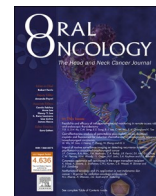




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Letter to the editor



COVID-19, changes in smoking behaviour, and head and neck cancer: Current data and future perspectives

Letter to the Editor

The COVID-19 pandemic has resulted in a global health emergency. Tobacco is an important risk factor for several diseases, such as cancers, cardiovascular diseases, and respiratory tract diseases [1,2]. These tobacco-induced diseases are important comorbidities among patients with severe COVID-19 [3,4]. We recently have hypothesized that concern about the COVID-19 pandemic could encourage smoking cessation. Thus, impact on survival and trends of head and neck cancers could be expected [1]. Conversely, it is also possible that some people start or intensify the consumption of tobacco because of stress and anxiety associated with pandemic [2,4]. To evaluate these hypotheses, we assessed the impact of COVID-19 pandemic on the rate of tobacco initiation and cessation in the Brazilian population.

The survey was approved by the Research Ethics Committee of the Federal University of Pernambuco, Recife, Brazil, and was conducted in accordance with the Declaration of Helsinki (protocol # 31655120.7.0000.5208). This is a cross-sectional web-based study. Volunteer participants (aged ≥ 18 years) were recruited for the study by social media (Facebook® and Instagram®), and WhatsApp®, using the convenience sampling method. Data were collected from June 6 to July 6, 2020, using an anonymous, self-administered questionnaire called “Fantastic Lifestyle” hosted online (Google Forms, Google®). It is a generic instrument translated and validated into Portuguese (Brazil) by Rodríguez-Anez et al. [5]. The FANTASTIC questionnaire represents the initial letters of the domains in which the questions are distributed: **F** = Family and friends; **A** = Activity; **N** = Nutrition; **T** = Tobacco & toxics; **A** = Alcohol; **S** = Sleep, seatbelts, stress, safe sex; **T** = Type of behaviour; **I** = Insight; **C** = Career. For this analysis, the T domain and questions from other domains that could directly or indirectly influence smoking during quarantine, were selected. In addition, a sociodemographic section was also added. All volunteers in the online survey submitted their informed consent form before participation.

The data were entered into an IBM SPSS software platform (version 25.00, Armonk, New York, USA, IBM Corporation) and analysed using descriptive and inferential statistics (chi-square test and logistic regression). In the chi-square test, possible changes in habits were investigated, making associations between the responses of the period before and during the pandemic. Associations with p values ≤ 0.05 were considered significant. For the logistic regression analysis, the variables of interest were evaluated for the binary outcomes “Smoking acquired during the pandemic by COVID-19” (0 = No; 1 = Yes), and “Stop smoking during the COVID-19 pandemic” (0 = No; 1 = Yes).

A total of 1,515 adults living in all regions from Brazil responded to the questionnaire. Of these, 395 (26.1%) were male and 1,120 (73.9%) were female, with a mean age of 31.8 years (range, 18–80 years; SD, 11.5 years). Before the pandemic, 1,371 (90.5%) reported never having

smoked, and 144 were smokers (9.5%). During the pandemic, from 144 smokers, 43 (29.8%) reported quit the habit. Conversely, from 1371 non-smokers, 10 (0.7%) acquired the habit during the pandemic. The individuals who started smoking during the pandemic were predominantly female ($n = 6$ –60%), with a mean age of 28.1 years, single ($n = 8$ –80%), with completed higher education ($n = 6$ –60%), and current students ($n = 4$ –40%). The participants who quit smoking were mostly males ($n = 24$ –55.8%), with a mean age of 35.1 years, single ($n = 24$ –55.8%), completed higher education ($n = 25$ –58.1%), and current students ($n = 14$ –32.6%). Assessing only current smokers ($n=101$), before the pandemic, 12 (11.9%) reported smoking more than 10 cigarettes/day, and 52 (51.5%) reported smoking 1–10 cigarettes/day. During the pandemic, 30 (29.7%) people reported smoking more than 10 cigarettes and 36 (35.6%) from 1 to 10 cigarettes/day ($p < 0.001$).

Regarding the smoking cessation, women were 4.76 times less likely to quit smoking ($p < 0.001$), and retirees stopped smoking during the pandemic 11.18 times more than the self-employed ($p = 0.002$). Moreover, people who sometimes ate a balanced diet were 3.04 times more likely to quit smoking than those who almost never consumed it ($p = 0.0031$). Finally, people above 2 kg of their normal (healthy) weight were 11.11 times less likely to quit smoking, compared to people in the range above 8 kg ($p = 0.004$). In the same way, people who classified themselves as normal weight were 4.54 times less likely to quit smoking compared to people who considered themselves in the >8 kg range ($p = 0.004$). For acquiring the habit during the pandemic, no significant associations were observed.

In Brazil, in 2019, 9.8% of the population over 18 years old smoked [6], as observed in this survey. Studies show that moments of constant fear and stress, such as those experienced during the COVID-19 pandemic, can trigger the initiation of addictions [4,7]. In this study, few participants started using tobacco. However, there was a significant increase in tobacco consumption, similar to found in another study [8]. Meanwhile, 29.8% of smokers reported quit smoking during the pandemic. Other large survey also found more individuals quit than started smoking, yielding a positive change in smoking cessation [9]. Retirees are usually elderly or people with comorbidities. This group, like the obese, are at greater risk for respiratory or vascular complications associated with COVID-19, with smoking being an aggravating factor [10,11]. Fear of infection with worse outcome may have contributed to smoking cessation in these patients. Non-smokers and ex-smokers consume significantly more fruits, vegetables and fibre, and less saturated fats and fats in general than smokers [12]. Smokers who consume more fruits and vegetables are more concerned with health than smokers who eat rarely [13] and, therefore, are more likely to quit smoking.

In summary, the COVID-19 pandemic may accelerate smoking

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cessation. Patients with comorbidities were apparently more likely to quit smoking. Future studies are necessary to assess these changes over the long-term and to evaluate the impact on the prevalence and prognosis of tobacco-induced diseases, particularly head and neck cancers. In addition, special attention should be paid to probable increase of heavy smokers during the pandemic.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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