DOI: 10.1590/1413-81232023288.07082023EN

Situational analysis of the smoking cessation program in a Brazilian capital during the COVID-19 pandemic

Kalina Cícera Macedo (https://orcid.org/0000-0002-8976-0676) [1]
João Euclides Fernandes Braga (https://orcid.org/0000-0002-9242-5326) [1]
Thais Teles de Souza (https://orcid.org/0000-0002-4672-9249) [1]
Vinicius Soares Ribeiro (https://orcid.org/0000-0003-0715-0557) [2]
Walleri Christini Torelli Reis (https://orcid.org/0000-0001-6911-4792) [1]

Abstract *Smoking is a public health problem associated with high morbimortality. Smoking cessation services, although effective, have limited reach and have been compromised by the pandemic. This study aimed to analyze the care for smokers in João Pessoa (PB), Brazil, during the COVID-19 pandemic. A descriptive, exploratory, and quantitative study was conducted in two phases: a survey of health indicators and an evaluation of sociodemographic profiles of professionals and service clients during the study years. Seven professionals, smoking group coordinators, and 20 clients participated in the research. The results showed low program coverage, with a declining number of smokers treated during the pandemic, down from 419 in 2019 to 129 in 2020. Interviews identified the program's positive aspects and limitations, good effectiveness, and low access, especially in primary health care. Tobacco consumption and risk reduction strategies during the COVID-19 pandemic originated from services and professionals involved. We can conclude that the National Tobacco Control Program has an incipient implementation in primary health care in this region and that the number of services offered was reduced during the pandemic, decreasing demand and actions.*

Key words *Tobacco use cessation, Chronic diseases, Primary health care COVID-19*

[1] Universidade Federal da Paraíba. Campus I, Lot. Cidade Universitária. 58051-900 João Pessoa PB Brasil. kalinaenf@gmail.com
[2] Universidade Federal do Paraná. Curitiba PR Brasil.

Introduction

Once considered a "life habit", today recognized as a chronic disease, smoking is the main cause of preventable mortality in Brazil and the world[1]. More than one billion smokers are estimated in the world, 80% of whom live in 24 countries, with two-thirds in low- and middle-income countries with a high burden of tobacco-related diseases and deaths. Current smokers are estimated to consume about 6 trillion cigarettes per year. In Brazil, the total percentage of smokers aged 18 years or over is 9.8%, with 12.3% among men and 7.7% among women[2,3].

According to pre-established public policies, the Unified Health System (SUS) offers free treatment for smokers in PHC Units through the National Tobacco Control Program (PNCT). This process includes multidisciplinary monitoring and relies on medication: nicotine replacement therapy (patches, lozenges, and chewing gum) and bupropion[4]. The Ministry of Health believes that Primary Health Care (PHC) holds a privileged and strategic position for tobacco control in the SUS and several other chronic health conditions, resulting from its four essential attributes: access, comprehensiveness, longitudinality, and care coordination[5].

There is evidence that the support offered to smokers for smoking cessation by Brazilian health services is still deficient, despite the high percentage of smokers who want or attempt to quit smoking. In a 2013 National Health Survey of smokers aged 18 and older who were interviewed, 51.1% said they had tried to quit in the previous 12 months. However, only 8.8% of the smokers claimed they had sought treatment from a health professional to quit smoking[6]. In response to this issue, access to smoking cessation treatment in Brazil has expanded in recent years, including PHC teams. However, during the COVID-19 pandemic, due to restrictions and social distancing recommendations, access to health services, including the smoking cessation program[7], was reduced for the entire population.

In João Pessoa (PB), the municipality has some services for those who want to start or continue treatment against smoking. However, we observe some limitations in expanding care for smokers in the PHC. This type of follow-up and treatment has been taking place at specific points in the Specialized Care network, and there seems to be little offer in PHC, which leads to thinking and reflecting on access to the program, especially during the pandemic.

Given this setting, the results of the smoking program and the management of its limitations depend on the involvement of all social, governmental, and non-governmental sectors since smoking is a disease whose control does not depend primarily on the existence of vaccines, antibiotics, chemotherapy, but effective public policies for their management[8].

Smoking and COVID-19 are severe health risks, and sharing any tobacco product is a way of transmitting the virus. Thus, it is important to relate and verify how the smoking cessation program has acted before these two related diseases in João Pessoa.

The present study aimed to evaluate the functioning of the tobacco control program in João Pessoa, Paraíba, during the COVID-19 pandemic.

Methodological path

This quantitative, descriptive, exploratory study was conducted through a bibliographic survey of health indicators collected from the Municipal Coordination of the Program in João Pessoa (PB) and through semi-structured questionnaires to professionals and clients of the services with a Smoking Cessation Program in 2019, 2020, and 2021, to analyze how the program operated before and after the pandemic. We applied the following eligibility criterion for applying semi-structured questionnaires: operating activities in 2019, 2020, and 2021 in João Pessoa (PB).

Initially, we analyzed the follow-up spreadsheets from the municipal indicators of the Smoking Cessation Program provided by the PMCT coordination office, and these data were considered bibliographic since the National Program has no specific information system. Such spreadsheets allowed identifying the services of municipal health that developed the smoking cessation program and its operation.

The semi-structured questionnaires prepared in the Google Forms digital tool were sent to the seven professionals from the services selected by the follow-up spreadsheets. Four were part of specialized care units, two worked at integrated alcohol psychosocial care centers and other drugs (CAPS AD), one state and another Municipal, and the seventh was part of an outpatient pneumology service, and twenty clients of these services were also included.

Data from health professionals and clients were obtained in two polyclinics, given the reg-

ularity and establishment of remote groups. We only considered data from health professionals in the third polyclinic, as this service did not adhere to remote groups in 2020 and 2021. The two CAPS directed to alcohol and other drugs worked with the program during the pandemic.

The outpatient hospital service did not participate in the research because it does not have group care. The service has individualized care and distribution of supplies, which was also barely operating in 2020 and 2021. Due to the lack of regular operation, the family health units (USF) and the other municipal polyclinic did not enter the research.

The semi-structured questionnaires were applied to professionals and clients who stayed in the smoking cessation program during the COVID-19 pandemic. The questionnaires were divided into two sections. The first collected sociodemographic data, and the second collected information on access to the service, smoking relapse, the profile of medications used, and access to pharmacological therapy during the COVID-19 pandemic.

Data obtained from applying semi-structured questionnaires to professionals and clients of the service were analyzed descriptively to obtain the program's process indicators and effectiveness. The information collected from the professionals and clients and the data analyzed in the program's follow-up spreadsheets were grouped into a database and tested for normal distribution by the Kolmogorov-Smirnov test before selecting statistical tests. The variables with normal distribution will be described using mean, standard deviation (SD), and 95% confidence interval (95% CI). The median and interquartile range will be used to describe the results of variables with non-normal distribution.

The research complied with the criteria established in Resolutions n° 466/2012 and 510/2016 of the National Health Council that regulates human research. The project was submitted to the Research Ethics Committee of the Health Sciences Center (CEP/CCS), with the consent from the Municipal Health Secretariat of João Pessoa (PB) for the study, and was approved under Opinion n° 5.050.186.

Results

The health network of the municipality under study has 203 teams in PHC, distributed in 97 Family Health Units (USF), a specialized care network with six polyclinics in the urban perimeter, a Psychosocial Care Network (RAPS), with a Mental Health Emergency Care Unit (PASM), and four Psychosocial Care Centers (CAPS).

As 2019 was the onset of the pandemic, it was taken as a starting point for data analysis to view the impact on the program's continuity. During this period, we observed that ten health services were registered in the program, and three of these composed the PHC, four were Specialized Care components, two were characterized as CAPS directed to alcohol and other drugs and a hospital outpatient service. Upon evaluating data on service continuity during the pandemic, we identified the discontinuity of PNCT service in most services.

Observing the number of people who sought smoking cessation treatment in João Pessoa by gender and age group, the data pointed out that 409 individuals sought this treatment in 2019 before the COVID-19 pandemic. Two hundred twenty-six patients (50.2%) were female; 285 (63.3%) were in the 18-60 years age group, and 103 (25.18%) were over 60. In 2020, the pandemic onset, we observed that only 129 clients were served by the smoking cessation service. Sixty-seven (52%) were female, and 91 (70%) were in the 18-60 age group. This declining trend persisted in 2021, with care provided to 137 patients, with persisting group care restrictions in the face-to-face model. A higher female demand (77, 56.2%) persisted this year, and adults in the 18-60 age group had the highest demand, totaling 95 patients (69.34%) (Table 1).

As for the program's scope, we identified that the number of care sessions dropped from 501 clients treated in 2019 to 104 in 2020. Considering the number of patients who stopped smoking, we can see that the percentage of abstinence was similar in the years under study. The highest percentage, 27% (n = 37), was recorded in 2021, and the lowest, 21.71% (n = 109) in 2019, as shown in Table 2.

Regarding the information provided by health professionals and PMCT clients, seven health professionals and twenty clients responded to the survey. In the analysis of the sociodemographic aspects of professionals, the mean age was 56 years (SD = 10.24), all were female, and 70% (n = 5) reported being Catholic. We observed a predominance of psychology education (n = 4), and the mean professional work seniority was 25 years (SD ± 7.67).

The mean age of clients who responded to the research was 53 years (SD ± 13.37), and 65% (n =

13) were female. Regarding schooling level, most reported having high school and higher education (45% and 25%, respectively). Most reported being single (60%) and were Catholic (70%).

Regarding the operation of services during the COVID-19 pandemic, 75% (n = 15) of research respondents reported that they did not have access to remote group meetings during the pandemic period, 15% (n=3) reported there were sometimes meetings, and 10% (n = 2) of the respondents answered they had regular remote meetings.

In an analysis of the last five years, compared to the number of patients treated and the number of patients who have stopped smoking, seeking to understand the PMCT effectiveness, we observed a declining number of clients, down from 501 in 2019 to 104 in 2020, which one might think that one of the reasons for the fall may have been the COVID-19 pandemic. Looking at the number of patients who stopped smoking, we realized that the percentage of abstinence is relatively similar in the years under study, with the largest percentage (30%) in 2017 (data not shown in this paper) and the lowest (21.71%) in 2019.

Furthermore, 30% (n = 6) of PMCT clients in João Pessoa reported resuming smoking, another 30% (n = 6) reported that they often felt the desire to smoke again, 15% expressed that they rarely felt the desire to smoke again, and last 25% reported never feeling the desire to smoke again during the pandemic.

Regarding the drugs used, the nicotine replacement therapy (NRT) via transdermal patch, associated or not with chewing gum and lozenge formulations, was used by 40% (n = 8) of clients, followed by oral bupropion associated with NRT, observed in 25% (n = 5) of clients, and 10% of these clients used only bupropion lozenges for smoking treatment and 25% did not use pharmacological therapy associated with the program's behavioral approach (Table 3). Regarding the access of patients who used drugs, 55% of research respondents reported regularly receiving the proposed treatment. In contrast, 45% of patients said they did not have access to drugs.

Discussion

The declining number of smokers who sought smoking cessation help in the public network of João Pessoa is notorious, down from 501 in 2019 to 104 people in 2020. These data follow the same projection of the Northeast, where 35,397 people sought treatment in 2019, reduced to 14,038 people[9] in 2020.

The estimated percentage of smokers in the Brazilian Northeast was 14.2% in 2013, dropping to 10.8% in 2019, in a population of almost 60 million inhabitants[9]. We can observe, according to data from the program indicators in João Pessoa (PB), considering the city's population in 2013, which was 780,738 inhabitants and an estimate of 809 thousand inhabitants for 2019, that we have an estimated percentage of smokers of 1.3% in 2013 and 1.35% in 2019, which means a population of approximately 10,000 smokers among the capital's population. Thus, we can see

Table 2. Number of clients assisted and number of clients who quit smoking in the last five years in the Municipal Tobacco Control Program in João Pessoa (PB).

Year	Number of clients attended	Number of clients who stopped smoking	%
2019	501	109	21.71%
2020	104	26	25%
2021	137	37	27%

Source: Database of the Municipal Tobacco Control Program of João Pessoa (PB).

Table 1. Number of people who sought smoking cessation treatment in João Pessoa by gender and age group.

Period	People who sought treatment N	Gender		Age group		
		M N (%)	F N (%)	< 18 N (%)	< 60 N (%)	>= 60 N (%)
2019	409	188 (45.97%)	226 (55.26%)	10 (2.44%)	285 (69.68%)	103 (25.18%)
2020	129	62 (48.34%)	67 (51.94%)	0	91 (70.54%)	48 (37.21%)
2021	137	58 (42.34%)	77 (56.2%)	1 (0.73%)	95 (69.34%)	49 (35.77%)

Source: Database of the Municipal Tobacco Control Program of João Pessoa (PB).

that the PMCT covers about 1% of the smoking population, indicating poor demographic distribution and insufficient access.

We identified a decline in people seeking the program in 2020 when the COVID-19 pandemic began in Brazil in March. This factor certainly affected the program's demand, entailing a drop of 68.46% of clients who sought the program against the previous year, justified by social distancing recommendations. The COVID-19 pandemic was an event that mobilized resources and political will for its confrontation across the planet. However, we should also point out that smoking is an old, chronic, protracted societal epidemic with high morbimortality[10].

The current condition of fewer smokers seeking smoking cessation help in the public network from 2019 to 2020 is a national reflection. According to INCA's data, 210,941 people sought help in 2019, with a significant decline in the number of people serviced (74,348 smokers) in 2020.

Female people sought the smoking cessation program more in the three years under study. This data was also observed among survey clients, with 65% females and 35% males. The same situation was observed throughout the country in the set of patients who sought smoking cessation treatment in the SUS, where, from 2018 to 2020, the percentage of women was higher than men. In 2019, we had 58% of women and 42% of men, and 55% of women and 45% of men[9] sought the treatment in 2020. Studies show that males had the highest percentage in the number of smokers. However, females prevailed in seeking treatment in João Pessoa (PB) in the last three years, which we can relate to the difficulties of men in seeking health services[11].

Table 3. Use of tobacco control drugs by clients of the Municipal Tobacco Control Program in João Pessoa (PB).

PNCT MEDICATION	Number of clients (%)
Transdermal nicotine patches	8 (40%)
Nicotine chewing gum	0
Nicotine lozenges	0
Bupropion tablets	2 (10%)
Association of patches or gum or lozenge with Bupropion tablet	5 (25%)
No use of medication	5 (25%)

Source: Database of questionnaires applied to PMCT clients.

An analysis of data from 2019 to 2021 with the numbers of people served and those who stopped smoking evidenced a smoking cessation rate of 26%, obtaining an effectiveness rate incompatible with national program rates. However, we should underscore the considerable drop in appointments during the pandemic, hampering access to the smoking cessation program.

A study conducted in Belo Horizonte and its Metropolitan Region that analyzed the smoking cessation rate and the profile of former smokers showed a general smoking cessation rate of 56.7%[11]. Another study that aimed to assess the effectiveness of a tobacco control program in a city in southern Brazil analyzed data from 106 clients, most of whom were women. The program's effectiveness was 51.9%, with a mean smoking cessation time of approximately three weeks[12].

Smoking cessation treatment has been referred to as the "gold standard" of cost-effectiveness in health care, considering that the cost of implementing the tobacco control program, including professional training devices and the acquisition of medications, is much less expensive than the treatment of other cardiovascular risk factors or the treatment of tobacco-related diseases[13].

When observing the operation of the tobacco control program services in João Pessoa, the program's indicators and the semi-structured interviews with professionals and clients clearly show that the municipal polyclinics, which are leaders concerning operating time and constant offer, have a better-structured service that can serve as a model for projecting PHC.

We note that the PHC services do not effectively participate in the program, which is implemented in only three – less than 1% (0.14%) – of the 203 USF units during the study years, which certainly hinders the smokers' access and the opportunity to quit smoking to prevent several health problems.

A different situation was observed in João Pessoa, recommended at the national level, where the Unified Health System (SUS) has offered smoking treatment at all three care levels (basic, medium, and high complexity) since 2001, and according to data from INCA, smokers' main gateway for the treatment is PHC units, which concentrated 87% of the appointments in 2019, followed by Specialized Care establishments, with 10%, and Psychosocial Care Centers (CAPS) with 3%[14].

We observed that the services adapted their operations during the pandemic, and some

discontinued them. We understand that the smoking treatment involves therapies associated with other methodologies under a group dynamics logic. In the pandemic, especially in 2020, when face-to-face groups were suspended, many services sought follow-up alternatives such as virtual groups.

We observed that 75% of the survey respondents reported that they did not have access to virtual group meetings during the pandemic, which expresses the difficulty of adapting to monitoring and the difficulty of individuals involved in the service in adapting to Information and Communication Technologies (ICTs), and the drop in service sessions and declining program effectiveness.

Among the study clients, the pandemic interfered with the desire to quit smoking, 30% of the clients resumed smoking, and another 30% felt the desire to smoke again. The state of mind may be an important factor in the tobacco consumption increase. Studies describe the relationship between tobacco use and negative affectivity, anguish, or sensitivity to anxiety among individuals in stressful situations. Neurophysiology believes there is evidence of nicotine action on the central nervous system, altering the state of mind by acting as stress, anguish, and sadness relief[15].

Although there are no data on smoking and its relapse concerning epidemics, studies indicate that smokers exposed to natural disasters smoke more than non-exposed smokers and affect the relapse of former smokers. The most influencing stressors were mental distress, less social support, and greater social and economic vulnerability[16,17].

Malta et al. (2021) report that deteriorated mental health, sleep quality, self-assessed health status, and lack of income are factors associated with increased cigarette consumption during the COVID-19 pandemic. There is an evident concern between tobacco use and COVID-19, and the WHO considers smoking as a great potential for COVID-19 spread and draws attention to another major problem is that of users of hookah or other collective devices contaminated by COVID-19 when sharing the same mouthpiece to inhale smoke, thus transmitting the virus[18,19].

As for drug support in the Municipal Program, the transdermal patch was the most used among the offered supplies and drugs, totaling 40% of the clients participating in the study, followed by the association of patches with Bupropion pills. Most clients reported having access to the proposed treatment. The use of drugs in smoking treatment has shifted from supporting cognitive-behavioral therapy to a central role in the approach of most patients. It also highlights that, except for contraindications, drugs should be used with all patients attempting to quit smoking[13].

Some studies have shown that medications can double or even triple the outcome of smoking cessation treatment. Thus, clients consider drug therapy as the most effective therapeutic measure, which highlights the importance of pharmaceutical care and pharmacotherapeutic follow-up in the care process of these patients[13,20].

Regarding the analysis of operations performed before and after the pandemic, the questionnaires given to clients and professionals showed that 75% (n = 15) of the clients participated in group meetings before the pandemic on a weekly or biweekly basis, and only 25% (n = 5) responded that they did so remotely after the pandemic. The seven professionals who responded to the survey affirmed there was face-to-face care before the pandemic in groups of four professionals, and there were no remote groups after the pandemic, according to the information provided by three of these professionals.

Concerned about the pandemic setting and social distancing measures, INCA offered the training of around 5,400 health professionals to treat smokers, strengthening the PHC and the Psychosocial Care and Specialized Care centers and developing various materials to support the population. Smokers and health teams were encouraged to provide remote care using ICTs, such as WhatsApp, Zoom, Skype, and other telecare applications[3].

Amid this entire pandemic and social distancing setting, it became timely to strengthen health education actions through the Internet and telephone counseling, which became relevant and complementary strategies to all regulatory measures established in the world and in Brazil, where it was necessary to change habits of social interaction for clients and professionals and to adapt ways of handling care for smokers.

Final considerations

The study provided us with an opportunity to analyze the situation of the services in João Pessoa (PB), Brazil, in the care of smokers during the COVID-19 pandemic and its indicators. Interviews with health professionals and program clients identified its strengths and program limitations and pointed to good effectiveness; however, with low access, especially in PHC,

besides perceiving that the tobacco consumption and risk containment strategies during the COVID-19 pandemic originated from the services and professionals involved.

The situational analysis allowed us to identify the limited SUS smoking treatment offered in João Pessoa as a central issue. Its implementation is incipient in PHC. The number of people who sought the program declined during the pandemic, and smokers desired to resume smoking, which may have been affected by social distancing or situations of fear and anxiety experienced.

The use of drugs combined with the therapies proposed in the PNCT in João Pessoa brought good results among program clients, despite their low access. Regarding analyzing strategies used by the Municipality to contain tobacco consumption and its risks during the COVID-19 pandemic, we noticed that only two services invested in remote groups.

Therefore, it is crucial to invest in order to increase the smoking cessation treatment coverage, especially in the PHC in João Pessoa, with effective measures to prevent young people from starting to smoke, besides promoting national strategies for coping with COVID-19, including measures to reduce the number of smokers in the capital further.

Collaborations

KC Macedo elaborated her master's dissertation with the Graduate Program in Collective Health PPGSC/UFPB. She participated in the idea's conception while working in the Municipal Health Network of João Pessoa (PB). She collected data and performed statistical analyses, and drafted the article. JEF Braga supported the definition of the data analysis methodology and drafted the article. VS Ribeiro participated in data analysis and drafting of the article. TT Souza supported the definition of the data collection instrument, the work methodology, the data analysis, and the article's drafting. WCT Reis work advisor. She guided the idea's conception, methodological development, and implementation. She critically analyzed the data obtained, the statistical analyses, and the text's drafting.

References

1. World Health Organization (WHO). WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies [Internet]. 2017. [cited 2022 ago 3]. Available from: https://apps.who.int/iris/handle/10665/255874
2. Instituto Nacional de Câncer (INCA). Dados e números da prevalência do tabagismo. *Adolescencia Saúde* 2021; 14:47-57.
3. Brasil. Ministério da Saúde (MS). Secretaria de Vigilância em Saúde. Departamento de Análise em Saúde e Vigilância de Doenças Não Transmissíveis. *Vigitel Brasil 2019: vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico*. Brasília: MS; 2020.
4. Instituto Nacional de Câncer (INCA). Programa Nacional de Controle do Tabagismo [Internet]. [acessado 2022 ago 3]. Disponível: https://www.gov.br/inca/pt-br/assuntos/gestor-e-profissional-de-saude/programa-nacional-de-controle-do-tabagismo
5. Brasil. Ministério da Saúde (MS). Secretária de Atenção Primária à Saúde. Departamento de Saúde da Família. *Manual do instrumento de avaliação da atenção primária à saúde: PCATool-Brasil*. Brasília: MS; 2020.
6. Instituto Brasileiro de Geografia e Estatística (IBGE). *Pesquisa Nacional de Saúde 2013: percepção do estado de saúde, estilo de vida e doenças crônicas*. Rio de Janeiro: IBGE; 2014.
7. Brasil. Ministério da Saúde (MS). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. *Estratégias para o cuidado da pessoa com doença crônica: o cuidado da pessoa tabagista*. Brasília: MS; 2015.
8. Cavalcante TM. O controle do tabagismo no Brasil: avanços e desafios. *Arch Clin Psychiatry* 2005; 32(5):283-300.
9. Instituto Nacional de Câncer (INCA). Prevalência do tabagismo [Internet]. 2022. [acessado 2023 abr 27]. Disponível em: https://www.gov.br/inca/pt-br/assuntos/gestor-e-profissional-de-saude/observatorio-da-politica-nacional-de-controle-do-tabaco/dados-e-numeros-do-tabagismo/prevalencia-do-tabagismo
10. Cavalcante TM, Lacerda Mendes F, De Abreu Perez C, Ribeiro de Carvalho AO, Leal Teixeira AP, Rodrigues Viegas JR. Como a Política Nacional de Controle do Tabaco pode ajudar no enfrentamento da pandemia da COVID-19? *Rev Bras Cancerol* 2020; 66 (TemaAtual):e-1023.
11. Claudino LMO, Abreu MNS. Analysis of smoke cessation rate and profile of former smokers living in Belo Horizonte and Metropolitan Region. *Einstein (São Paulo)* 2014; 12(1):90-95
12. Kock KS, Arantes MWB, Santos CC, Castelini SS. Efetividade do programa de controle ao tabagismo em uma cidade do sul do Brasil. *Rev Bras Med Famlia e Comunidade* 2018; 12(39):1-10.
13. Instituto Nacional de Câncer (INCA). Protocolo Clínico e Diretrizes Terapêuticas do Tabagismo [Internet]. 2020. [acessado 2023 abr 27]. Disponível em: https://www.inca.gov.br/publicacoes/relatorios/protocolo-clinico-e-diretrizes-terapeuticas-do-tabagismo
14. Instituto Nacional de Câncer (INCA). Tabagismo e coronavírus [Internet]. 2022. [acessado 2023 abr 27]. Disponível em: https://www.gov.br/inca/pt-br/assuntos/gestor-e-profissional-de-saude/programa-nacional-de-controle-do-tabagismo/tabagismo-e-coronavirus
15. Sociedade Brasileira de Pneumologia e Tisiologia. Tabagismo. O tabaco, exercícios aeróbicos, corridas e o coração [Internet]. [acessado 2023 abr 27]. Disponível em: https://sbpt.org.br/portal/publico-geral/doencas/tabagismo-o-tabaco-exercicios-aerobicos-corridas-e-o-coracao/
16. Lanctot JQ. Efeitos dos desastres sobre o tabagismo e a recaída: um estudo exploratório das vítimas do furacão Katrina. *Am J Heal Educ* 2008; 39(2):91-94.
17. Alexander AC. Diferenças raciais na vulnerabilidade ao transtorno de estresse pós-traumático após o furacão Katrina entre uma amostra de adultos fumantes de cigarro de Nova Orleans. *Rev Disparidades Saude Raciais Etnicas* 2017; 4:94-103.
18. World health Organization (WHO). Protecting youth from industry manipulation and preventing them from tobacco and nicotine use [Internet]. 2020. [cited 2023 abr 27]. Available from: https://www.who.int/news-room/events/detail/2020/05/31/default-calendar/world-no-tobacco-day-2020-protecting-youth-from-industry-manipulation-and-preventing-them-from-tobacco-and-nicotine-use
19. Malta DC, Gomes CS, Souza Júnior PRB, Szwarcwald CL, Barros MBA, Machado IE, Romero DE, Lima MG, Silva AG, Prates EJS, Cardoso LSM, Damacena GM, Werneck, Silva DRP, Azevedo LO. Fatores associados ao aumento do consumo de cigarros durante a pandemia da COVID-19 na população brasileira. *Cad Saude Publica* 2021; 37(3):e00252220.
20. Brustolin M, Fettermann FA, Bittencourt RA, Ribeiro VB. Eficácia do tratamento do tabagismo na perspectiva da redução de danos e do cuidado farmacêutico. *Rev Eletronica Acervo Saude* 2019; 11(17):e1565.

Article submitted 26/10/2022
Approved 17/04/2023
Final version submitted 10/05/2023

Chief editors: Romeu Gomes, Antônio Augusto Moura da Silva