

## ORIGINAL ARTICLE

**A cross sectional study on quitting behavior of tobacco use among rural population in Dehradun, Uttarakhand**Danish Imtiaz<sup>1</sup>, Sunil Dutt Kandpal<sup>2</sup>, Ruchi Juyal<sup>3</sup><sup>1</sup>Assistant professor, Department of Community Medicine, SRMS IMS, Bareilly (UP), India, <sup>2</sup>Professor, <sup>3</sup>Associate Professor Department of Community Medicine, Himalayan Institute of Medical Sciences, SRHU University, Dehradun, Uttarakhand

<a href="#">Abstract</a>	<a href="#">Introduction</a>	<a href="#">Methodology</a>	<a href="#">Results</a>	<a href="#">Conclusion</a>	<a href="#">References</a>	<a href="#">Citation</a>	<a href="#">Tables / Figures</a>
--------------------------	------------------------------	-----------------------------	-------------------------	----------------------------	----------------------------	--------------------------	----------------------------------

**Corresponding Author**

Address for Correspondence: Dr. Sunil Dutt Kandpal, Professor, Department of Community Medicine, Himalayan Institute of Medical Sciences, SRHU University, Dehradun-248140, Uttarakhand  
E Mail ID: dr\_sdk\_hiht@yahoo.com

**Citation**

Imtiaz D, Kandpal SD, Juyal R. A cross sectional study on quitting behavior of tobacco use among rural population in Dehradun, Uttarakhand. Indian J Comm Health. 2015; 27, 1: 30-34.

**Source of Funding :** Nil **Conflict of Interest:** None declared

**Article Cycle**

**Submission:** 22/10/2014; **Revision:** 10/12/2014; **Acceptance:** 12/12/2014; **Publication:** 31/03/2015

**Abstract**

**Background:** Nearly 275 million adults use tobacco in India, which contributes substantially to potentially preventable morbidity and mortality. Awareness towards tobacco is increasing steadily but its role towards cessation is questionable. There is little evidence available about quitting behavior in the Uttarakhand region.

**Aims & Objectives:** To assess the quitting behavior among current tobacco users in a rural population of Dehradun. **Material and Methods:** The study was cross sectional in nature carried out among 993 current tobacco users aged 10 years and above in the field practice area and quitting behavior was assessed using a pretested and predesigned questionnaire. **Result:** Of the 993 Current tobacco users, 38% and 40% of the current smokers and current smokeless tobacco users respectively had attempted to quit smoking and smokeless tobacco use in the past 12 months. 54.3% of the smokers wanted to quit smoking with majority of male smokers (56.3%) willing to quit smoking compared to only 40.5% of female smokers. 36.0% of the smokeless tobacco users wanted to quit smokeless tobacco use where in contrast more female smokeless tobacco users (39.3%) wanted to quit smokeless tobacco compared to 33.3% of males. **Conclusion:** Previous quit attempts were found to be more among males compared to females. The desire to quit smoking tobacco was also found to be more among males as compared to female smokers. More females showed desire to quit smokeless tobacco compared to males.

**Key Words**

Tobacco; Quitting

**Introduction**

Tobacco use is one of the leading preventable causes of premature death, disease and disability around the world. An estimated 4.9 million deaths occurring annually can be attributed to tobacco use. This figure is expected to rise to about 10 million by the year 2020, if the current epidemic continues and more than 70% of these deaths are expected to occur in developing countries (1).

Several strategies have been shown to reduce tobacco use. However, more than 50 years after the

health dangers of smoking were scientifically proven, and more than 20 years after evidence confirmed the hazards of second-hand smoke, few countries have implemented effective and recognized strategies to control the tobacco epidemic. International efforts led by WHO resulted in rapid entry into force of the WHO Framework Convention on Tobacco Control (WHO FCTC), which has 168 signatories and more than 150 Parties. Achievement of tobacco control goals will require coordination among many government agencies, academic institutions, professional associations and civil society

organizations at the country level, as well as the coordinated support of international cooperation and development agencies.

As per India's Cigarette and Other Tobacco Product Act 2003 (COTPA), selling tobacco to minors or selling of tobacco by minors (under the age of 18) is legally forbidden and violation of the same is a punishable offence. Same applies to selling of tobacco containing items within 100 yards radius of any educational Premises (2). Awareness towards hazardous health effects of tobacco has increased with time but its role in tobacco cessation remains questionable. Knowledge regarding quitting behavior is necessary for effective formulation and implementation of tobacco cessation strategies. Keeping this in mind a study was undertaken to find out the quitting behavior among current tobacco users aged 10 years and above in a rural population of Dehradun.

### Aims & Objectives

To assess the quitting behavior among current tobacco users in a rural population of Dehradun.

### Material and Methods

It was a cross sectional study carried out among the families registered with the rural field practice area of Department of Community Medicine, Himalayan institute of Medical Sciences, Dehradun. The households in the study area was selected using systematic random sampling technique and all the current tobacco users aged 10 years and above in the selected household were identified by a household survey in every third house in the study area and data was collected by interview method using a pre-designed and pre-tested questionnaire after getting approval from the institutional ethical committee and obtaining verbal consent from the study participants. The data was collected for a period of six months i.e. from May to October 2011.

Data was collected on quit attempts and related factors such as desire to quit in the last 12 months by the current tobacco users i.e. smokers and smokeless tobacco users. Data collected was entered in Microsoft Excel and Percentages and Non parametric tests was used to find out the association with level of significance set at  $p < 0.05$ .

#### Operational Definition:

**Current tobacco users:** Current tobacco users (3) was defined as one having used tobacco at least once in the last 30 days preceding the survey.

**Previous quit attempts:** Current tobacco users were asked whether they had intentionally stopped smoking or using smokeless tobacco products for a month or longer in the past one year.

**Desire to quit:** Current tobacco users were asked whether they had any plans or intention to quit smoking or smokeless tobacco use in the year following the study.

### Results

A total of 993 people were identified as current tobacco users in the study of which about 663 were current smokers and 434 were current smokeless tobacco users.

[Table -1](#) shows the current tobacco users by their previous attempts to quit in which 38% current smokers and 40% smokeless tobacco users have attempted to quit in the past twelve months.

[Table-2](#) shows the distribution of current tobacco users by their desire to quit. About 54.3% of the smokers and 36.0% of the smokeless tobacco users wanted to quit smoking and smokeless tobacco use respectively.

It is evident from [table-3](#) that the main reason stated behind the desire for quitting smoking was awareness of health hazards (36.7%), followed by wastage of money (26.7%). The main reason behind the desire for quitting smokeless tobacco was awareness of health hazards (42.0%), followed by bad habit (27.3%).

### Discussion

In the study, 38% of the current smokers had attempted to quit smoking in the past 12 months. Almost an equal proportion of males (38.2%) and females (36.9%) had made an attempt to quit smoking. This is comparable to the findings to the GATS India (2009-10) (4), where overall 38.4% made an attempt to quit smoking out of which 38.3% were males and 38.9% were females. According to GATS Uttarakhand (2009-10) (4), about 30% smokers made an attempt to quit smoking in the past 12 months. Ansari *et al* (5) in their study reported that more than half (55%) of the smokers had attempted to quit smoking in the past one year.

In the present study, the percentage of current smokeless tobacco users who made an attempt to quit smokeless tobacco was 40.0%, as compared to 35.4% and 37.8% found according to GATS India (2009-10) (4) and GATS Uttarakhand (2009-10) (4) respectively. A slightly higher percentage of males (41.1%) had tried to quit smokeless tobacco in the

past 12 months as compared to females (36.0%). According to GATS India (2009-10) (4), about 38.8% males and 29% females had tried to quit smokeless tobacco in the past 12 months.

The percentage of current smokers who desired to quit smoking in our study was slightly higher (54.3%), as compared to 47% and 44.6% found according to GATS India (2009-10) (4) and GATS Uttarakhand (2009-10) (4) respectively. The findings of the study is comparable to International Tobacco Control (ITC) policy evaluation surveys of other Asian countries such as Malaysia (57.8%) and Thailand (6) (40.2%) but it is higher than the studies in Bangladesh (7) and China (8) where the desire to quit was found to be low (10% and 23% respectively). The findings of the present study is in line with Kumar G (2011) (9) and Khan S (2012) (10) study, where nearly half (49.3%) and 59% of the current smokers were willing to quit smoking respectively. Other studies such as Sargent JD (1998) (11) have demonstrated lower prevalence of current smokers (25.7%) who were willing to quit. On the contrary, ITC surveys done in four developed countries (12) (64.7-81.5%) and studies done by Bartwal J (2014) (13) (63.64%-81.5%), Islam *et al* (14) (63.3%), Chatterjee *et al* (15) (67%) and Aggarwal S (2012) (16) (68.75%) have shown higher prevalence of current users who were willing to quit.

The percentage of smokeless tobacco users (34.6%) who desired to quit smokeless tobacco use, was comparable to a study by Raute *et al* (17) who reported that 38% of the smokeless tobacco users had intentions to quit. According to GATS India (2009-10) (4) and GATS Uttarakhand (2009-10) (4) the percentage of smokeless tobacco users who desired to quit smokeless tobacco was higher (46 % and 61.3 % respectively). Joshi U (18) (2010) in their study reported 28.4% of current smokeless users who were willing to quit. Males (33.3%) were less interested in quitting as compared to females (39.3%). On the contrary, according to GATS India (2009-10), 4 males (48.3%) were found to be more interested in quitting smokeless tobacco as compared to females (39.1%).

The most common reason given for desiring to quit smoking and smokeless tobacco use was awareness of health hazards (36.7 % and 42.0% respectively). Kumar G (2011) (9) and Raute *et al* (17) in their studies also mentioned the same reason (67% and 77% respectively) for willingness to quit.

## Conclusion

Previous quit attempts were found to be more among males compared to females. The desire to quit smoking tobacco was also found to be more among males as compared to female smokers. More females showed desire to quit smokeless tobacco compared to males. The findings from this study highlight the need to increase awareness about the health effects of smoking and smokeless tobacco use to encourage quitting, particularly in rural areas, where levels of education and knowledge about health are lower and where health care services are scarcely available.

## Recommendation

On the basis of our study, it is recommended that there is a need to develop tobacco quitting strategies focusing on imparting health education to rural population in order to motivate them to quit tobacco.

## Limitation of the study

One of the limitation of the study is that the responses was elucidated on the basis of interview method which may have influenced the results as disadvantage associated with interview method is that a respondent usually gives what is considered as a socially desirable or acceptable response and not one which is socially embarrassing.

## Relevance of the study

The study was mainly carried out to focus the researcher's attention towards the quitting behavior as proper understanding of the quitting behavior will help in the formulation of effective tobacco cessation strategies which will specifically target those factors which eventually hinder tobacco quitting besides providing the documented benefits of tobacco quitting. Also, there was paucity of the data regarding the quitting behavior in the hill state so, this study provides a baseline data which can be used as a reference for future studies planned in the rural population of Uttarakhand.

## Authors Contribution

DI: Concept, Study Design, Literature search, Data collection, Acquisition of data and analysis. SDK: Concept, Study Design, Drafting and revising. RJ: Concept, Study Design and revising it critically for important intelligent content.

### Acknowledgement

I am thankful to SRHU University and Department of Community Medicine, Himalayan Institute of Medical Sciences (HIMS) for providing me an opportunity to conduct the study.

### References

1. WHO. The World Health Report 2002 - Reducing Risks, Promoting Healthy Life. [Online] Available from: <http://www.who.int/whr/2002/en/> [Accessed 15 Mar 2014].
2. Singh V, Pal HR, Mehta M, Kapil U. Tobacco consumption and awareness of their health hazards amongst lower income group school children in National Capital Territory of Delhi. *Indian Pediatr.* 2007 Apr;44(4):293-5. PubMed PMID: 17468526. [PubMed].
3. Garg G, Bansal R, Goel K. Tobacco use and its correlate factors among adult males in rural area of Meerut- A cross sectional study. *Ind J Comm Health* 2013; 25(3):281-284.
4. Ministry of Health and Family Welfare, Government of India. Global Adult Tobacco Survey: India Report 2009-10. New Delhi, India, 2010. Available from: [http://whoindia.org/EN/Section20/Section25\\_1861.htm](http://whoindia.org/EN/Section20/Section25_1861.htm). [Last Accessed on 2011 Sep 22].
5. El Ansari W, Stock C. Factors associated with smoking, quit attempts and attitudes towards total smoking bans at university: a survey of seven universities in England, Wales and Northern Ireland. *Asian Pac J Cancer Prev.* 2012;13(2):705-14. PubMed PMID: 22524848. [PubMed].
6. Li L, Borland R, Yong HH, Fong GT, Bansal-Travers M, Quah AC, Sirirassamee B, Omar M, Zanna MP, Fotuhi O. Predictors of smoking cessation among adult smokers in Malaysia and Thailand: findings from the International Tobacco Control Southeast Asia Survey. *Nicotine Tob Res.* 2010 Oct;12 Suppl:S34-44. doi: 10.1093/ntr/ntq030. PubMed PMID: 20889478; PubMed Central PMCID: PMC2948135. [PubMed].
7. ITC Project. ITC Bangladesh Survey Summary; University of Waterloo: Waterloo, Ontario, Canada and University of Dhaka: Dhaka, Bangladesh, 2010
8. Feng G, Jiang Y, Li Q, Yong HH, Elton-Marshall T, Yang J, Li L, Sansone N, Fong GT. Individual-level factors associated with intentions to quit smoking among adult smokers in six cities of China: findings from the ITC China Survey. *Tob Control.* 2010 Oct;19 Suppl 2:i6-11. doi: 10.1136/tc.2010.037093. PubMed PMID: 20935198; PubMed Central PMCID: PMC2976002. [PubMed].
9. Ganesh Kumar S, Subba SH, Unnikrishna B, Jain A, Badiger S. Prevalence and factor associated with current smoking among medical students in coastal South India. *Kathmandu Univ Med J (KUMJ).* 2011 Oct-Dec;9(36):233-7. PubMed PMID: 22710529. [PubMed].
10. Khan S, Mahmood S E, Sharma A K, Khan F. Tobacco Use Among Medical Students: Are They Role Models Of The Society? *Journal of Clinical and Diagnostic Research.* 2012; 6: 605-7.
11. Sargent JD, Mott LA, Stevens M. Predictors of smoking cessation in adolescents. *Arch Pediatr Adolesc Med.* 1998 Apr;152(4):388-93. PubMed PMID: 9559717. [PubMed].
12. Siahpush M, McNeill A, Borland R, Fong GT. Socioeconomic variations in nicotine dependence, self-efficacy, and intention to quit across four countries: findings from the International Tobacco Control (ITC) Four Country Survey. *Tob Control.* 2006 Jun;15 Suppl 3:iii71-5. PubMed PMID: 16754950; PubMed Central PMCID: PMC2593052. [PubMed].
13. Bartwal J, Awasthi S, Rawat CMS, Arya A. Awareness and Pattern of Tobacco Use among the Medical Students of Government Medical College. *Ind J Comm Health* 2014;26 (2); 155-159.
14. Islam K, Saha I, Saha R, Samim Khan SA, Thakur R, Shivam S. Predictors of quitting behaviour with special reference to nicotine dependence among adult tobacco-users in a slum of Burdwan district, West Bengal, India. *Indian J Med Res.* 2014 Apr;139(4):638-42. PubMed PMID: 24927353; PubMed Central PMCID: PMC4078505. [PubMed].
15. Chatterjee T, Haldar D, Mallik S, Sarkar GN, Das S, Lahiri SK. A study on habits of tobacco use among medical and non-medical students of Kolkata. *Lung India.* 2011 Jan;28(1):5-10. doi: 10.4103/0970-2113.76293. PubMed PMID: 21654978; PubMed Central PMCID: PMC3099511. [PubMed].
16. Aggarwal S, Sharma V, Randhawa H, Singh H .Knowledge, attitude and prevalence of use of tobacco among male medical students in India: A single centre cross-sectional study. *Ann Trop Med Public Health.* 2012;5: 327-9.
17. Raute LJ, Sansone G, Pednekar MS, Fong GT, Gupta PC, Quah AC, Bansal-Travers M, Sinha DN. Knowledge of health effects and intentions to quit among smokeless tobacco users in India: findings from the International Tobacco Control Policy Evaluation (ITC) India Pilot Survey. *Asian Pac J Cancer Prev.* 2011;12(5):1233-8. PubMed PMID: 21875273. [PubMed].
18. Joshi U, Modi B, Yadav S. A study on prevalence of chewing form of tobacco and existing quitting patterns in urban population of jamnagar, gujarat. *Indian J Community Med.* 2010 Jan;35(1):105-8. doi: 10.4103/0970-0218.62560. PubMed PMID: 20606932; PubMed Central PMCID: PMC2888336. [PubMed].

### Tables

**TABLE 1 CURRENT SMOKERS AND SMOKELESS TOBACCO USERS BY PREVIOUS ATTEMPTS TO QUIT**

Ever attempted to quit smoking	Smokers			Smokeless tobacco users		
	Male	Female	Total	Male	Female	Total
<b>Yes</b>	221 (38.2)	31 (36.9)	252 (38.0)	142 (41.2)	32 (36.0)	174 (40.0)
<b>No</b>	358 (61.8)	53 (63.1)	411 (62.0)	203 (58.8)	57 (64.0)	260 (60.0)
<b>Total</b>	579 (100.0)	84 (100.0)	663 (100.0)	345 (100.0)	89 (100.0)	434 (100.0)
$\chi^2 = 0.05$ , $df = 1$ , $p = 0.823$				$\chi^2 = 0.798$ , $df = 1$ , $p = 0.371$		
<i>(Figures in parentheses indicate percentage)</i>						

**TABLE 2 CURRENT SMOKERS AND SMOKELESS TOBACCO USERS BY DESIRE TO QUIT**

Category	Desire to quit smoking tobacco			Desire to quit smokeless tobacco		
	Yes	No	Total	Yes	No	Total
<b>Male</b>	326(56.3)	253(43.7)	579(100.0)	115(33.3)	230(66.7)	345(100.0)

<b>Female</b>	34(40.5)	50(59.5)	84 (100.0)	35(39.3)	54(60.7)	89(100.0)
<b>Total</b>	360(54.3)	303(45.7)	663(100.0)	150(34.6)	284(65.4)	434(100.0)
$\chi^2 = 7.406, df = 1, p = 0.006^*$			$\chi^2 = 1.123, df = 1, p = 0.289$			
<i>(Figures in parentheses indicate percentages) (*=statistically significant)</i>						

**TABLE 3 REASON FOR DESIRE TO QUIT SMOKING AND SMOKELESS TOBACCO**

Reason for desire to quit tobacco	Smoking		Total	Smokeless		Total
	Male	Female		Male	Female	
<b>Wastage of money</b>	90 (27.6)	6 (17.7)	96 (26.7)	21 (18.3)	6 (17.1)	27 (18.0)
<b>Awareness of health hazards</b>	123 (37.7)	9 (26.5)	132 (36.7)	53 (46.1)	10 (28.6)	63 (42.0)
<b>Bad Habit</b>	46 (14.1)	14 (41.2)	60 (16.7)	25 (21.7)	16 (45.7)	41 (27.3)
<b>Presence of medical problems</b>	12 (3.7)	0 (0)	12 (3.3)	1 (0.9)	0 (0)	1 (0.7)
<b>Awareness of addiction</b>	23 (7.1)	3 (8.8)	26 (7.2)	12 (10.4)	3 (8.6)	15 (10.0)
<b>Family pressure</b>	21 (6.4)	1 (2.9)	22 (6.1)	2 (1.7)	0 (0)	2 (1.3)
<b>Don't know</b>	11 (3.4)	1 (2.9)	12 (3.3)	1 (0.9)	0 (0)	1 (0.7)
<b>Total</b>	326 (100.0)	34 (100.0)	360 (100.0)	115 (100.0)	35 (100.0)	150 (100.0)

*(Figures in parentheses indicate percentages)*