Original Article

A STUDY ON PREVALENCE AND PATTERN OF SMOKING AMONG RURAL POPULATION IN DEHRADUN DISTRICT OF UTTARAKHAND

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ABSTRACT

Background: Tobacco is a major public health problem all over the world with 82% of the world's 1.1 billion smokers residing in low and middle income countries. **The government of India has taken several measures, including legislation to control tobacco intake.** Numerous surveys conducted worldwide and in India show a greater prevalence of smoking tobacco use among the less educated, illiterate and rural population.

Objective: Objective of this study was to assess the prevalence and factors influencing smoking tobacco use among rural Community of Dehradun.

Methods: Present study was conducted in the rural field practice area of Department of Community Medicine, Himalayan Institute of Medical Sciences, Dehradun. The households were selected by systematic random sampling and all the smoking tobacco users in the surveyed house were personally interviewed by using a pre-structured and pretested schedule.

Results: Overall 663 current smoking tobacco users (Males-28.4%, Female-7.6%) were interviewed. Prevalence of smoking tobacco increased with advancing age and the difference was statistically significant (χ^2=18.938; p<0.05). Peer Pressure (31.2%) was the major reason for the initiation of smoking tobacco followed by enjoyment (20.0%) in the surveyed population.

Conclusion: In the study smoking was found to be more prevalent in males as compared to females. Smoking also showed a consistent rise with the increasing age group and was found to maximum in the older age group. The predominant smoking tobacco product used was bidi followed by cigarette.

Key words: Tobacco use, Smoking, Prevalence, Initiation

INTRODUCTION

The tobacco epidemic still remains one of the biggest public health threats and the leading cause of preventable mortality the world over. There are more than one billion smokers in the world.[1]The majority of current smokers are male, however, smoking among women is increasing. Almost 35% of men in developed countries and 50% of men in developing countries smoke; while 22% of women in developed countries and 9% of women in developing countries smoke.[2] More than 80% of the world's smokers live in low- and middle-income countries.[3] Every day, 80,000-100,000 young people around the world become addicted to tobacco.[4]

Cigarette smoking and use of other tobacco products is increasing in the developing world due to rise of tobacco industry and population growth. Nearly six million people die each year from tobacco use and exposure to second hand smoke worldwide.[5] If action is not taken to check the epidemic, the figure will reach eight million by 2030 and most of them will take place in developing countries.[6] Smoking also increases the incidence of clinical tuberculosis, is a cause of half the male tuberculosis deaths in India, and of a quarter of all male deaths in middle age.[7] GATS India revealed that more than one-third (35%) of adults in India use tobacco in some form or the other.[8] Among them 21% adults use only smokeless tobacco, 9% only smoke and 5% smoke as well as use smokeless tobacco.[8] Prevalence of smoking among males is 24%, whereas the prevalence among females is 3%.[8] Study of smoking pattern among middle age and elderly has received poor attention despite its proven implications on health. Hence the present study was conducted to know the prevalence and pattern of tobacco smoking in a rural population of Dehradun.

METHODS

The present cross sectional study was conducted in the rural field practice area of Department of Community Medicine, Himalayan institute of Medical Sciences, Dehradun. The study population comprised of all persons more than 10 years belonging to the families registered with the field practice area of the Department of community medicine. Every 3rd household was selected by systematic random sampling in the area and all individuals consuming smoking form of tobacco in the selected household was interviewed.

The study was approved by institutional ethical committee and informed verbal consent was obtained from the study subjects. A pre-structured and pre-tested schedule was used for collection of relevant data pertaining to smoking form of tobacco. The socio-demographic variables collected were age, sex, educational attainment and occupation of the participant and income of the family. Subjects were interviewed about their smoking status. They were classified as

Current smokers: Smoked regularly for within 1 month prior to examination.

Non smokers: Never smoked even once in their lifetime.

Ex-smokers: Stopped smoking more than 1 month prior to examination.

Details on the different forms of smoking product used, including cigarette, bidi and hukkah were obtained from the smokers. Informed consent was obtained from the study subjects and responses were recorded on data recording form. Information thus obtained was entered into SPSS 17.0 version and Non parametric tests like Chi-square test was applied to find out the association between the variables. A p value of less than 0.05 was considered as significant.

RESULTS

A total of 663 subjects was found to be currently smoking giving an overall prevalence of 21.1% in the present study.559 out of 663 smokers were found to be exclusive smokers i.e. using only smoking form of tobacco while 104 subjects were mixed users i.e. using both smoking and smokeless form of tobacco thereby giving a prevalence of smoking only and combined use as 17.7% and 3.3% respectively.

Table-1 shows that among 663 current smokers, 579 were males and 84 were females. The male and female smoking prevalence was found to be 28.4% and 7.6%. More smokers were found to be males than females and the difference was found to be statistically significant ($p<0.05$).

Table-1: Prevalence of tobacco use by form of tobacco

Tobacco Use	Male (n=2041)	Female (n=1104)	Total (n=3145)	'p value'
Smoking	579 (28.4)	84 (7.6)	663 (21.1)	**0.0004***
Smokeless	345 (16.9)	89 (8.1)	434 (13.8)	

(Parenthesis given in bracket is percentage) (*=statistically significant)

Table-2 show the age specific prevalence of current smoking which reveals that the prevalence of smoking only increased steadily from 9.4% in 20-29 years age group to 27.5% in 50-59 years age group where it was found to be maximum and then decreased. Those in the age group of 20-29 years are 1.43 times more likely than those in the age group of 10-19 years to use both forms of tobacco. Similarly those in the age group of 60 years and above are roughly 6 times more prone to use both forms of tobacco than those in the age group of 10-19 years. In general it was ob-

served that with increasing age, use of smoking only and both forms of tobacco also increased.

Majority (17.6%) of the current smokers smoked bidi followed by cigarette (3.4%) while only 0.06% were found to be users of Hookah. (Table-3)

It is evident from Table-4 that more than half (56.1%) of the current smokers started smoking at or before 19 years of age while less than half of the subjects (43.9%) initiated this habit after the age of 19 years and it was found to be statistically significant.

Table-2: Age specific prevalence of tobacco use

Age (in yrs)	No. of persons interviewed	Form of tobacco use			Odds ratio (OR) (95% CI)
		Smoking	Both†	Total	
10-19	731	19 (2.6)	1 (0.1)	20(2.8)	__
20-29	562	53 (9.4)	4 (0.7)	57(10.0)	1.43*(1.12-13.65)
30-39	424	103 (24.3)	14 (3.3)	117(27.6)	2.58 (0.32-20.82)
40-49	449	122 (27.2)	18 (4.0)	140(31.2)	2.80 (0.35-22.34)
50-59	461	127 (27.5)	22 (4.8)	149(32.3)	3.29 (0.42-22.85)
>60	518	135 (26.1)	45 (8.7)	180(34.7)	6.33*(4.11-48.66)
Total	3145	559(17.7)	104(3.3)	663(21.1)	__

(Parenthesis given in bracket is percentage) (*=statistically significant, p<0.05)
†Both means combined tobacco users (smoking as well as smokeless tobacco users)

Table-3: Distribution of current smokers

Smoking product	Male (N=2041)	Female (N=1104)	Total (N=3145)
Cigarette	107(5.2)	0(0.0)	107(3.4)
Bidi	472(23.1)	82(7.4)	554(17.6)
Hookah	0(0.0)	2(0.2)	2(0.06)
Total	579(28.4)	84(7.6)	663(21.1)

(Parenthesis given in bracket is percentage)

Table-4: Current smokers by age of initiation

Age at smoking initiation	Male	Female	Total	p value, χ2, df
<19yrs	338(14.3)	34(6.0)	372(56.1)	P=0.002*
>19yrs	241(41.6)	50(59.5)	291(43.9)	χ^2=9.545,
Total	579(100.0)	84(100.0)	663(100.0)	df=1

(Parenthesis given in bracket is percentage) (*=statistically significant)

DISCUSSION

The prevalence of current smoking in the present study was 21.1%, which is comparable to the findings of GATS Uttarakhand (2009-10) (22.1%) and Narayan et al in Delhi (24.5%).[8,9] However GATS India (2009-10) and Jindal et al reported the prevalence of current smoking to be 14% and 15.6% respectively.[8, 10] A study by Aryal et al in Kathmandu reported current smoking prevalence to be as high as 72.4%.[11]

The prevalence of male smoking and female smoking in the present study was 28.4% and 7.6 % respectively. The male smoking prevalence found in our study (28.4%) is comparable to the male smoking prevalence of 24.3% and 35% found in the GATS India (2009-10) and NFHS-3 (2005-06) respectively.[8,12] However GATS Uttarakhand (2009-10) and NFHS-3(2005-06) reported a much lower prevalence of smoking in females as 3.9% and 1.8% respectively.[8,12] Narayan et al in their study in Delhi found a much higher smoking prevalence among males and females as 45% and 7% respectively.[9]

The prevalence of smoking in our study was found to be 2.6 % in the adolescent group and it increased sharply to 9.4 % in 20-29 years age group and kept on increasing consistently with the increase in age with the highest prevalence (27.5 %) found among those aged 50-59 years and then gradually decreased. Similar trend was observed in a study by Ganesh et al and Joshi et al in their study.[13,14] On the contrary, Narayan et al found increased smoking prevalence among those aged 35-44 years and lowest in those aged 55-64 years.[9]

In the present study, the prevalence of bidi smoking (17.6%) was much higher than cigarette smoking (3.4%), which is comparable to GATS Uttarakhand (2009-10) (19.2% and 4.1% respectively).[8] In GATS India survey (2009-10), the prevalence of bidi and cigarette smoking was reported as 9.2% and 5.7% respectively.[8] On the contrary, Narayan et al in Delhi reported a higher proportion of cigarette use as compared to bidi in their studies.[9] The possible reason for this was that their study were done in urban areas where cigarette smoking is widespread.

The predominant smoking form of tobacco found in the study among both men and women was bidi. Cigarette was the second most common form of smoking tobacco found among males, as there was no female cigarette smokers in our study. This is comparable to the findings of GATS India (2009-10), where bidi was the most common smoking tobacco product followed by Cigarette.[8] The likely reason for this observation is the pricing strategy of these tobacco products. The affordability and easily availability of bidi may be the reason for its use on a large scale, particularly among the poor and the rural population.

In our study, majority (56.1%) of current smokers initiated the habit of smoking at or before 19 years of age which is slightly higher as compared to study done by Bhimarasetty et al where 41.2% initiated it before attaining the age of 19 years.[15] 43.9% of the current smokers had initiated smoking after the age of 19 years which is comparable to the findings of GATS India (2009-10), where 40.3% of the respondents initiated smoking after 19 years.[8]

CONCLUSION

The above study revealed that the prevalence of smoking tobacco use was quite prevalent among the rural population which is a matter of concern and will contribute to the disease burden already existing due to nutrition-related illness and communicable diseases in this section of population. There is evidence from the study suggesting the increasing trend of smoking tobacco use with advancing age thereby implying that tobacco control policies should strategically focus on all age groups particularly on those greater than fifty years of age.

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