Student Original Article

Patterns of Tobacco Use in Rural and Urban Populations of Jhunjhunu District, Rajasthan

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Abstract

Background: Tobacco is the single most preventable cause of death in the world today. The objective of the present study was to assess the pattern of tobacco use, its ill health-effects and study the rural-urban variations in areas of district Jhunjhunu, Rajasthan.

Methods: A cross-sectional community-based study was performed, 150 subjects from urban and 150 from rural area were studied. A pre-tested pre-structured questionnaire was used to assess the type and pattern of tobacco consumption, quit rates, self-reported medical and objective oral findings.

Results: Tobacco usage in rural and urban areas was 38.67% and 22%, respectively. Bidi and zarda were most commonly consumed forms of tobacco in rural areas, while cigarettes and gutka were more popular in urban area. Smokeless form of tobacco consumption was almost equal to smoking rates in rural areas. The commonest age of tobacco initiation was in the second decade of life in both urban and rural areas. Quit rates were very low (3%). 36.3% tobacco-users self-reported medical symptoms and almost 90% had objective oral findings.

Conclusion: The magnitude of tobacco consumption is high in both urban and rural areas with definite rural-urban differences and associated ill health effects.

Key words: Smoking; smokeless tobacco; cross-sectional survey; health

Introduction

Although tobacco deaths rarely make headlines, tobacco kills one person every six seconds. Tobacco kills a third to half of all people who use it, on average 15 years prematurely [1].

Tobacco epidemic death toll reached 100 million in the 20th century. Currently, it causes 5.4 million deaths every year. By 2030, the figure will rise to 8 million deaths every year and 80% of these tobacco related deaths will be in developing countries. The economic burden attributed to tobacco use is equally devastating. In addition to the enormous public health costs of treating tobacco-related diseases, tobacco kills people at the height of their productivity, depriving families of bread-earners and nations of a healthy workforce. Tobacco users during their lifetime also have less productivity [1].

The compelling need to save many lives from falling prey to tobacco addiction and the urgent imperatives of avoiding the huge health, economic, social, environmental burdens that would be imposed by tobacco on a nation like India, that aspires for accelerated development forms the reason of this work. The objective of the study was to assess the pattern of tobacco use, its ill-effects on health and also study the rural-urban variations in areas of district Jhunjhunu, Rajasthan.

Methods

A cross-sectional study was undertaken over a period of 3 months in District Jhunjhunu, Rajasthan. A total of 300 people were interviewed- 150 rural people from Bangothri khurd, Bangothri kalan and Chaapra villages of district Jhunjhunu; and 150 people from urban areas of Pilani. It was a community based study with convenient sampling and males over 20 years of age were included in the study (only males were included for the study since a pilot survey conducted revealed a very low prevalence of smoking among the females). A pre-

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structured pre-tested standardised questionnaire was used to interview the subjects. The questionnaire included general demographic information, details of tobacco usage, and medical and dental problems of the subjects. Current daily smokers were defined as those who were currently smoking tobacco daily in the form of cigarettes, bidis (hand-manufactured cigarettes consisting of tobacco wrapped in a temburini leaf), hookah (Indian water pipe), chillum, or any other smoked form. Similarly, current daily smokeless tobacco users were defined as those who were currently using chewable tobacco products: khaini (tobacco-lime mixtures), gutkha (tobacco with betel nut, catechu, lime, and flavourings), or zarda paan (betel quid with tobacco) daily. Information was gathered on the age of initiation of smoking and the self-reported quantity of specific tobacco products consumed by the current daily users. Special emphasis was laid on the form of tobacco which was used by the subjects and the duration of consumption was noted. The number of cigarettes/bidis being consumed daily were also noted so as to quantify tobacco consumption in terms of pack years. Hookah smoking, however, could not be quantified. A symptom analysis and an oral examination was performed for each of the respondent. Data analysis was performed using SPSS version 16 and all the results are presented in percentages.

Results

The age of the study group is depicted in table 1.

Table 1- Age distribution of study group (n=300)

Age Group (years)	Number (%)
20-30	102 (34.1)
31-40	89 (29.7)
41-50	66 (22)
51-60	17 (5.5)
>60	26 (8.8)

Subjects with graduation or higher education were 36.3%, 20.9% had received secondary education, 24.2% subjects had received only primary education while 18.7% were illiterate. Usage of tobacco in any form (smoking as well as smokeless) in the present study was found to be 30.33%. Subjects who used tobacco in the form of bidi/cigarette were 52.7%, who used smokeless tobacco in any form such as gutka/zarda were 36.3% while 11% used both forms of tobacco. Interestingly, majority of the subjects had started tobacco usage in the second decade of their life (58.2%).

According to the data collected, 22% of the subjects residing in urban areas were tobacco users as against 38.67% in the rural areas.

Smoking bidi in rural areas and cigarette in urban areas is common, whereas zarda usage is very high in rural areas while gutka usage is high in urban areas. The largest group in the study was constituted by those who used tobacco in multiple forms (22%). The magnitude and pattern of tobacco usage is illustrated in table 2.

About 30% of smokers (rural as well as urban) had consumed more than 20 pack-years of cigarettes/bidis, signifying that a sizeable number of subjects had the cumulative burden for tobacco-related morbidity.

The percentage of subjects who tried to quit but failed was 49.5% while 40.7% never tried to quit. There were only 9 subjects (3%) who were past smokers i.e. had quit tobacco successfully.

Among tobacco users, 36.3% had medical symptoms, out of which 6.6% of the subjects had complaints of heart-burn, 3.3% had fatigue, 2.2% complained of loss of appetite while 19.8% reported more than one symptom. Oral examination revealed tobacco stains in 86.8%. Other oral findings observed were oral ulcers in 25.9%, reduced mouth opening in 15.3% and 10.4% had reddish-white patches. Both education and occupation were found to have no relationship with tobacco use in the study.

Discussion

Tobacco usage in men was 30.3% as observed in this study and is similar to the median prevalence of 30.6% reported in a cross-sectional household survey from 26 states of India [2,3].

In India, over half of men (57.0 %) in the age group of 15-49 years use tobacco in some form and over one-tenth (10.9 %) of women in this age group also use tobacco. These are findings of the third round of the National Family Health Survey (NFHS-3), which was

Table 2- Rural-urban variations

	Rural (n=150)	Urban (n=150)
Current Tobacco users	58 (38.67)	33 (22)
Age of initiation (years)		
10 to 20	33 (56.9)	20 (60.6)
21 to 30	18 (31)	12 (36.4)
31 to 40	6 (10.3)	Nil
41 to 50	1 (1.7)	Nil
>50	Nil	1 (3)
Form		
Smoke	27 (46.5)	21 (63.6)
Smokeless	23 (39.6)	10 (30.3)
Both	8 (13.7)	2 (6)
Type of tobacco product		
Bidi	15 (25.9)	2 (6.1)
Cigarette	3 (5.2)	16 (48.5)
Hookah	3 (5.2)	Nil
Gutka	6 (10.34)	8 (24.2)
Zarda	14 (24.1)	2 (6.1)
other forms	2 (3.4)	Nil
more than one	15 (25.9)	5 (15.1)
Average number of bidis smoked per day	18.7 Range- 2-80	17.3 Range- 4-24
Average number of cigarettes smoked/day	4.1 Range 2-10	8.9 Range- 1-20
Mean zarda/gutka/khaini packets consumed/day	4.4 Range- 1-15	4.1 Range 1-15
Oral findings		
Stains	13 (22.4)	19 (57.6)
ulcer/white patch	1 (1.7)	Nil
more than one	36 (62.1)	11 (33.3)

(Figures in parentheses indicate percentages)

conducted in 2005-06. Considering the type of tobacco use practiced, one third of men smoke and over one third (38.1 %) use smokeless tobacco or pan masala. According to the present study, smoking is the most prevalent form of tobacco used in both urban and rural areas. Smoking bidi and consuming zarda in rural areas while cigarette and gutka in urban areas was notably common in this study. Cost of bidi is nearly one-tenth the cost of cigarettes and this could be the reason for its popularity among rural population. Gutkha and khaini, the two common smokeless tobacco products, are also available at very low prices. An important finding of the study was that the percentage of tobacco users who consumed more than one form of tobacco in rural areas was twice that of urban areas. Thus the rural population becomes a high-risk group for the development of diseases associated both with smoked and smokeless forms of tobacco. The above findings are consistent with another study [4].

The risk of oral cancer increases with the number of cigarettes smoked each day and the number of years that the person has been smoking. As evident in the present study, 28.6% tobacco users in rural area and 30% in urban area have risk of developing carcinoma (pack years $\geqslant 20$). Cigarettes are not the only oral habit that can cause oral cancer, all tobacco products, such as smokeless/spit tobacco, cigars, and pipes are associated with oral cancer. The type of tobacco product will also dictate where the oral cancer can be located in the mouth. For instance, smokeless tobacco is linked to cancer of the cheek and gums.

Bidi, the hand rolled form of tobacco, wrapped in the dried tendu leaf, was the most common smoking product in this study especially in the rural population. This is quite consistent with results of the earlier studies [3,5,6]. Hookah smoking, the more traditional way in which tobacco is kept in an earthen pot (chillum) along with the burning coal and smoked through a water container with the help of a long pipe was present in about 3.3 % of rural smokers. Apparently, this traditional form of smoking is largely unused in the urban population. Even in the villages, the hookah is gradually giving place to bidi and/or cigarette smoking.

Similar to the present study, people with low income were reported to be more than twice as likely to smoke in the United States [7].

On an average the studied population consumed 10 cigarettes or gutka packs per day. The low prevalence of systemic health effects can be attributed to the fact that only symptom analysis was done based on self-reporting and no objective evaluation by way of investigations was carried out as part of the study. It is noteworthy that the subjects did report that they suffer from health problems like gastric discomfort, fatigue, loss of appetite. However, objective evidence of oral ill-effects was noted in the present study in form of dental stains, oral ulcers, reduced mouth opening (due to the formation of fibrous bands) and reddish white patches. The reddish white patches in the oral cavity are considered to be precursors of oral carcinoma. Smokers are exposed to over 4000 toxic substances in cigarette smoke and over 25 of these are known human carcinogens.

In the present study, 49.5% of people tried to quit smoking but resumed the habit whereas 3% had successfully quit the habit.

The present study reveals a high burden of smoking in the rural and urban areas and associated health-related ill-effects. There are marked urban-rural variations as is evident from the present study. It will be prudent to incorporate these variations along with other geographic variations which may co-exist while planning national strategies for tobacco cessation and control of several non-communicable diseases which are a direct or indirect consequence of tobacco consumption.

Key Points

- The burden of tobacco usage in any form (smoking as well as smokeless) in the present study is high with 30.33% subjects consuming tobacco.
- Subjects who used tobacco in the form of bidi/cigarette were 52.7%, who used smokeless tobacco in any form such as gutka/zarda were 36.3% while 11% used both forms of tobacco.
- Majority (58.2%) of the subjects started tobacco use in the second decade of their life.
- There are marked rural-urban variations. Bidi and zarda consumption was remarkably noted in the rural areas as compared to cigarette and gutka consumption in urban areas.
- Oral ulcers, stains and white patches were also widely prevalent in the smokers.

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