# **Original Research Article**

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# Prevalence and pattern of tobacco consumption in urban community: a cross-sectional study in adults of Central India

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# **ABSTRACT**

Background: The emergence of tobacco related diseases is a burgeoning public health problem. Every year, more than 8 million people die from tobacco use worldwide. It is one of the major causes of death and disease in India and accounts for nearly 1.35 million deaths every year. India is also the second largest consumer and producer of tobacco. There is an urgent need to curb tobacco use and reduce the associated morbidities and mortalities. The present study was the first step in the process of generating strategies to control the use of tobacco by estimating the prevalence and pattern of tobacco use in an urban community.

Methods: Study was conducted in the field practice area of an urban health training center of a tertiary care hospital. House to house survey was done. Houses were selected by systemic random sampling. All the people above 15 years of age were included in the study, with total subjects interviewed being 590.

Results: 371 (62.88%) study subjects were males and 219 (37.19%) were females. The prevalence of tobacco consumption was found to be 34.06%, 28.81% used smokeless form of tobacco and 3.39% were smokers. About 1.86% consumed both forms of tobacco.

Conclusions: Prevalence of tobacco consumption particularly of smokeless form was quite high. Identification of high-risk group and their pattern of tobacco consumption is crucial in developing innovative and effective strategies to curb the tobacco epidemic in India.

**Keywords:** Smoking, Tobacco consumption, Urban community, Prevalence

### INTRODUCTION

Epidemiological research over past several years have confirmed the harmful effects of tobacco in the society, not only on the health of people but also on their economy. The emergence of tobacco related diseases is a burgeoning public health problem. Tobacco consumption either in smokeless form or as smoking is reported to be the largest preventable cause of death and disability worldwide. According to recent WHO estimates, more than 8 million deaths annually are attributed to tobacco worldwide.1 Of these, most deaths occur in low and

middle-income countries like India where tobacco use accounts for nearly 1.35 million deaths every year. Nearly 267 million adults (15 years and above) in India (29% of all adults) are users of tobacco according to the global adult tobacco survey India, 2016-17, making it the second largest consumer and producer of tobacco in the world.<sup>2</sup> Thus, tobacco use is one of the biggest public health threats in India. It leads not only to loss of lives but also has heavy social and economic costs. The economic burden from tobacco constitutes more than 1% of India's GDP and the direct health expenditures on treating tobacco-related diseases alone accounts for 5.3% of the total private and public health expenditures in India in a year.<sup>3</sup> These facts indicate that there is an urgent need to curb tobacco use and reduce the associated morbidities and mortalities. Since the first step in formulating strategies and policies to control the use of tobacco was to estimate the prevalence and pattern of tobacco use by the population, the present study attempted to do so in an urban community of central India.

#### **METHODS**

Approval from the institutional ethics committee was obtained. Study was conducted in the field practice area of an urban health training center of a tertiary care government hospital between November 2019 and January 2020. Sample size was estimated as 531 using,

$$n = \frac{Z^2 \alpha (p)(1-p)}{d^2}$$

with expected proportion being 16.69%,

relative precision (d)=19%,

desired confidence level=95%.4

It was a cross-sectional observational study in which house to house survey was done. The population above 15 years in that area was 1800 so every third individual was selected by systemic random sampling. 590 study subjects were included in the study. 10 study subjects were excluded as they could not be contacted despite repeated visits. Informed consent was taken from all the study subjects following which information was collected by interview technique by using a pre-designed and pretested questionnaire. Data was analysed using Epi info version 7.2 and prevalence was calculated in percentage.

## **RESULTS**

Of the total study subjects interviewed 371 (62.88%) were males and 219 (37.19%) were females. Of the total males 49.33% (183) consumed some form of tobacco, while of the total females 8.22% (18) were consumers of some form of tobacco.

The prevalence of tobacco consumption in the study population was found to be 34.06 % (201). Out of this 28.81% (170) used smokeless form of tobacco and 3.39% (20) were smokers. About 1.86% (11) consumed both forms of tobacco. Thus, the most common form of tobacco consumed was found to be smokeless form (Figure 1).

Of the subjects consuming smokeless form of tobacco, 36% (65) of the study subjects consumed thankar tambaku, while 31% (56) consumed more than one form of smokeless tobacco (Figure 2).

Cigarette was the most common form of tobacco smoked by the study subjects with 77% (24) smokers using it (Figure 3).

Age wise distribution of the study subjects according to the consumption of tobacco indicates that smokeless form of tobacco is the preferred form of tobacco for people of all the ages under study (Figure 4).

Mean age of initiation of tobacco consumption was 22.62 years with SD of 7.71 years. The most common age of initiation of tobacco consumption amongst the study subjects was 10-20 years with 53.73% (108) of total users beginning consuming tobacco in that age (Figure 5).

The most common reasons for starting tobacco consumption as reported by study subjects were for experiment (40.30%) and due to peer pressure (35.82%), while only 4.98% of them started tobacco consumption for the purpose of style. Other reasons for starting tobacco consumption were found to be for time pass, to relieve constipation.

Only 37.81% of total tobacco consumers had made an effort to quit the habit. 43.78% of total tobacco users plan to quit in the future and 6.47% of them had quit at the time of interview.

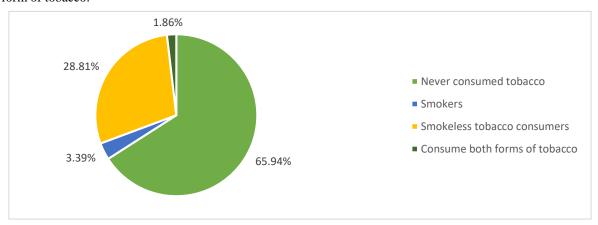


Figure 1: Distribution of study subjects according to the form of tobacco consumption (N=590).

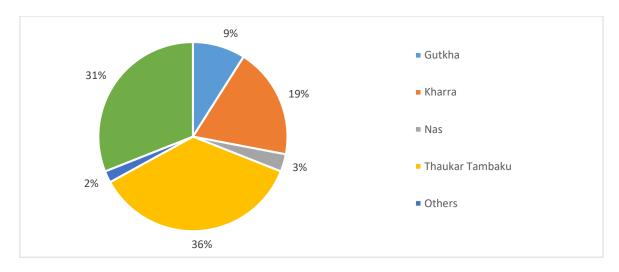


Figure 2: Distribution of smokeless tobacco consumers based on the type of tobacco consumed (N=181).

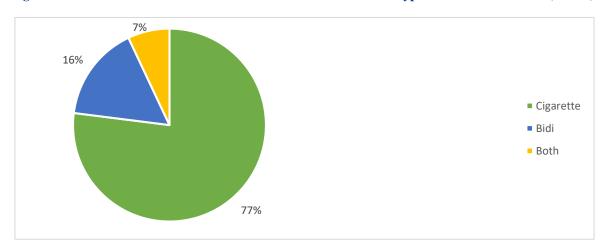


Figure 3: Distribution of smokers based on form of tobacco smoked (N=31).

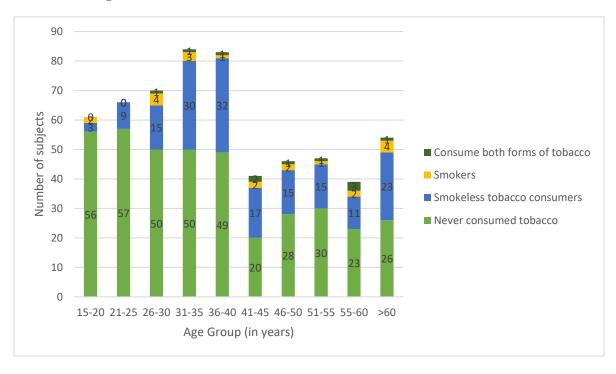


Figure 4: Age-wise distribution of study subjects based on the form of tobacco consumed (N=590).

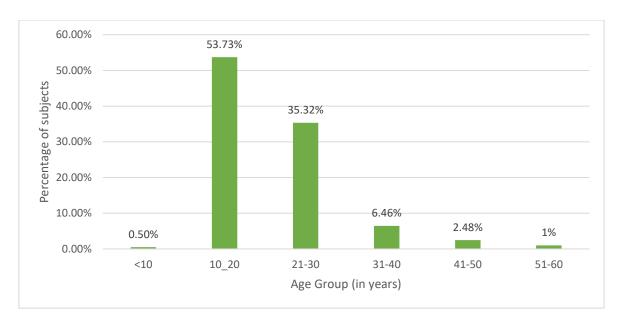


Figure 5: Age at initiation of tobacco consumption (N=201).

# **DISCUSSION**

The survey reaffirmed the high (49.33%) prevalence of tobacco consumption among male study subjects and low (8.22%) prevalence among female study subjects. These proportional differences are similar to the results of studies carried out by Sarkar et al and Farooqui et al.<sup>5,6</sup> Also, the results of national family health survey IV carried out in 2015-16 shows that tobacco use is much more prevalent among men than among women in the age group of 15-49, 44.5% of men, compared with 6.8% of women use some form of tobacco.<sup>7</sup>

The prevalence of tobacco consumption was highest in the middle-aged subjects between 31-40 years of age. Sarkar et al found that prevalence of current tobacco users was highest in the age group of 45-54 years accounting to about 88.6%. Islam et al and Joshi et al observed that the prevalence of tobacco chewing increases with age. Probacco chewing prevalence was almost 10% in the age group of 13-17 years, which rose to 51.3% among 17-19 years. It was found highest in 45-55 years of age group (76.1%), followed by 56.6% in 35-45 years of age.

A high majority of tobacco consumers interviewed in the study used smokeless form of tobacco with smokers being a minority. A similar finding was reported in a study done by Gupta et al.<sup>4</sup> Also the findings of the global youth tobacco survey 2019 were consistent with the study reporting that, smoking is the predominant form of tobacco use in the developed countries, whereas in the developing countries smokeless tobacco is equally prevalent.<sup>10</sup>

As per this study among chewers, thaukar tambaku was most commonly used, while cigarette was most

commonly smoked by smokers. While Gupta et al reported that among males commonly used smokeless form of tobacco was khaini-38.58% and gutka-48.35%. In smoking form, cigarette smokers were 4.32% while bidi smokers were 8.75%.<sup>4</sup> This variation could be due to difference in the region where the studies are conducted.

The average age of initiation of tobacco consumption was 22.62 years which is consistent with the studies of Joshi et al.<sup>9</sup> While, Ayyappa et al reported that the age of initiation was below 18 years.<sup>11</sup> Raval et al reported the age of initiation of tobacco consumption to be below 10 years of age.<sup>12</sup> The difference may be due to difference in the region where the study has been carried out and also because these studies were primarily based on children in rural areas.

The study pointed out that the curiosity to experiment and peer pressure were the major reasons why people began consuming tobacco. These findings are consistent with the studies conducted by Ayyappa et al and Gupta et al.<sup>4,11</sup> There was an increasing concern regarding the usage of tobacco among our youth who succumb to the habit due to peer pressure. Thakur et al also reported similar findings.<sup>13</sup>

Tobacco consumers when asked if they wanted to give up the habit about half of them (43.78%) said they did which was similar to the findings of Ayyappa et al.<sup>11</sup> Around 37.81% of all tobacco users stated that they had attempted to quit. This high percentage suggested the fact that they were aware that the use of tobacco is harmful and should be stopped.

These facts had to be carefully considered when devising public policy measures against tobacco consumption.

#### Limitations

All the limitations inherent in a cross-sectional study.

# **CONCLUSION**

The findings of this study suggests that the habit of tobacco consumption is more prevalent in males with smokeless form of tobacco being the most common form of tobacco consumed. Also, most subjects confessed that they fell prey to the habit due to peer pressure. Thus, this knowledge of the prevalence and pattern of tobacco consumption helps identify high-risk groups and their behaviour which can be used to design innovative strategies targeting the high-risk groups to prevent development of tobacco consumption in that population in the first place and also to curb tobacco consumption by those who are currently tobacco users. Meanwhile, the finding that around half of the subjects expressed their desire to quit the habit in future and a little less than half of the total subjects had even attempted to quit is heartening and this finding can be used to incorporate motivation and incentives in the strategies to help tobacco users quit the habit by themselves.

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Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

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