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## THE IMPACT OF THE PANDEMIC COVID-19 ON SMOKING CONTROL IN A PRIMARY HEALTH CARE UNIT

*o impacto da pandemia de covid-19 no controle do tabagismo em uma Unidade Básica de Saúde*  
*el impacto de la pandemia covid-19 en el control del tabaquismo en una Unidad Básica de Salud*

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### RESUMO

**OBJETIVO:** avaliar o impacto da interrupção do grupo de controle do tabagismo em 2020, durante a pandemia, sobre o processo de cessação de usuários de uma unidade básica de saúde do município do Rio de Janeiro. **Método:** estudo transversal descritivo com usuários cadastrados que participaram do grupo em 2019. Os dados foram coletados por meio de um questionário pré-estruturado. Realizou-se a tabulação e análise por meio do software Microsoft Excel, e apresentou-se os resultados por meio de tabelas. **Resultados:** dentre 110 usuários, 45 aceitaram participar. Observou-se que 44,4% tinham de 40 a 60 anos; 62,2% eram brancos; 42,2% com ensino médio completo; 51,1% relataram que a pandemia impactou negativamente em seu processo de cessação e 44,4% conseguiram cessar totalmente o tabagismo. **Conclusão:** é de suma importância a participação do enfermeiro no processo de cessação do tabagismo e que as equipes de saúde mantenham o acompanhamento desses usuários a longo prazo.

**DESCRIPTORIOS:** Tabagismo; Pandemias; Epidemiologia; Atenção primária à saúde.

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## ABSTRACT

**OBJECTIVE:** to evaluate the impact of the interruption of the tobacco control group in 2020, during the pandemic, on the cessation process of users of a primary health care unit in the city of Rio de Janeiro. **Method:** descriptive cross-sectional study with registered users who participated in the group in 2019. Data were collected using a pre-structured questionnaire. Tabulation and analysis were carried out using Microsoft Excel software, and the results were presented in tables. **Results:** from 110 users, 45 agreed to participate. It was observed that 44.4% were between 40 and 60 years old; 62.2% were white; 42.2% completed high school; 51.1% stated that the pandemic had a negative impact on their cessation process and 44.4% managed to completely stop smoking. **Conclusion:** it is extremely important for nurses to participate in the smoking cessation process and for health teams to monitor these users in the long term.

**DESCRIPTORS:** Tobacco use disorder; Pandemics; Epidemiology; Primary health care.

## RESUMEN

**OBJETIVO:** evaluar el impacto de la interrupción del grupo de control del tabaco en 2020, durante la pandemia, en el proceso de cesación de los usuarios de una unidad básica de salud de la ciudad de Río de Janeiro. **Método:** estudio descriptivo transversal con usuarios registrados que participaron del grupo en 2019. La recolección de datos se realizó mediante un cuestionario preestructurado. La tabulación y el análisis se realizaron utilizando el software Microsoft Excel y los resultados se presentaron en tablas. **Resultados:** de 110 usuarios, 45 aceptaron participar. Se observó que el 44,4% tenía entre 40 y 60 años; 62,2% eran blancos; 42,2% completó la secundaria; 51,1% afirmó que la pandemia tuvo un impacto negativo en su proceso de dejar de fumar y 44,4% logró dejar de fumar por completo. **Conclusión:** es de suma importancia que los enfermeros participen del proceso de cesación del tabaquismo y que los equipos de salud realicen un seguimiento de estos usuarios en el largo plazo.

**DESCRIPTORES:** Tabaquismo; Pandemias; Epidemiología; Atención primaria de salud.

## INTRODUCTION

The World Health Organization points out that tobacco causes more than 8 million deaths a year worldwide. More than 7 million of these deaths result from the direct use of this product, while around 1.2 million are the result of non-smokers being exposed to passive smoking. The WHO also states that around 80% of the world's more than one billion smokers live in low- and middle-income countries, where the burden of tobacco-related diseases and deaths is greatest.<sup>1</sup> Cigarettes arrived in Brazil at the beginning of the 20th century and tobacco use was recognized as a health risk factor from 1950 onwards, when it became clear that it was associated with lung cancer. From the 1990s onwards, partnerships were formed with state and municipal health departments, internalizing the measures of the National Tobacco Control Program into the Unified Health System (SUS), prioritizing environments such as schools, workplaces and health units.

Considered a historic milestone for public health worldwide, the WHO Framework Convention on Tobacco Control (FCTC), ratified by 181 countries, determined the adoption of measures in the areas of advertising and publicity, sponsorship, health

warnings, passive smoking, treatment of smokers, illegal trade, prices and taxes on tobacco industry products. The FCTC aims to “protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke”, as stated in Article 3 of the Convention.<sup>2</sup> Smoking is the main cause of respiratory diseases and is considered a serious public health problem.<sup>3</sup>

The COVID-19 pandemic has brought an additional risk for people with chronic diseases, as well as social behaviors that also become risk factors for developing complications from the viral infection. Given the collapse of public health during the COVID-19 pandemic and the low adherence to periodic monitoring of smokers in health units, especially because they are considered to be a risk group, there was a need to develop a study to assess the impact of the pandemic on the experiences of participants in the smokers' group in a basic health unit, in search of possible joint actions to mitigate the effects of the social distancing imposed by the pandemic.<sup>4</sup>

The objective was to evaluate the impact of the interruption of the smoking control group during the COVID-19 pandemic in 2020 on the cessation process of users of a basic health unit in the municipality of Rio de Janeiro.

## METHOD

This is a descriptive cross-sectional study with a quantitative approach. Cross-sectional studies assess the relationship between diseases and other variables of interest that characterize a defined population.<sup>5</sup> Combined exploratory-descriptive studies are studies that aim to fully describe a given phenomenon, and both quantitative and qualitative descriptions can be found.<sup>6</sup> This is a study aimed at identifying the consequences of the COVID-19 pandemic in 2020 on the smoking cessation process of users of a basic health unit located in the Tijuca neighborhood, in the municipality of Rio de Janeiro. In 2021, the unit had 9 teams, with approximately 31,513 registered users at the time of the study, while in 2019 it had 7 teams and a total of 27,904 registered users.

Considering the prevalence of active smoking in the population registered at the unit in 2019 and 2021, 19.1% in 2019 and 18.5% of users by March 2021 considered themselves active smokers.

The study participants were users registered at the basic health unit who took part in the smoking control group in 2019. They were identified through the group's attendance list, where they signed their name and date of participation in the meetings, and also through data from the e-SUS electronic medical record. The inclusion criteria were: being a registered user at the unit, having participated in the smoking control group in 2019 and being over 18 years old. The exclusion criteria were: not having taken part in the smoking control group in 2019, not being registered at the unit in 2021 or being under 18. The sampling technique used was non-probabilistic convenience sampling.

Considering a registered population of 27,904 people at the unit in 2019, where approximately 5,580 people considered themselves active smokers; with a prevalence of smoking close to 20% and tolerating a sampling error of 10%, a minimum sample size of 44 individuals was observed, i.e. 40% of the 110 participants in the smoking control group in 2019. We selected 110 participants from the 2019 smoking control group who remained registered in 2021; of these, 45 agreed to take part in the survey, which meets the minimum sample size of 44 people. Of the 110 users, 61 did not respond to the contact and 4 did not agree to take part.

The questionnaire was applied and completed by the researcher, respecting the ethical and legal aspects, in accordance with CNS/MS Resolution 466/2012. The participants were directed individually to the Xavier de Brito team's offices when they went to the unit, for individual consultations with the professional responsible for the smoking control group and to answer the survey. The questionnaire was administered between September and November 2021, with questions about the users' sociodemographic profile and their health habits before and during the COVID-19 pandemic.

The data was tabulated and analyzed using Microsoft Excel software, and the results were presented using tables and summary measures.

## RESULTS

Of the 45 participants, the majority were aged between 40 and 60 (44.4%, n=20); they considered themselves to be white (62.2%, n=28); cisgender (97.8%, n=44), with the majority being female (64.4%, n=29) and having completed high school (42.2%, n=19) (Table 1).

**Table 1** - Sociodemographic characteristics of participants in the Heitor Beltrão MHC smoking group (n=45). Rio de Janeiro, RJ, Brazil, 2021

Variable	n	%
<b>Age</b>		
18 to 25 years	3	6,8
26 to 40 years	7	15,5
40 to 60 years	20	44,4
Over 60 years old	15	33,3

Variable	n	%
<b>Race/color</b>		
Yellow	1	2,2
White	28	62,2
Brown	4	8,9
Black	12	26,7
<b>Gender Identity</b>		
Cisgender	44	97,8
Non-binary	1	2,2
<b>Gender</b>		
Female	29	64,4
Male	16	35,6
<b>Schooling</b>		
Incomplete primary education	1	2,2
High school incomplete	4	8,9
High school complete	19	42,2
Incomplete university degree	7	15,6
Complete university degree	14	31,1

Source: Research authors

When asked about aspects related to participation in the group and the development of health complications, the majority reported that they managed to finish the time estimated for fulfilling the mandatory group meetings in 2019 (51.1%, n=23), but despite this, the majority reported that they were unable to stop using tobacco after the group meetings, mainly due to the effects of the pandemic (55.6%, n=25).

Regarding the development of chronic non-communicable diseases due to the long period of smoking, the majority of participants reported not having any of the three comorbidities mentioned or not being aware of the diagnosis at the time of the survey (42.2%, n=19). With regard to the length of time they had been smoking, the majority reported having been or still being smokers for a period of between 10 and 30 years (46.6%, n=21) and having used some form of medication in the process of quitting (55.6%, n=25). Of the 25 who reported using medication, 56% used the patch.

With regard to the motivation for taking part in the group, the majority said that they were motivated by aspects related to their own health, both the complications caused by smoking and the need to seek quality of life (84.5%, n=38).

The majority of participants said that the group meetings had helped them in a positive way to reduce their smoking dependency (95.6%, n=43). When asked about aspects related to the COVID-19 pandemic, the majority reported that the pandemic had an impact on the cessation process (51.11%, n=23). Of these, 100% reported that the impact was negative (100%, n=23).

Of those who were unable to quit (n=25), when asked if they had at least managed to reduce the number of cigarettes they smoked per day, the majority said yes (60%, n=15) and, of those who were unable to reduce (40%, n=10), 70% reported that they had not managed to increase the number of cigarettes they smoked per day (n=7).

Regarding the return of group activities and/or individual care for those who remained smokers even after completing the group or those who have not yet completed it due to the interruption, the majority replied that they would agree to take part in the activities again (88%, n=22).

The smoking dependency test, called the Fagerstrom test, was only applied to those who had remained smokers at the time of the survey. With regard to the daily habits that characterize levels of dependence, the majority said that they

smoked their first cigarette of the day between 6-30 minutes after waking up (52%, n=13); that they did not find it difficult to stop smoking in places that are prohibited (80%, n=20); that the first cigarette of the morning is the most satisfying of the day (68%, n=17); that they smoke between 11-20 cigarettes a day (68%, n=17); that they smoke more often in the morning (68%, n=17); and that when they are ill they don't feel like smoking, especially when the symptoms are respiratory (92%, n=23) (Table 2).

**Table 2** - Fagerstrom test of users who participated in the group in 2019 and remained smokers in 2021 at the Heitor Beltrão MHC (n=25). Rio de Janeiro, RJ, Brazil, 2021

Variable	n	%
<b>Nowadays, how soon after waking up do you smoke your first cigarette?</b>		
Within 5 minutes (3)	3	12
6- 30 minutes (2)	13	52
31- 60 minutes (1)	7	28
After 60 minutes (0)	2	8
<b>Do you find it difficult to stop smoking in places where it is forbidden (e.g. church, cinema, libraries, etc.)?</b>		
Yes (1)	5	20
No (0)	20	80
<b>Which cigarette of the day brings you the most satisfaction?</b>		
The first one in the morning (1)	17	68
Other (0)	8	32
<b>How many cigarettes do you smoke a day?</b>		
Less than 10 (0)	5	20
From 11 to 20 (1)	17	68
21 to 30 (2)	3	12
<b>Do you smoke more often in the morning?</b>		
Yes (1)	17	68
No (0)	8	32

Variable	n	%
<b>Do you smoke when you are sick and have to stay in bed most of the time?</b>		
Yes (1)	2	8
No (0)	23	92

Source: Research authors

By analyzing the data from the control spreadsheets made available by the professional in charge of the group, at the General Primary Care Coordination of A.P 2.2, it was possible to make a comparison between the dependency levels of the participants in 2019 with the current ones, collected through the survey, in 2021. In 2019, the majority of participants had very low to medium levels of dependence (66.7%, n=30). In 2021, 44.4% reported that they had completely stopped using tobacco by the time of the survey (n=20).

## DISCUSSION

Several studies have been carried out in Brazil to analyze the profile of smokers, especially with regard to socioeconomic and behavioral data. The present study indicates a higher prevalence of users in the middle-aged age group, between 40 and 60 years old, white, cisgender and with completed high school education. The same study revealed that, despite the difficulties related to the routine and motivations to stop smoking, the majority of participants managed to complete the first 4 meetings and, of those who attended meetings continuously, the majority did in fact manage to stop using tobacco. Another important milestone in the results was that, although 55.6% of the participants said they had not managed to stop smoking, the majority reported that they had managed to reduce the number of cigarettes per day, which is a considerable step forward in the cessation process.

This study found that most of the group's participants were aged between 40 and 60, which differs from some studies carried out between 2018 and 2020, which found a higher prevalence of smoking in people over 60. A study carried out in Florianópolis in 2019 to assess the characteristics of smoking patients showed that the average age of the participants was 61.5 years, with most of them aged between 54 and 67.<sup>7</sup>

Regarding gender and their identities, the results show that most of the participants consider themselves cisgender, with the majority of them being female. Despite data from the Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey (VIGITEL)<sup>8</sup> revealing that from 2006 to 2020 the highest prevalence of smoking in Brazil was among men, representing 11.7% of the general population

during the last analysis of the surveillance system, other studies carried out in the country show a higher prevalence of female smokers. A study carried out in São Luís in 2018 showed that 64% of the participants were female, in agreement with the findings of this study.<sup>9</sup>

Even though most studies indicate that smoking is higher among the brown and black population and those with low levels of education, the survey revealed that the majority of participants are white, have completed high school, followed by a large percentage who have higher education or more. In other words, a considerable percentage of the population participating in the survey has 11 or more years of schooling. In a study published in 2020, 75.7% of the participants considered themselves non-white (which differs from the current survey), and 39.8% had 10 to 12 years of schooling, followed by 30.5% with up to 9 years of schooling. In addition, the study concluded that non-smokers had a higher level of education than smokers.<sup>10</sup>

The smoking control group should include 4 compulsory meetings, held over 4 consecutive weeks, lasting 1.5 hours for each session, ideally with 10 to 15 participants per session. Subsequently, it is necessary to monitor the participants over the following 12 months, recording the number of patients attended, their situation in relation to tobacco use and any dropouts. Even though the present study showed that the majority of participants completed the first 4 meetings of the group, a study carried out in 2021 in the city of Anápolis revealed that most participants only attended the first 2 meetings of the group, with 100% attending the first 2, 63.6% the third and 54.6% the fourth.<sup>11</sup>

The Smoking Control Group at primary health care centers is the main support measure for users in this cessation process,



mainly because of the whole approach that is taken during treatment. Several studies carried out in Brazil have shown the group's effectiveness in abstinence, which according to the Ministry of Health, should be 30% or more after the first 12 months of starting therapy.<sup>12</sup> The results of a study carried out in São Luís to evaluate the effectiveness of the group in a basic unit in the region in 2018 showed a high rate of effectiveness with complete treatment, with 60% abstinence after 12 months from the start of follow-up.<sup>9</sup>

Despite its proven effectiveness, 55.6% of the participants in this study said they had not been able to quit smoking, mainly due to the interruption of maintenance sessions due to the COVID-19 pandemic, but even if they didn't quit, 60% said they had reduced the number of daily cigarettes, which should be considered an important milestone in the process. In a recent study<sup>13</sup>, 34% of participants claimed to have increased their consumption of daily cigarettes during the COVID-19 pandemic, which may be mainly related to the period of lockdown and social distancing, which may have caused greater feelings of anxiety, sadness and depression<sup>14</sup> when compared to the 2021 period addressed in the current survey, in which the Brazilian population went through periods of greater relaxation of restrictive measures.

The WHO classified smoking as a chronic non-communicable disease from 1997 onwards (ICD Z72.0), and it became part of the group of mental and behavioral disorders due to the use of psychoactive substances. In addition to this classification, it is also related to the development of other chronic non-communicable diseases (CNCDs), mainly cardiovascular and pulmonary, and its association with lung cancer has been evident since the 50s. The survey data showed that many users reported having developed some complication due to long-term smoking, although most of the participants said they did not have hypertension, diabetes or any lung/respiratory disease.

Many studies point to links between patients with chronic non-communicable diseases and smoking, especially when it comes to hypertension. It is worth noting that many of the respondents who said they did not have any of the three comorbidities reported that they had never sought care for a possible diagnosis of NCDs, but that they had already had alarming acute episodes.

A study carried out in 2021, which assessed the impact of hypertension on the prevalence of diabetic foot in Brazil, found that 30.48% of the hypertensive patients in the survey said they were smokers.<sup>15</sup> At the same time, data from VIGITEL<sup>8</sup> revealed that the prevalence of diabetes rose from 5.5% to 7.4%, and hypertension from 22.6% to 24.5% among smokers

in Brazil. When it comes to chronic obstructive pulmonary disease (COPD), the results of a study carried out in 2020 highlighted that 62% of smokers assessed who have a high or very high dependence are more likely to develop COPD in a shorter period of time, without canceling out the high chances of other levels of dependence.<sup>16</sup>

As far as the medication method is concerned, most of the participants who used it said they had used the intradermal patch as a treatment option. Studies carried out elsewhere in Brazil also point to a higher prevalence of patch use among medication methods associated with cognitive-behavioral methods. A study carried out in Anápolis to assess the effectiveness of the smoking control group in the region showed that 45.4% of the people who took part in the study needed drug support in their treatment, and all of them were exclusive users of the intradermal patch.<sup>11</sup>

The motivation for joining the smoking group is one of the most important pieces of information collected during the approach, as a way of gaining a more individualized understanding of each case presented. A study in Florianópolis<sup>7</sup> showed that the main motivation for ex-smokers to start treatment was concern for their health, 70% at the time of stopping and 46.6% in the long term, as in the present study, in which 84.4% were motivated both by seeking quality of life and by the consequences of health complications.

The same study<sup>7</sup> highlighted that 88.3% of users did not seek health services for smoking cessation, showing a different profile from the current study, in which all sought treatment at health units; 95.5% reported that the group helped positively in quitting or at least reducing daily cigarettes and 88% of those who did not quit said they would return to the unit for other activities related to smoking.

The COVID-19 pandemic has caused several changes in the routine of health service activities. Primary care units had to adapt to the demands of treating flu-like syndromes, which ended up causing the interruption of some activities, including the tobacco control group. Although most of the participants in this study had reduced the number of cigarettes they smoked per day, even in the midst of the pandemic, another study showed that the percentage increase in the number of cigarettes per day was considerable: an increase of 10 cigarettes per day was observed in 22.5%, and 20 cigarettes per day in 5.1% of the participants, i.e. half to one pack more per day.<sup>13</sup>

The Fagerstrom Test is the main instrument for assessing smoking dependence and is one of the initial methods for approaching individuals seeking treatment at the health service. Other studies carried out in Brazil with users attending groups at the same time showed medium to very high levels of

dependence, while in the present study the majority had very low to medium levels of dependence. According to a study carried out in 2020 in a health unit in Maringá, 35.3% of users had medium dependence and 23.5% had very high dependence, which led the study to conclude that “the greater the habit of smoking in the early hours of the day, the greater the level of dependence”.<sup>17</sup> These results differ from the profile of users in the present study who, as well as having a lower level of dependence, had most of the variables related to dependence with scores below those observed in the Maringá health unit.

## CONCLUSION

Considering the effectiveness target suggested by the Ministry of Health, in which the smoking cessation rate must be equal to or greater than 30% twelve months after the start of therapy, the treatment program in this study showed significant success, since 44.4% remained smoke-free for a period of more than 18 months during the COVID-19 pandemic. Another important marker of the group's effectiveness was the comparison of dependence levels: while in 2019 the majority had very low to medium dependence, in 2021, the majority had stopped the habit or were at a low dependence level (24.6%).

Since the COVID-19 pandemic, the role of health professionals has become more relevant, not only because they are fundamental in the cessation process, but also because they are responsible for disseminating information related to the high risk that smokers face. Despite the fact that reducing the number of cigarettes a day is a great motivation for users when it comes to quitting smoking altogether, the participation of professionals in this process is of the utmost importance.

Therefore, it is extremely important that approaches are carried out in health units individually and collectively and, above all, that health teams are keeping track of the current situation of these users through telephone contact, home visits or even in other situations where they need to visit their referral unit. Strengthening expanded care for users means further strengthening Primary Health Care and, above all, encouraging greater and better investment in public policies.

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