An epidemiological study on tobacco use in urban Shimoga, Karnataka

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ABSTRACT

Background: Tobacco is commonly smoked or chewed or inhaled. Smoking is a leading cause of many non-communicable diseases (NCDs) as well as has significant adverse effects on pregnancy. About 1.3 billion people worldwide smoke, and the number of smokers continues to rise. More than 40% of the world's smokers live in just two countries, i.e. China and India. India only has around 10% of world's smokers. **Objectives:** To assess the prevalence of use of different forms of tobacco in urban population of Shimoga. **Materials and Methods:** A cross-sectional study was conducted in urban Shimoga study was conducted during February 1, 2016, to July 30, 2016, for 6 months. Data were collected from household members aged 15-64 years. The calculated sample size was 2000. Participants were interviewed using a pre-structured and pre-tested questionnaire adapted from the WHO Steps I and II, approaches for NCDs risk factors surveillance, after modifying to suit the local requirements (questions about tobacco use were considered for the study). **Results:** The prevalence of current smoking in the free-living population of urban city was 15.3%; among them, almost all subjects were daily smokers (prevalence - 15.2%). The prevalence of daily smoking habit was 30.1% among male users. The study revealed that 17.7% of the subjects were current oral tobacco users, while a few were former chewers (0.4%). **Conclusion:** This community-based study demonstrated high prevalence of tobacco use among productive population of urban Shimoga.

KEY WORDS: Smoking; Tobacco Use; Non-communicable Diseases; Risk Factors

INTRODUCTION

Tobacco is commonly smoked or chewed or inhaled. Smoking is a leading cause of many non-communicable diseases (NCDs) as well as has significant adverse effects on pregnancy. Chewing of tobacco is also a leading cause of oral cancer. About 1.3 billion people worldwide smoke, and the number of smokers continues to rise. Among these, about 84% live in developing and transitional economy countries. Tobacco is the fourth most common risk factor for disease and the second major cause of death worldwide. It is currently responsible for the death of one in ten adults worldwide (about 4.9 million deaths each year).[1] In fact, the single most important lifestyle factor as a risk for diseases is tobacco use.[2] It is a strong and independent risk factor for cardiovascular diseases among individuals living in high-incidence populations where there is a significant background of coronary and peripheral atherosclerosis.[3] Globally, tobacco accounts for 27.8% of all cardiovascular deaths, 13.6% of all lung cancer deaths, 6.6% of upper aerodigestive cancer deaths, 6.6% of other cancer deaths, 27.2% of deaths due to chronic obstructive pulmonary disease, and 12.8% of other respiratory deaths.[4] More than 40% of the world's smokers live in just two countries, i.e.m China and India. India only has around 10% of world's smokers. Tobacco is one of the major causes of deaths and diseases in India, accounting for over eight lakh deaths every year (one-fifth of the worldwide tobacco deaths).[4] The variety of forms of tobacco use is unique to India. Apart from the smoked forms that include cigarettes, bidis, and cigars, a plethora of smokeless forms of consumption exist and they account for about 35% of the total tobacco consumption.[2]

Hence, a community-based study on tobacco use in Shimoga city among 15-64 years of population was undertaken, with the intention that the results of this study will provide necessary inputs for effective NCD control in this region.

Objective

To assess the prevalence of use of different forms of tobacco in urban population of Shimoga.

MATERIALS AND METHODS

An observational, community-based, cross-sectional study was conducted in urban Shimoga. Kote and old Thirthahalli road area wards were selected by simple random sampling method. The study was conducted during February 1, 2016, to July 30, 2016, for 6 months after getting clearance from the Institutional Ethical Committee. Data were collected from household members aged 15-64 years, who are residents of the study area (study subjects). With 5% prevalence of tobacco use (according to previous nationwide study), the calculated sample size is 1900, for our convenience we have made it 2000. There are around 429 households (with 4000 population) come under the study area; we were visited each and every household in the area and collected the information from people between age group of 15-64 years (as a part of intern training and family studies); among the collected data, 2000 (sample size) data were taken randomly and analyzed. Help of interns and postgraduates of the department was taken to collect the data (it is also a part of their urban field training). Permission of the required authority was taken.

All subjects in the sample were informed about the purpose of the study. After obtaining the written informed consent, they were interviewed using a pre-structured and pre-tested questionnaire adapted from the WHO Steps I and II, approaches for NCDs risk factors surveillance, after modifying to suit the local requirements (questions about tobacco use was considered for the study).[5]

Step 1: Information on sociodemographic variables and smoking and smokeless forms of tobacco was collected.[6]

Data were analyzed by Excel spreadsheet; results are documented in proportions and percentages with appropriate statistical tests.

RESULTS

Sociodemographic Factors

Total participants in the study were 2000, comprised 1000 males and 1000 females (Table 1). Majority (78.5%) of the subjects were belonging to Hindus, followed by Muslims (20.6%) and Christians (0.9%). Majority of the participants

were literates (83.3%), while a few were illiterates (16.3%). Among the literates, more than a half of the participants were studied up to pre-university course and above (Table 3). Most of the participants were homemakers (32.5%), followed by unskilled workers (21.5%) and semiskilled (1.8%) workers.

Smoking Tobacco

The prevalence of current smoking in the free-living population of urban city was 15.3%; among them, almost all subjects were daily smokers (prevalence-15.2%). The prevalence of daily smoking habit was 30.1% among males, but the same was almost nil among females (0.2%). Only a few participants were former smokers (0.6%) and all of them were men (Table 1). The mean age of initiation of smoking among men was 23.4 years. Among daily smokers, the mean duration of smoking was 23.1±14.9 years among men.

Table 1: Current smoking status among subjects

Smoking status	Men number (%)	Women number (%)	Total number (%)
Daily	301 (30.1)	2 (0.2)	303 (15.2)
Occasionally	4 (0.4)	0	4 (0.2)
Never	683 (68.3)	998 (99.8)	1681 (84.1)
Past smokers	12 (1.2)	0	12 (0.6)
Total	1000 (100)	1000 (100)	2000 (100)

Table 2: Types of smoking tobacco use

Types	Men number (%)	Women number (%)	Total number (%)
Bidis	82 (27.2)	0	82 (27)
Cigarette	211 (70.1)	2 (100)	213 (70.2)
Pipes	8 (2.7)	0	8 (2.6)
Total	301 (100)	2 (100)	303 (100)

Table 3: Current smokeless tobacco use in men and women

Smoking status	Men number (%)	Women number (%)	Total number (%)
Daily	288 (28.8)	68 (6.8)	356 (17.8)
Occasionally	2 (0.2)	0	2 (0.1)
Never	704 (70.4)	930 (93)	1634 (81.7)
Past users	6 (0.6)	2 (0.2)	8 (0.4)
Total	1000 (100)	1000 (100)	2000 (100)

Table 4: Types of smokeless tobacco use

Types	Men number (%)	Women number (%)	Total number (%)
Gutka	119 (41.7)	0	119 (33.8)
Chew tobacco	169 (58.3)	68 (100)	237 (66.2)
Total	288 (100)	68 (100)	356 (100)

Prevalence of smoking was found to be highest in the age group of 55-64 years (33.7%), followed by 26.7% in 45-54 years and 22.4% in 35-44 years. Prevalence of smoking was least in the age group of 25-34 years (7.9%). Increase in the prevalence of smoking as age increased among participants was found highly significant ($P < 0.001$). Regarding type of smoking, the data revealed that the habit of using cigarette (70.2%) was more than bidis (27%) and pipe (2.6%) (Table 2). Average frequency of smoking among daily smoking men was 13.8/day.

Smokeless Tobacco

The study revealed that 17.7% of the subjects were current oral tobacco users, while a few were former users (0.4%). Prevalence of daily smokeless tobacco use was 17.8%; among the daily users, the prevalence was more among males (28.8%) than females (6.8%) (Table 3).

The most common form of smokeless form of tobacco using was chewing tobacco (tobacco twig) (66.2%), followed by gutka (33.8%) (Table 4). The mean age of initiation of smokeless form of tobacco was 24.2 ± 7.9 years. Among daily users, the mean duration of using smokeless tobacco was 24.8 ± 14.9 years among participants. Average frequency of using oral tobacco was 7/day. Overall, the prevalence of consumption of smokeless tobacco increased with age and declined only in the 55-64 years age group. Prevalence of consumption of smokeless tobacco was more in the age group of 45-54 years (23.6%), while it was found to be least in the age group of 15-24 years (17.7%).

DISCUSSION

There is a large body of evidence from prospective cohort studies regarding the beneficial effect of smoking cessation (tobacco cessation) on coronary heart disease mortality. A 50-year follow-up of British doctors demonstrated that among ex-smokers, the age of quitting has a major impact on survival prospects; those who quit between 35 and 44 years of age had the same survival rates as those who had never smoked.[2] The risk factors of today are the diseases of tomorrow. Identifying these risk factors in populations occupies a central place in the surveillance system because of the importance of lag time between exposure and disease. Therefore, public health strategies have to be driven by the motive of identifying risk factors in populations, and countries need to know the profile of risk factors of populations in different settings. 15.3% of urban men were smokers; among them, more than 90% were daily smokers. Smoking was more prevalent among elderly participants and in higher socioeconomic status. Prevalence of chewing form of tobacco was 17.8%; it was more prevalent among men compared to women.

Prevalence of smoking in our study was 15.2%. This finding is supported by the multicenter study conducted in Chandigarh, Delhi, Kanpur, and Bengaluru (15.6%).[7] Prevalence of smokeless tobacco was 17.9% in our study. The study conducted by Joshi et al. reported more prevalence (32.7%) compared to our study. The present study revealed that prevalence of chewing form of tobacco was more seen in older age group of 45-64 years, and this finding is supported by the studies conducted by Joshi et al. and Sen and Basul.[8,9] Tobacco usage habit, both form, smoking tobacco (male - 30.4% and women - 0.2%), and smokeless tobacco (male - 29% and women - 6.8%) were high in males in the present study. This can be attributed to the fact that in the Indian population, mostly men indulge in this unhealthy practice. This is also reported in other studies by Joshi et al., Meenakshi et al., Gupta and Phatak, Thankappan et al., Sugathan et al.[8,10-14] Our study showed that prevalence of tobacco use was more in the less-educated population. This high level of prevalence could be because of low level of awareness among these people. This finding is supported by the study conducted in Thiruvananthapuram, Kerala. The findings clearly indicated that the respondents belong to higher socioeconomic background had higher rate of prevalence of smoking. These findings are in contrast with the finding of the study conducted by Sugathan et al.[12] This may be due to more number of participants in higher socioeconomic status group in our study.

Strength of our study is that it is a community-based study and comprehensive survey of risk factors of NCDs using WHO stepwise approach - Step 1 questionnaire was used to collect data after modifying to suit the local requirements. Only limitation of our study is that even though the households are randomly selected after collecting data from all the households in the selected areas, in each households subjects are selected according to need (to match age group), i.e. purposive sampling was done.

CONCLUSION

The present cross-sectional study (community-based) clearly demonstrates the high prevalence of tobacco use among the productive population of urban Shimoga. Strengthen the evidence for NCD prevention and control by assessing its risk factors through NCD risk factors surveillance. A nationwide initiative has to be started to create awareness among people regarding the harmful effects of tobacco use. More focus should be given to adolescents and young adults discourage them from starting these harmful risk factors.

The people in the community without whose support the study would not have been possible.

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