MPRJ in the process of the ACP, shows clearly the illegal advertising of the product. Nearly four million Reais were invested in the event, R\$ 45 thousand of which only for purchasing the product to be sold. When the MPRJ received the information about the value invested in this marketing campaign from the defendants, they could have multiplied this figure for 1,927 to have a glimpse of the correspondent average value spent to treat tobacco-associated diseases (R\$ 7,708,000.00). This would be an example of the application of the methodology described in this article to help to determine the redress value.

LIMITATIONS

It was found a steady relationship that the expenses Brazil incurs with treatment/care of tobacco attributable events is nearly two times higher than the investment in marketing of the tobacco industry targeted to “capture” new smokers. This relation depends, obviously, on the parameters utilized either in study I or in study II. For example, if the tobacco industry profit and/or the proportion of smokers of legal cigarettes is not maintained constant over time, this relation encountered will be modified. In addition, the current equivalence found between the profit invested fully in potential marketing actions and deaths of smokers who contributed for the generation of this total profit may not be perfectly proportional to the expected equivalence between the value actually spent in a certain marketing campaign and deaths of smokers, depending on the formula utilized to calculate the disease-specific fractions of mortality attributable to the use of legal cigarettes^{15,59}. This steady relationship also depends on the evolution of the procedures costs in SUS because, among other aspects, of the incorporation of new technologies. However, it is worth mentioning that PNS, which is held at every five years, will allow the periodic updating of great part of the parameters utilized for the calculation

of this relationship for the Brazilian scenario²⁰. And the direct cost in care will be corrected by the inflation of the year for which the analysis is being made, having as reference the year the PNS was conducted, preferentially. In addition, it is important to note that the current low proportion of smokers in the Brazilian population²⁰, the relative annual maintenance of the profits reported by the tobacco industries⁶⁰ and the low rate of incorporation of new procedures and/or medications to treat the diseases selected in the article⁶¹ reinforce the hypothesis that the steady relationship found for 2013 may not undergo significant changes along the years.

CONCLUSION

In Brazil, actions of publicity, advertising and sponsorship continue to be identified by part of the tobacco industry in musical events and through social network, which is banned. It is fundamental that the occurrence of these infringements is evaluated and measured the actual dimension of the negative impact of the illegal marketing actions. To test the limits of the State of inspecting irregular advertisement is part of the strategies of the tobacco industry to stimulate, at any cost, not only the maintenance of the use of tobacco products by adult smokers, but, mainly to induce the initiation of youngsters and children to smoking.

The methodology described in this article can serve as a parameter to quantify the accountability of the transgressors of the national legislation in what concerns the compensation of part of the costs associated to the treatment of the patients and programs of smoke cessation. This redress can serve also as a resource to support the development of surveys aimed to quantify the positive impact of the campaigns about the health system and national actions to dissuade smoking.

CONTRIBUTIONS

André Salem Szklo, Felipe Lacerda Mendes, Tânia Maria Cavalcante and João Ricardo Viegas contributed substantially for the conception, interpretation of the data, wording and final approval of the version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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