

Tobacco Addiction, a Corporate Tobacco Industry Transmissible Pathology. How Health Professionals Can Contribute to Stop this Epidemic?

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Tabagismo, uma Patologia Corporativa Transmissível pela Indústria do Tabaco. Como os Profissionais de Saúde podem Contribuir para Deter essa Epidemia?

Tabaquismo, una Patología Corporativa Transmisibile pela Industria Tabacalera. ¿Cómo los Profesionales de la Salud Pueden Contribuir a Detener esta Epidemia?

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INTRODUCTION

Nearly 71 % of the deaths in the world are caused by chronic non-communicable diseases (NCD)¹. Although in the past they were considered diseases of wealthy countries, currently 80% of these deaths occur in poor and middle income countries².

The main risk factors for the onset of NCD are smoking, inappropriate diet, sedentarism and alcohol use².

Smoking, among these risk factors, is the main isolate factor, responsible for more than seven million annual deaths in the world³ and is a risk factor for all the main NCD⁴. In Brazil, it causes more than one million medical events/year, among them, 63 thousand cases of cancer and 156 thousand annual deaths⁵. Smoking is also a heavy economic toll to health, reaching nearly 1% of the Gross Domestic Product (GDP)⁵.

Smoking is the most attributable risk factor to cancer, responsible for at least 30% of all the deaths by cancer and nearly 90% of the deaths by lung cancer⁶. It also affects negatively the efficacy of the treatments for malignant neoplasms⁷.

The advances of the Tobacco Control Policies in Brazil are undeniable and considered as a global reference to reduce the number of smokers and the tobacco-related morbimortality⁸, however, smoking is still an important cause of disease and death in our population.

In this scenario, it is important to discuss the forms tobacco is disseminated and indicate how healthcare professionals can contribute for the Tobacco Control Policies.

DEVELOPMENT

SMOKING TRANSMISSION

Similar to the infectious diseases, the NCD can also be transmitted: instead of directly or through biologic vectors, the corporations disseminate it.

Great corporations can deliberately create avoidable diseases and deaths through commercial practices, strategies to block restrictive legislation and actions to weaken the Public Health Policies, mislead science and spread untruths^{9,10}. Based in this reflection, the authors used the term “Corporate Pathology” to demonstrate that diseases and changes corporations provoke in the individual or collective health and smoking are one of its best examples as shown in Figure 1 .

The literature demonstrates that the Tobacco Industry (TI) is the vector of smoking and consequently of the tobacco-related diseases¹¹. The transmission occurs mainly through practices and strategies TI uses to lure new users, especially children and adolescents¹².

Scientific evidences indicate that marketing activities have been a crucial factor to capture new smokers and to delay or block smoke quitting and increase the use of tobacco products¹³. Usually, these strategies are targeted to the adolescents aspirations and encompass all the aspects of the product, including the type of cigarette package¹⁴.

Another TI strategy is the engineering of the products, either using additives in the composition or changes in the physical aspects of the product manufacturing or in other components to facilitate the initiation of smoking and potentialize nicotine effects¹⁵⁻¹⁷. The examples are

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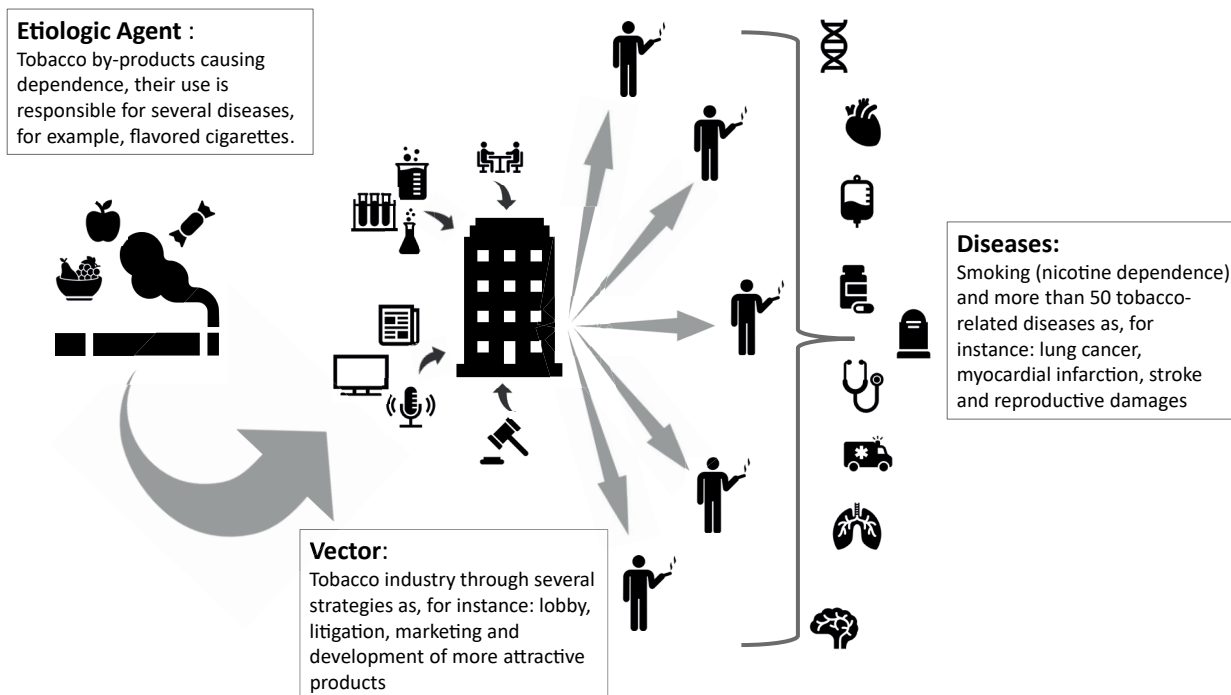


Figure 1. Corporate Pathology of Smoking

hookah with several flavors to please diversified personal preferences and cigarette filters with capsules releasing specific flavors upon pressure.

Currently, the TI has been investing in the development of the so called electronic smoking devices (ESD) that are being announced as less harming alternative to the smokers' health, but that potentially may revert the Tobacco Control Policies¹⁸, for its great popularity among adolescents, with high rate of experimentation among youths, further to being a risk factor for the use of conventional cigarettes^{19,20}.

In relation to the TI resistance in adopting health policies, it must be mentioned the strategies to block the prohibition of flavoring additives in tobacco products, where the lobby, science perversion, and misinformation were widely used²¹.

In view of this list of strategies, it is possible to conclude that the analogy of the TI with the pathological process of a communicable disease by a biologic vector is appropriate because the strategies of dissemination into the environment (political, social, economic), the "mutability" of the etiologic agent (in case, tobacco products in its several forms) and the strategies to fight the defenses of the host (the Tobacco Control Policies).

As a corporate strategy used worldwide, smoking has been demanding attention and investments from the governments that attempt to restrain the capacity of transmission and reduce the economic, social and health effects.

RECOMMENDATIONS

The TI continues to use strategies to disseminate smoking and ensure its profitability at the expense of public health. Healthcare professionals need to be aware of this market dynamics and consider this information in their professional practice. Therefore, it is recommended to healthcare professionals:

- Face smoking and tobacco-related diseases as communicable pathology recognizing TI as its vector.
- Consider TI strategies in the planning and implementation of cancer prevention actions and treatment.
- Do not participate in research funded directly or indirectly by TI considering the history of this sector in relation to the science perversion (many journals do not accept TI or TI associated groups funded papers).
- Avoid reproducing TI speeches and postures without conducting studies or discuss with the researchers in this field.
- Do not recommend conventional or electronic tobacco products to patients, even if they have claims of reduced risk or supposed support for the treatment of smoking, because there is no proof of these claims, it must be remembered that these products are prohibited by Brazilian legislation and have the potential to cause damage and to reverse Tobacco Control Policies.
- Even in patients with already established malignancies, indicate the smoking cessation as part of the treatment,

because tobacco components affect the effectiveness of available therapies for this disease type.

- Participate actively of the Tobacco Control Policies, especially of the legislative and regulatory processes directly or indirectly through unions or class organs.

CONCLUSION

Based on these recommendations, it is believed that health professionals can, in the short term, improve the prevalence of malignant neoplasms indicators in Brazil when cooperatively face the IT strategies to spread smoking.

These professionals could use the recommendations to dispute other sectors, which use TI similar strategies, such as, for example, manufacturers of sugary drinks, ultra-processed foods, and alcoholic beverages, responsible for other corporate pathologies.

CONTRIBUTIONS

André Luiz Oliveira da Silva contributed substantially for the conception and/or planning of the study; gathering, analysis and/or interpretation of the data, wording and/or critical review. Felipe Lacerda Mendes, Cristina de Abreu Perez and Josino Costa Moreira contributed in gathering, analysis and/or interpretation of the data, wording and/or critical review. All the authors approved the final version to be published.

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DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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REFERENCES

1. World Health Organization [Internet]. Geneva: WHO; c2020. Health statistics and information systems: global health estimates; [2005] [cited 2020 Feb 12]. Available from: http://www.who.int/healthinfo/global_burden_disease/en
2. Wagner KH, Brath H. A global view on the development of non-communicable diseases. *Prev Med.* 2012;54(Suppl):S38-41. doi: <https://doi.org/10.1016/j.ypmed.2011.11.012>
3. World Health Organization. Global status report on noncommunicable diseases 2014: “attaining the nine global noncommunicable diseases targets; a shared responsibility” [Internet]. Geneva: WHO; 2014 [cited 2020 Feb 12]. Available from: <http://www.who.int/nmh/publications/ncd-status-report-2014/en>
4. Department of Health and Human Services (US). The health consequences of smoking: 50 years of progress. A report of the surgeon general [Internet]. Atlanta (GA): Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014 [cited 2016 May 16]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK179276/pdf/Bookshelf_NBK179276.pdf
5. Marcia P, Bardach A, Palacios A, et al. Carga de doença atribuível ao uso do tabaco no brasil e potencial impacto do aumento de preços por meio de impostos [Internet]. Buenos Aires: Instituto de Efectividad Clínica y Sanitaria; 2017 Maio [acesso 2016 maio 16]. (Documento técnico IECS; no. 21). Available from: <https://www.inca.gov.br/sites/ufu.sti.inca.local/files//media/document//carga-doenca-atribuivel-uso-tabaco-brasil.pdf>
6. Peto R, Lopez AD, Boreham J, et al. Mortality from tobacco in developed countries: indirect estimation from national vital statistics. *Lancet.* 1992;339(8804):1268-78. doi: [https://doi.org/10.1016/0140-6736\(92\)91600-D](https://doi.org/10.1016/0140-6736(92)91600-D)
7. Petros WP, Younis IR, Ford JN, et al. Effects of tobacco smoking and nicotine on cancer treatment. *Pharmacotherapy.* 2012;32(10):920-31. doi: <https://doi.org/10.1002/j.1875-9114.2012.01117>
8. Portes LH, Machado CV, Turci SRB, et al. A política de controle do tabaco no Brasil: um balanço de 30 anos. *Ciência & Saúde Coletiva.* 2018;23(6):1837-48. doi: <http://dx.doi.org/10.1590/1413-81232018236.05202018>
9. Reeve B, Gostin LO. “Big” food, tobacco, and alcohol: reducing industry influence on noncommunicable disease prevention laws and policies comment on “addressing NCDs: challenges from industry market promotion and interferences”. *Int J Health Policy Manag.* 2019;8(7):450-4. doi: <https://doi.org/10.15171/ijhpm.2019.30>
10. Granheim SI, Engelhardt K, Rundall P, et al. Interference in public health policy: examples of how the baby food

- industry uses tobacco industry tactics. *World Nutr.* 2017;8(2):288-310. doi: <https://doi.org/10.26596/wn.201782288-310>
11. Lee S, Ling PM, Glantz SA. The vector of the tobacco epidemic: tobacco industry practices in low and middle-income countries. *Cancer Causes Control.* 2012;23(Suppl 1):117-29. doi: <https://doi.org/10.1007/s10552-012-9914-0>
 12. Loddenkemper R, Kreuter M, editors. *The tobacco epidemic.* 2nd ed. Basileia; Nova York: Karger; 2015. (Progress in Respiratory Research; Vol. 42).
 13. Lovato C, Watts A, Stead LF. Impact of tobacco advertising and promotion on increasing adolescent smoking behaviours. *Cochrane Database Syst Rev.* 2011;10:CD003439. doi: <https://doi.org/10.1002/14651858.CD003439.pub2>
 14. Lempert LK, Glantz S. Packaging colour research by tobacco companies: the pack as a product characteristic. *Tob Control.* 2017;26(3):307-15. doi: <https://doi.org/10.1136/tobaccocontrol-2015-052656>
 15. Hoffmann D, Hoffmann I. The changing cigarette, 1950-1995. *J Toxicol Environ Health A.* 1997;50(4):307-64. doi: <https://doi.org/10.1080/009841097160393>
 16. Hammond D, Collishaw NE, Callard C. Secret science: tobacco industry research on smoking behaviour and cigarette toxicity. *Lancet.* 2006;367(9512):781-7. doi: [https://doi.org/10.1016/S0140-6736\(06\)68077-X](https://doi.org/10.1016/S0140-6736(06)68077-X)
 17. Kostygina G, Glantz SA, Ling PM. Tobacco industry use of flavours to recruit new users of little cigars and cigarillos. *Tob Control.* 2016;25(1):66-74. doi: <https://doi.org/10.1136/tobaccocontrol-2014-051830>
 18. Bialous SA, Glantz SA. Heated tobacco products: another tobacco industry global strategy to slow progress in tobacco control. *Tob Control.* 2018;27(Suppl 1):s111-s117. doi: <https://doi.org/10.1136/tobaccocontrol-2018-054340>
 19. Grana R, Benowitz N, Glantz SA. E-cigarettes: a scientific review. *Circulation.* 2014;129(19):1972-86. doi: <https://doi.org/10.1161/CIRCULATIONAHA.114.007667>
 20. Soneji S, Barrington-Trimis JL, Wills TA, et al. Association between initial use of e-Cigarettes and subsequent cigarette smoking among adolescents and young adults: a systematic review and meta-analysis. *JAMA Pediatr.* 2017;171(8):788-97. doi: <https://doi.org/10.1001/jamapediatrics.2017.1488>
 21. Silva ALO, Bialous SA, Albertassi PGD, et al. The taste of smoke: tobacco industry strategies to prevent the prohibition of additives in tobacco products in Brazil. *Tob Control.* 2019;28(e2):e92-101. doi: <http://dx.doi.org/10.1136/tobaccocontrol-2018-054892>

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