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Original Research Article

An epidemiological study of nicotine de-addiction

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ABSTRACT

Background: Nicotine is the primary contributor to cancer among users and harms nearly every organ in the body. Nicotine de-addiction is one of the best things that can protect the vulnerable body from disease. Nicotine de-addiction includes diverse methods from simple medical advice to pharmacotherapy. However, some people show serious withdrawal symptoms after quitting. It is therefore necessary to analyze the frequency of the use of various de-addiction methods and prevalence of withdrawal symptoms observed on quitting.
Methods: The relevant information was collected from the community (friends, relatives, neighbours, students) using a specially designed Google form or data collection form, prepared in both English and Gujarati. Data collected was subjected to descriptive statistical analysis to determine the frequency distribution of various parameters using Microsoft excel.
Results: 83.52% people were aware about the carcinogenic effects of nicotine containing tobacco products. 49.43% people attempted to quit using methods like nicotine replacement therapies, counselling and drug therapy. Out of which, 36.78% people were successful. It was observed that 75.86% people observed one or other withdrawal effects during the quitting attempt.
Conclusions: Encouraging users for de-addiction can have positive cascading effects. De-addiction treatments in compliance with people are counselling, Nicotine patches and Nicotine gum. However, many people did not choose any of these methods may be due to cost and access barriers. Integration of nicotine replacement therapies and behavioural treatment must be recommended by the physicians to help their patients overcome this habit.

Keywords: Nicotine, De-addiction, Nicotine replacement therapies, Descriptive statistical analysis

INTRODUCTION

Nicotine is a naturally produced alkaloid. It is stimulant in low doses and a depressant of nervous activity in very high doses. Nicotine is responsible for addiction.[1] Drug addiction can be characterised by an excessive engagement in drug use, unsuccessful attempts in controlling drug intake, increase in anxiety and emotional pain, and inaccurate beliefs about drug use.[2]

Nicotine harms nearly every organ in the body. Although nicotine itself does not cause cancer, at least 69 chemicals in tobacco smoke are carcinogenic and cigarette smoking accounts for at least 30 percent of all cancer deaths.[3] The overall rates of death from cancer are twice as high among smokers as non-smokers. Foremost among the cancers caused by tobacco use is lung cancer. Cigarette smoking has been linked to about 80 to 90 percent of all cases of lung cancer. Smoking is also associated with cancers of the mouth, pharynx, larynx, oesophagus, stomach, pancreas, cervix, kidney, and bladder. Smokeless tobacco has also been linked to cancer of the pharynx, oesophagus, stomach, as well as to colorectal cancer.[4]

Smoking and smokeless tobacco cessation or nicotine de-addiction is one of the best things that can protect the vulnerable body from disease, fight illness, undergo treatment, and heal. Research shows that 70% of people

who smoke want to quit. Approximately 80% of smokers attempt to quit and only 3–5% remain abstinent at 6 months.[5] Quitting at any age leads to significant reduction in the risks associated with it and it's possible to curb this menace using specific treatment.

Nicotine de-addiction includes diverse methods from simple medical advice to pharmacotherapy. Counselling and medication are each effective in treating tobacco dependence, but the combination of both is more effective than either alone. Moreover, these treatments are among the most cost-effective interventions in healthcare. Pharmacotherapeutic approaches to tobacco addiction includes nicotine replacement therapies. Some cessation technologies like mobile technologies, social media and texting interventions are emerging that might prove to be more effective in future.[6]

Hence, this observational and community based epidemiological study has been undertaken with the aim of analysing the frequency of the use of various de-addiction methods and prevalence of withdrawal symptoms observed on quitting.

Objectives

Major objectives of the study are: to analyze the responsible factors behind starting and continuing the use of tobacco products; to evaluate the harmful effects developed during/after the usage of nicotine containing tobacco products; to analyze the use of various de-addiction methods; and to evaluate the withdrawal symptoms observed after quitting the use of nicotine containing products.

METHODS

Study design

It was a cross-sectional, observational, and community-based study.

Study period

The duration of the study was for 2 months from January 2022 to February 2022.

Inclusion criteria

Individuals habituated to use of nicotine containing products; both male and female individuals in the age range of 15-80 years; and individuals habituated to use of nicotine containing products in the past and then quit the use of these products were included in the study.

Exclusion criteria

Individuals who were not using any kind of tobacco products were excluded from the study.

Source of data

The relevant information was collected from the community (friends, relatives, neighbours, students) using a specially designed Google form or data collection form, prepared in both English and Gujarati.

Study procedure

A well planned, structured data collection form/Google form relevant to the topic of study was designed. Information regarding the purpose of study and confidentiality of data/information was incorporated in the Google form. The Google form was shared with friends, neighbours, relatives, and students in the community. Thus, those who responded, indirectly gave their consent to participate in the study.

Data of individuals who did not have access of internet or were not literate enough to provide information through Google form, was collected by personally interviewing them and recording the information provided by them in data collection form (English/Gujarati).

Statistical analysis

Data collected was subjected to descriptive statistical analysis to determine the frequency distribution of various parameters using Microsoft excel.

RESULTS

Frequency distribution of respondents based on the reasons behind starting the use of nicotine containing tobacco products

As evident from the graph, pressure from friends has been the strongest reason for 68.18% people to start the use of tobacco products. Moreover, family issues (32.37%) and curiosity (24.43%) and advertisement/promotion (13.63%) were other significant reasons that push the people to become a part of this menace. Hardly 1.7% were drawn in due to depression and with the motive to work efficiently (Figure 1).

Frequency distribution of respondents based on the reasons behind continuing the use of nicotine containing tobacco products

The graph depicts the relative reasons behind continuing the use of tobacco products, of which mood refreshment has been the single biggest reason 80.11% people. 36.36% people used these products to concentrate in study/work.

While other responsible factors for continuing the use of these products were mouth refreshment (21%) and aid in digestion (2.27%) (Figure 2).

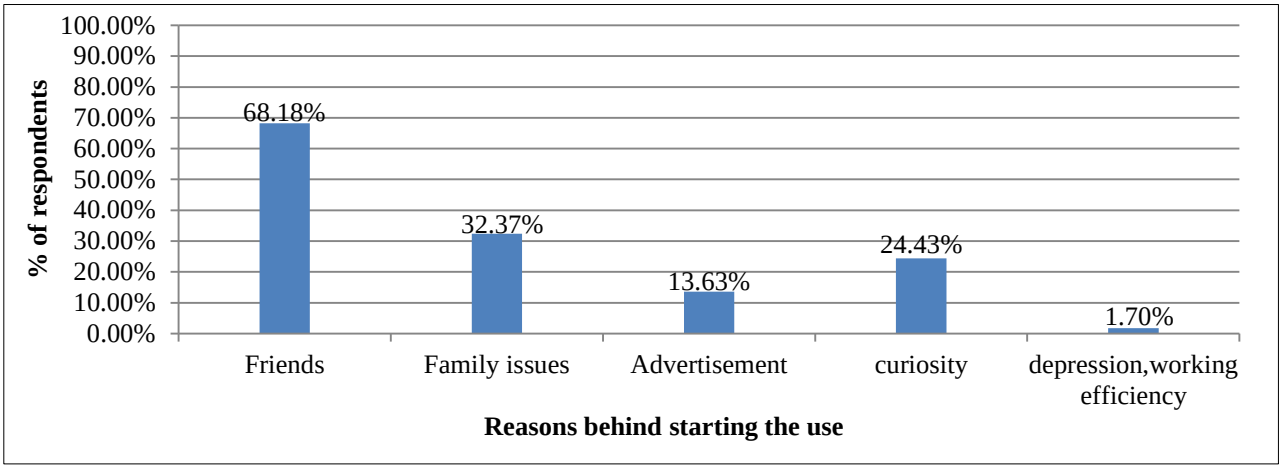

Figure 1: Frequency distribution of respondents based on the reasons behind starting the use of nicotine containing tobacco products.

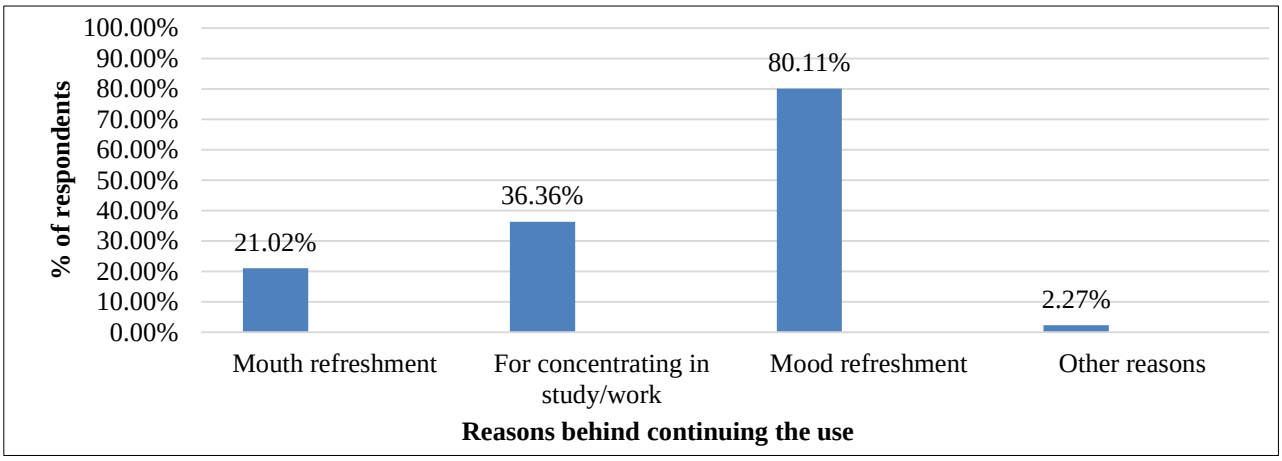

Figure 2: Frequency distribution of respondents based on the reasons behind continuing the use of nicotine containing tobacco products.

Frequency distribution of respondents based on awareness about the deleterious effects caused by nicotine containing tobacco products

Noticeably, 83.52% people were aware about the carcinogenic effects of these products, whereas 14.20% people were not aware (Figure 3).

Frequency distribution of respondents based on the harmful effects experienced by them due to the use of nicotine containing tobacco products

It can be observed from the graph that 56.25% people that is almost half of the population whose data was collected have not experienced any harmful effect. Of the remaining, headache, cough and dyspepsia were experienced by 18.18%, 16.47% and 15.9% people respectively. Additionally, 4.54% people experienced difficulty in breathing and 6.25% people observed some forms of heart disease (Figure 4).

Frequency distribution of respondents who attempted de-addiction

As conveyed in the graph, 49.43% people attempted to quit, out of which 36.78% people were successful. However, 50.56% people did not opt for de-addiction (Figure 5).

Frequency distribution of respondents based on the reasons behind attempting de-addiction

The graph presents the frequency distribution of the reasons based on which people attempted to quit. As displayed, 72.41% people chose to quit for better health. 36.78% people tried de-addiction for financial reason while 22.98% people attempted due to social/family pressure.

Moreover, 2.29% female had to quit due to pregnancy (Figure 6).

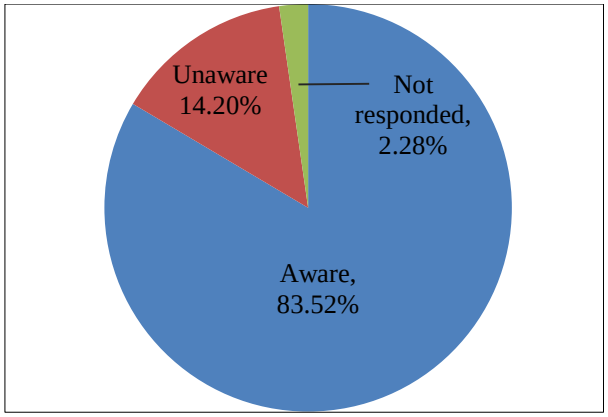

Figure 3: Frequency distribution of respondents based on awareness about the deleterious effects caused by nicotine containing tobacco products.

Frequency distribution of respondents based on de-addiction method adopted

The graph below compares the relative use of different de-addiction methods. Evidently, counselling was opted by 24.13% people. Nicotine replacement therapies like nicotine gum and nicotex patches were used by 21.83% and 11.49% people respectively. Barely, 3.44% people chose nicotine nasal spray, nicotine oral inhaler and nicotine sublingual tablet each.

However, the least opted method was the drug therapy, chosen by 1.14% of respondents. Distinguishable 44.82% people did not take the aid of any of these methods (Figure 7).

Frequency distribution of respondents based on the withdrawal symptoms observed due to de-addiction

It was observed that 75.86% people observed one or other withdrawal effects during the quit attempt. Seemingly, 40.22% had experienced difficulty in concentrating. Depressed mood/restlessness and sleeplessness was noticed by almost equal % of people, i.e. 33.33% and 31.03% respectively.

Moreover, 10.34% people noticed increase in hunger and 4.59% people had an improved taste perception. On the other hand, 20.6% people did not notice any of the withdrawal symptoms (Figure 8).

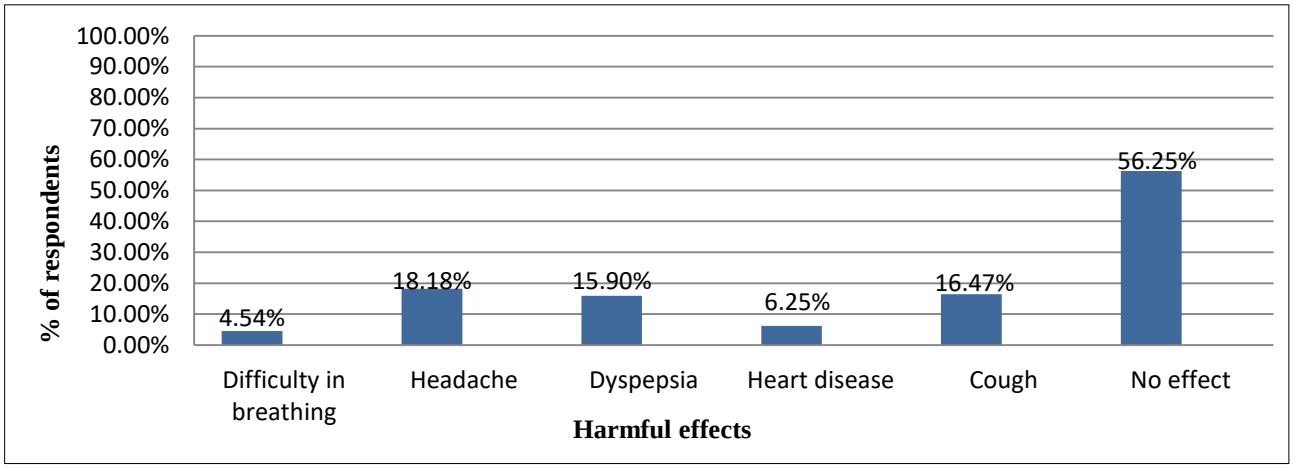

Figure 4: Frequency distribution of respondents based on the harmful effects experienced by them due to the use of nicotine containing tobacco products.

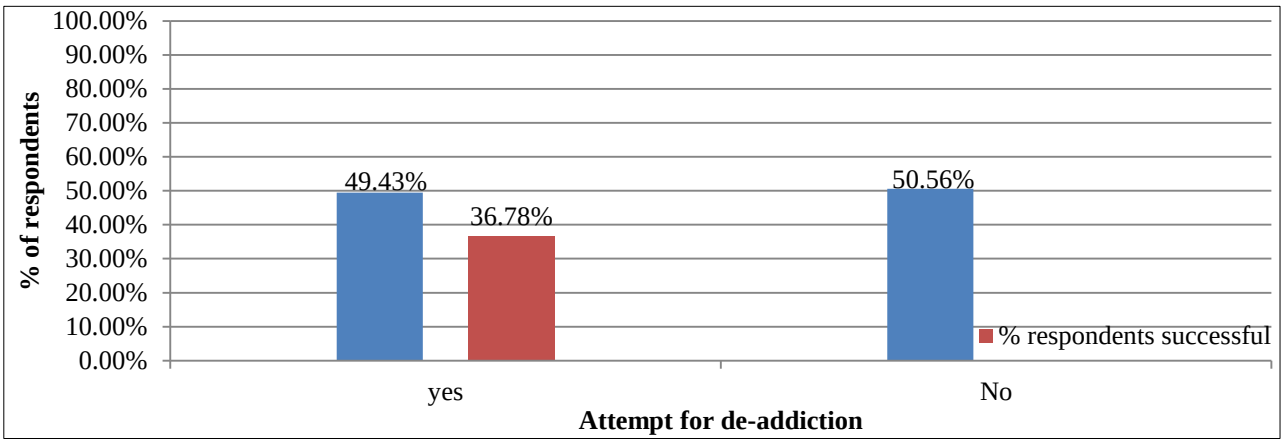

Figure 5: Frequency distribution of respondents who attempted de-addiction.

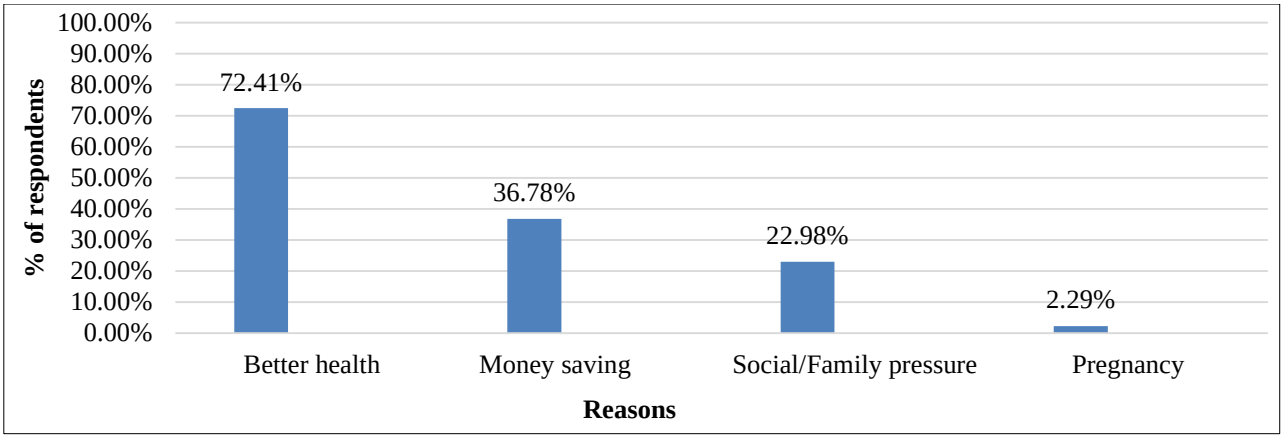

Figure 6: Frequency distribution of respondents based on the reasons behind attempting de-addiction.

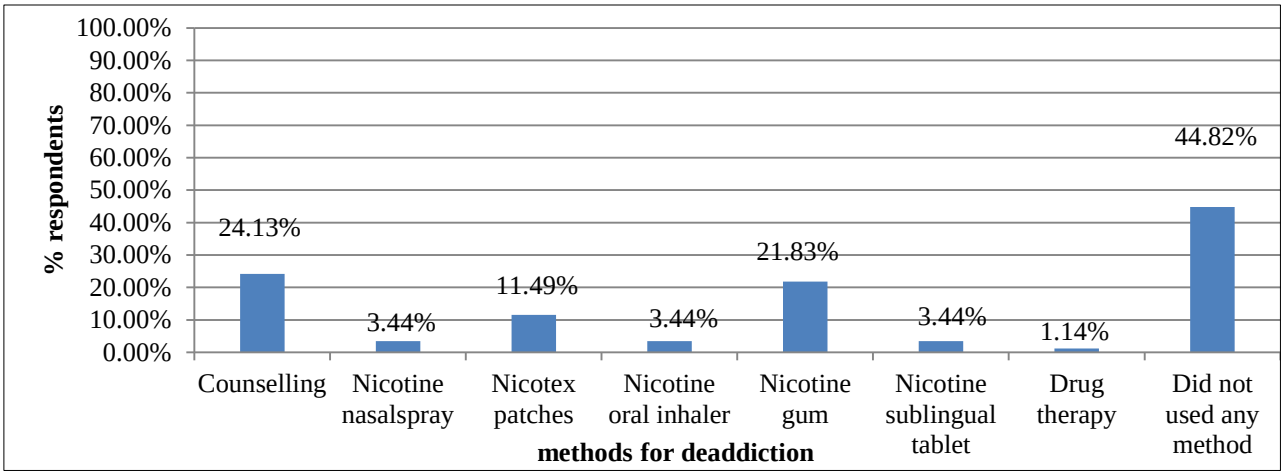

Figure 7: Frequency distribution of respondents based on de-addiction method adopted.

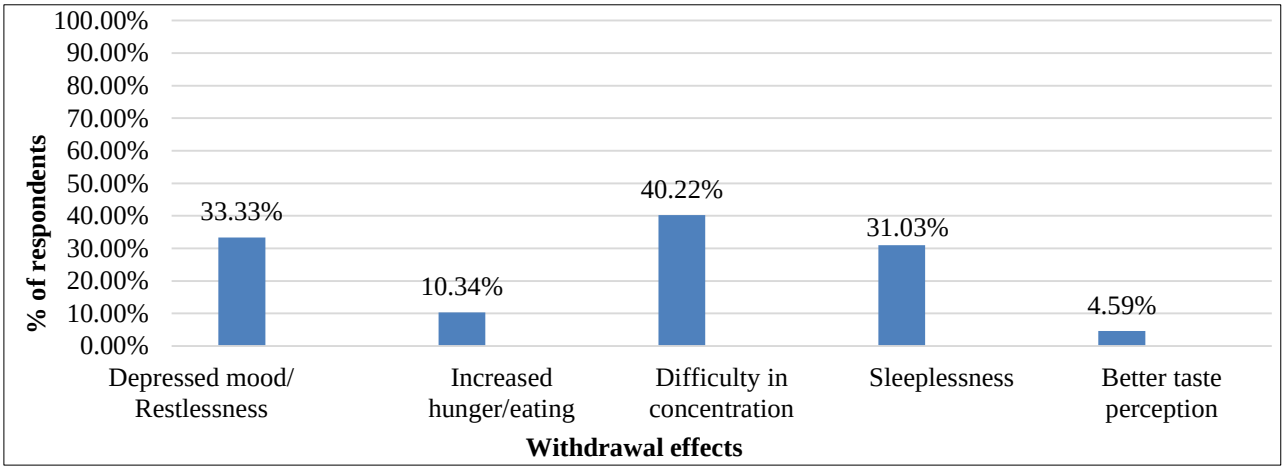

Figure 8: Frequency distribution of respondents based on the withdrawal symptoms observed due to de-addiction.

DISCUSSION

De-addiction from nicotine containing products is one of the best things that can protect the vulnerable body from disease and fight illness.[5] Hence, the present study was undertaken with the aim of analysing the frequency of the use of various quitting methods and prevalence of withdrawal symptoms observed on quitting.

Examining the reasons behind starting the use of nicotine containing products, it can be concluded that social environment in close communication, for instance, friends can be the single strong reason to persuade a non-user to

start experiencing these products and this statement is endorsed in the review by Solhi et al.[7]

As per Prochaska et al, out of 40% quit attempts made each year, only about 5% are successful.[8] On the contrary, our study outcomes illustrate that out of 49.43% people (which is more or less similar) who attempted for de-addiction, an impressive 36.78% people were successful.

Looking on to the frequency of use of various de-addiction methods, it was found that although counselling was opted by 24.13% people in our present study, only 5.9% people opted for the same as per the report published by Borrelli et al. However, the use of nicotine replacement therapies was almost equally opted, by 43.64% people in our study and 46.1% people in their study.[9]

Limitations

The volume of collected data was less. So, it may not be the true representative of population under study.

The possibility of respondent's responses being biased cannot be ruled out.

A better understanding of the practices, especially, that focusing on the proper use of nicotine replacement therapies, the ways people overcame the experienced withdrawal effects and also understanding the apathy of people to the nicotine replacement therapies was beyond the scope of this study.

CONCLUSION

It can be concluded that nicotine addiction is composed of biological, behavioural, and psychological processes. Cigarettes and gutkha/mawa were the most favoured nicotine containing tobacco products. Encouraging users for de-addiction, both by family and friends and self-awareness can have positive cascading effects. Additionally, preventing adolescent initiation of tobacco may be the most effective method of controlling tobacco use. Evidence-based nicotine addiction treatments in compliance with people are counselling, Nicotine patches and nicotine gum. However, despite innovations and progress in nicotine addiction therapies, the apathy of people who did not choose any of this method was not understood and it is notable that this simple method of quitting remains the most frequently used. Integration of nicotine replacement therapies and behavioural treatment must be recommended by the physicians to help their patients overcome this habit. Cost and access might be the barriers to care and thus improvements could be made in the way that these products are regulated, compared with tobacco products. It is also suggested to address the prevention and control of tobacco use adequately by implementing strong anti-tobacco government policies and stringent laws.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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