

## Community Medicine

## KEYWORDS:

COVID-19; Lockdown;  
Counselling; Tobacco  
Cessation; Employees

CHANGES IN TOBACCO CONSUMPTION  
BEHAVIOUR DURING COVID-19 RELATED  
LOCKDOWN AMONG EMPLOYEES OF  
GOVERNMENT MEDICAL COLLEGE, GUJARAT



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## Abstract-

**Background:** Tobacco use is one of the major preventable causes of death and disability worldwide. Tobacco use is detrimental at any time. However, it is proving to be more dangerous during the COVID-19 pandemic. Tobacco use may increase the risk of being infected, increases the chances of complications, and also increases the probability of its spread. We assessed the awareness about this association and the impact of the lockdown on tobacco use among current tobacco users of Government Medical College, Gujarat.

**Aims and Objectives:** Our aims and objective of the study is to assess the awareness about the association and the impact of the lockdown on tobacco use among current tobacco users (employees) of Government Medical College, Gujarat.

**Methodology:** A study was conducted among 173 tobacco users (Class 3 & Class 4) of Government Medical College, Gujarat using simple random sampling technique. They were under active follow-up in their course of the 10-month counselling program from January 2020 to November 2020. The data was collected using pre-tested close ended questionnaire. The analysis was done using the SPSS statistical package Ethical approval was taken from the Institute Ethical Committee. Written informed consents were taken from all the respondents. Appropriate statistical test was used.

**Result:** Two-thirds (68%) of tobacco users were unaware of the association between tobacco and COVID-19. Out of the 173 current tobacco users, 49 tobacco users quit tobacco during the lockdown period; out of which 51% quit because of the unavailability and increased prices of tobacco products and rest because of lockdown and their concern over COVID-19. **Conclusion:** The extent of awareness about the association of tobacco and COVID-19 influenced the tobacco users to stop tobacco use. Awareness activities about the harmful effects of tobacco during the pandemic have to be prioritized and further strengthened.

## INTRODUCTION

The new coronavirus disease 2019 (SARS-CoV-2) was first seen at the end of 2019 in Wuhan, China<sup>1</sup>. COVID-19 (coronavirus disease 2019) is an infectious disease caused by the virus SARS-CoV-2 which is highly contagious and causes severe pneumonia, acute respiratory distress syndrome, and death especially in vulnerable populations including older adults and people with chronic medical conditions such as cardiovascular disease, diabetes, respiratory disease, hypertension, and malignancy<sup>2</sup>. The COVID-19 outbreak has affected severely the whole world. Most countries have implemented 'lockdown' interventions at different degrees and at different times. The main aim of lockdown was to prevent more rapid spread of COVID-19 and to allow more time for public health and healthcare services to become better prepared for the

prevention and management of the disease<sup>3</sup>. In line with lockdown of various countries at global level, On March 24, 2020, Prime Minister of India called for a complete lockdown of the entire nation for 21 days in an effort to contain the COVID-19 pandemic<sup>4</sup>. The COVID-19 pandemic and lockdown are associated with increased levels of anxiety, fear, sadness, difficulty adjusting, symptoms of post-traumatic stress disorder and suicidality, both in the general population and specific subgroups. The presence of this type of psychopathology increases the risk of involvement and worsens the use of addictive substances as a maladaptive coping strategy<sup>5</sup>. Covid-19 pandemic related anxiety, boredom, and irregular routines were cited as major drivers of increased nicotine and tobacco use during the initial COVID-19 "lockdown," according to research conducted by Columbia University<sup>6</sup>. Tobacco consumption and high-risk alcohol are one of the leading causes of death worldwide. Quitting tobacco consumption and reducing alcohol consumption can reduce the burden of non-communicable diseases<sup>7</sup>. Keeping in mind the above facts regarding lockdown and tobacco consumption, the present study was carried out to find out that the effect of lockdown and tobacco cessation counselling on tobacco consumption in employees of a tertiary care centre in a city of Western Gujarat.

## AIMS &amp; OBJECTIVES

1. To assess the awareness about the association of tobacco consumption and Covid 19 among current tobacco users (employees) of Government Medical College, Gujarat
2. To assess the impact of the Covid-19 lockdown over the Quit Rate among current tobacco users (employees).

## METHODOLOGY

**Study Design:** Longitudinal follow-up type of study design

**Study Setting:** Government Medical College of Saurashtra region of Gujarat.

**Study Population:** Class 3 and Class 4 employees working in Medical College

## Definitions/Criteria:

- 1) Current tobacco user – If a person currently consuming tobacco in any form like bidi, cigarette, pan masala or any other form in last 12 months.
- 2) Former tobacco user – If a person had not consumed any form of tobacco in last 12 months.
- 3) Non-user – If a person had not consumed any form of tobacco in any time during his/her life.

## SAMPLE SIZE:

There are total 307 employees working in the study setting. On interviewing it was found that 178 employees were consuming tobacco in one or the other form. So, by Purposive Sampling

Technique all the workers were considered for the study. Out of 178 employees 5 refused to participate in the study. Hence, a final sample size of 173 was considered for the study. Verbal informed consent was obtained from the study participants and they were assured of the privacy of their data.

**Data Collection:**

Data was collected by one-to-one interview and Focused Group discussion which was a part of counselling for awareness regarding quitting of tobacco. A pre-tested, semi structured questionnaire was used for the study. Data collection was carried out and information was obtained at the start of the study about tobacco consumption and at the end of the study same data was collected by follow-up and assessed for if the reduction in tobacco consumption was due to ongoing Counselling or due to Covid lockdown.

**Study Duration:**

Study was started in January 2020 and continued till November 2020 in which last follow-up was done.

**RESULT**

Among 307 employees of the institute who were interviewed, 57.98% were current tobacco user, 6.19% were former tobacco user while 35.83% were not using any type of tobacco. Out of those current tobacco user Class 3 employees were 24.43% while 75.57% belonged to the Class 4. Table 1 shows that the prevalence of tobacco consumption is highest among 28-37 years of age group (31.79%), followed by 38-47 years (28.32%). Least prevalence was seen in >58 years of age group (2.31%). By wide variation tobacco consumption was highly common in males (75.14%) as compared to females (24.85%). Also married people (87.28%) had almost 7 times more chance of consuming tobacco as compared to non-married. Most of the study participants consuming tobacco belong to nuclear family (64.73%).

**Table 1: Socio-demographic Details Of Study Participants (Current Tobacco Users)**

| VARIABLE                   | NO. OF PARTICIPANTS (%) |
|----------------------------|-------------------------|
| <b>A] AGE</b>              |                         |
| 18-27                      | 29 (16.76%)             |
| 28-37                      | 55 (31.79%)             |
| 38-47                      | 49 (28.32%)             |
| 48-57                      | 36 (20.81%)             |
| >58                        | 4 (2.31%)               |
| <b>B] GENDER</b>           |                         |
| Male                       | 130 (75.14%)            |
| Female                     | 43 (24.85%)             |
| <b>C] MARITAL STATUS</b>   |                         |
| Married                    | 151 (87.28%)            |
| Unmarried                  | 22 (12.72%)             |
| <b>D] FAMILY TYPE</b>      |                         |
| Nuclear                    | 112 (64.73%)            |
| Joint                      | 41 (23.69%)             |
| 3 <sup>rd</sup> Generation | 20 (11.56%)             |

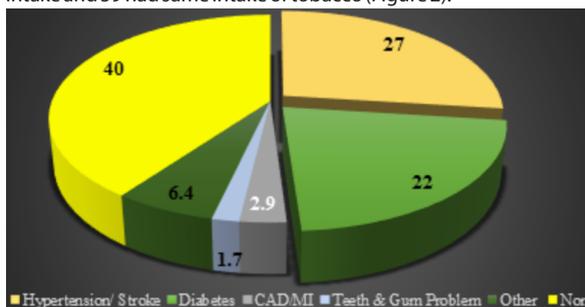
**Table 2: Association Between Socio-demographic Details And Tobacco Consumption Pattern In Study Participants**

|  |              |
|--|--------------|
| <b>A] FAMILY HISTORY OF TOBACCO CONSUMPTION</b>        |              |
| Yes  | 140 (80.92%) |
| No   | 33 (19.08%)  |
| <b>B] FRIENDS/COLLEAGUES HAVING HISTORY OF TOBACCO</b> |              |
| Yes  | 148 (85.55%) |
| No   | 25 (14.45%)  |
| <b>C] TOBACCO FORM</b>                                 |              |
| Smokeless (chewing)                                    | 157 (90.75%) |
| Smoke  | 16 (9.25%)   |
| <b>D] TOBACCO USE</b>                                  |              |
| Daily  | 160 (92.48%) |

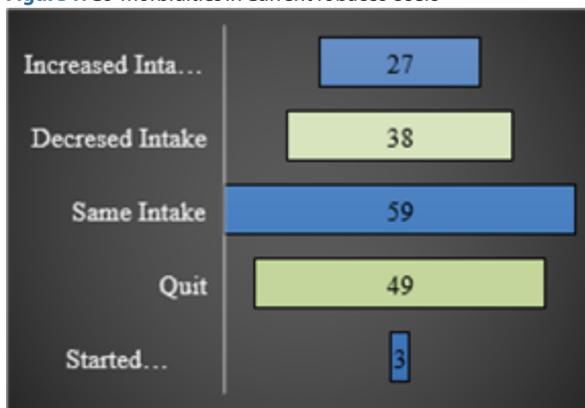
|                                      |              |
|--------------------------------------|--------------|
| Occasional                           | 13 (7.52%)   |
| <b>E] FREQUENCY OF USE (PER DAY)</b> |              |
| 0-2                                  | 25 (14.45%)  |
| 3-5                                  | 84 (48.55%)  |
| 6-8                                  | 57 (32.94%)  |
| >9                                   | 7 (4.04%)    |
| <b>F] USE OF OTHER SUBSTANCES</b>    |              |
| Yes                                  | 21 (12.13%)  |
| No                                   | 152 (87.87%) |

Table 2 shows that majority of tobacco users had a positive family history (80.92%) along with majority (85.55%) of the having friends/colleagues having history of tobacco consumption. Most of the tobacco user (90.75%) were using smokeless form like chewing pan masala, gutkha and mawa masala (local form of gutkha used in Saurashtra region) and most of them used tobacco daily (92.48%). Almost 49% users were using tobacco 3-5 times per day followed by 6-8 times per day by 34% users. As shown in figure 1, Hypertension/Stroke was the most common comorbidity found in current tobacco users (27%), following which diabetes (22%) is second most common; while 40% of participants reported of not having any type of comorbidity.

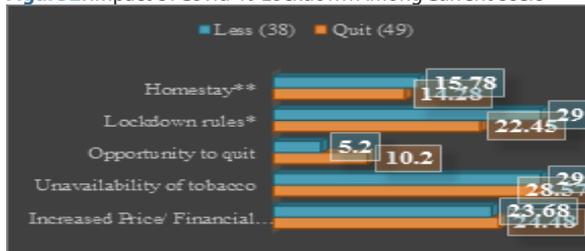
After Covid lockdown on follow up after 9 months it was found that 49 participants had quit tobacco consumption completely. For the sake of convenience abstinence of tobacco intake for at least 1 month was considered as quit. Only 3 participants were such who had started tobacco consumption for the first time. Among current users 38 were such who had decreased intake, 27 had increased intake and 59 had same intake of tobacco (Figure 2).



**Figure 1: Co-morbidities In Current Tobacco Users**

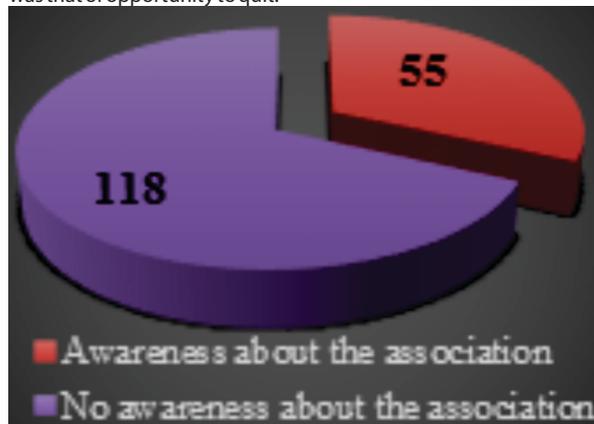


**Figure 2: Impact Of Covid-19 Lockdown Among Current Users**



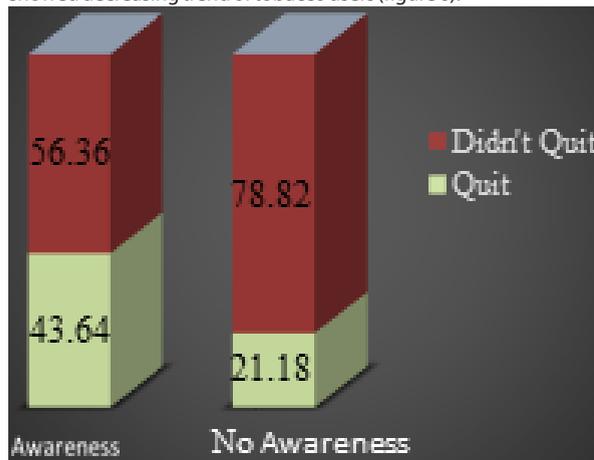
**Figure 3: Reasons For Decreasing/quitting Tobacco Use**

Various reasons for decreasing or quitting tobacco use among 87 tobacco users were shown in figure 3. Majority of them gave reason for quitting and decreasing use was increased price or financial crisis and unavailability of tobacco. Least common reason given by users was that of opportunity to quit.

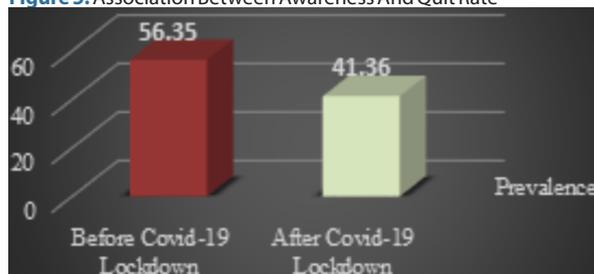


**Figure 4:** Awareness Of The Association Between Tobacco Consumption And Covid-19

As per figure-4, almost 2/3<sup>rd</sup> of the participants were unaware about the association between tobacco consumption and Covid-19. Out of a total of 173 participants only 118 (68.2%) were aware about the association between harmful tobacco consumption and Covid 19 outcome whereas 55 (31.79%) were unaware about the same. [ $\chi^2 = 11.53$ , p-value = 0.00069]. Among participants having awareness about tobacco consumption and Covid outcome among them 43.64% participants have quit tobacco consumption during study period. Quite rate among those who were aware of association between the COVID-19 and tobacco was twice that among those who were not aware and there were a significant difference or more chance of quitting tobacco if person is aware about the tobacco consumption and Covid outcome. [ $\chi^2 = 12.057$ , p-value = 0.00051]. Prevalence of current tobacco users before and after lockdown showed decreasing trend of tobacco users (figure 6).



**Figure 5:** Association Between Awareness And Quit Rate



**Figure 6:** Prevalence Of Current Tobacco Users Before And After Lockdown Showing A Decreasing Trend

**DISCUSSION**

Using a series of monthly follow up, we observed changes in tobacco intake, reduction, attempts to quit from January 2020 till November 2020 when covid 19 lockdown was implemented by government. In the current study, 56.35% were current tobacco user, almost 90.75% participants were using smokeless form like chewing pan masala, gutkha and mawa masala (local form of gutkha used in Saurashtra region) also tobacco consumption was highly common in males (75.14%) as compared to females (24.85%); while as per Himanshu A. Gupte et al<sup>8</sup> 46% were smokers, 45% smokeless tobacco users. The majority (96%) were males and their average age was 40 years. As per S. Veeraiah et al<sup>9</sup> mean age was 42.5 years (standard deviation: 14; range: 15–76); the majority were males (n = 243, 97%). A total of 101 (40%) were current tobacco users, of whom 62 (61%) were smokers, 35 (35%) were smokeless tobacco users and 4 (04%) used both.

In the current study almost 2/3<sup>rd</sup> of the participants were unaware about the association between tobacco consumption and Covid-19. Quite rate among those who were aware of association between the COVID-19 and tobacco was twice that among those who were not aware and there was a significant difference or more chance of quitting tobacco if person is aware about the tobacco consumption and Covid outcome [p-value = 0.00051] Various reasons for decreasing or quitting tobacco use among 87 tobacco users were shown in figure 3. Majority of them gave reason for quitting and decreasing use was increased price or financial crisis and unavailability of tobacco. Least common reason given by users was that of opportunity to quit.; while as per Himanshu A. Gupte et al<sup>8</sup> It was found that 67% were not aware of the association between tobacco and COVID-19. Among those who felt that it had impacted their tobacco use, the commonest impacts were: 1) non-availability of tobacco products (45%), 2) increased price of tobacco products (27%), 3) some users felt that this was an opportunity for them to quit (24%), and 4) a small proportion (4%) of users reported increase in their tobacco use due to the increased stress that they were experiencing in the current context.

In the current study during follow up of 9 months, 49 participants had quit tobacco consumption completely but 3 participants started tobacco consumption for the first time; while as per Himanshu A. Gupte et al<sup>8</sup> A total of 219 tobacco users (38% of those contacted) reported to have abstained from using tobacco after the lockdown started. The proportion of users who abstained among those who were aware about the association of COVID-19 and tobacco use was twice (51%) that among those who were not aware (25%). As per Romain Guignard et al<sup>10</sup> among current smokers, 26.7% reported an increase in their tobacco consumption since the beginning of lockdown (i.e., during the 2 weeks before the survey) and 18.6% reported a decrease, while it remained stable for 54.7%. As per S. Veeraiah et al<sup>9</sup> total of 65 (64%) tobacco users reported reduction of tobacco use during lockdown, use remained the same in 20 (20%) and it was increased in 16 (16%). Nearly two thirds (n = 64, 63%) of the tobacco users reported intention to quit during lockdown, of whom 4 (6%) sought any help/consultation; 38 (38%) actually made a quit attempt during the lockdown. Only 15% (n = 15) had the urge to increase tobacco use during the lockdown (Figure). Reduced tobacco use during lockdown was associated with quit intention (P = 0.02) and quit attempt (P = 0.01)

In the current study increased tobacco price or financial crisis and unavailability of tobacco were the reason by more than 50% participants whereas least common reason was 'opportunity to quit' while as per Himanshu A. Gupte et al<sup>8</sup> main reason for stopping tobacco use were related to the lockdown or concerns about the coronavirus (51%). As per S. Veeraiah et al<sup>9</sup> More than half (n = 57, 56%) reported easy availability of tobacco products. Nearly two thirds (n = 67, 66%) purchased tobacco products daily from shops during the lockdown, 28 (27%) had stocks of tobacco and the remaining 6 (6%) obtained tobacco from peers. Most of the tobacco users reported easy availability of tobacco products and nearly two

thirds could purchase tobacco products daily from shops during the lockdown. This points to gross violations of lockdown regulations in the face of a strict ban on the sale of tobacco products in the city. The most encouraging fact that emerged was that nearly two thirds of tobacco users reported a reduction in tobacco use and an equal number of users reported an intention to quit during lockdown. According to a recent study by Elling et al<sup>11,12</sup> showed that smokers were more motivated to quit due to the higher risk of contracting COVID-19 as a smoker and greater social support to quit.

## CONCLUSIONS

The extent of the awareness about the association of tobacco and COVID-19 influenced the tobacco users to stop tobacco use. Awareness activities about the harmful effects of tobacco during the pandemic have to be prioritised and further strengthened. Creating an environment with reduced access to tobacco products will augment reduction of tobacco consumption to some extent. The lockdown or the pandemic can prove to be an ideal time to quit tobacco use and people are making quit attempts. Adequate measures to motivate and support tobacco users to quit have to be provided through promotion of existing quit lines and improved access to other cessation services.

While the coronavirus pandemic (COVID-19) and lockdown could trigger dysfunctional responses such as anxiety or depression, it could also lead to an increase in unhealthy behaviours such as excessive drinking or smoking. It is necessary to develop psychological support measures for the entire population and, in particular, for the most vulnerable groups as well as for those who develop disorders as a consequence. Moreover, it should be remembered that people subjected to situations of stress and isolation such as the current scenario could resort more frequently to substance use to alleviate negative emotions. Those with a substance use disorder in remission could also have to cope with tension and more intense cravings, leading to an increased risk of relapse. Therefore, primary care physicians and mental health specialists should pay special attention to this possibility, assessing their patients' situation and examining them to ensure they are free of any signs of substance abuse.

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