Section: Community Medicine

Original Research Article

PREVALENCE OF TOBACCO USE AND VARIOUS SOCIO-DEMOGRAPHIC FACTORS ASSOCIATED WITH TOBACCO USE AMONG MALES OF RURAL AREA OF BAREILLY

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Abstract

Background: In India, the most susceptible age groups for tobacco use is during adolescence and early adulthood 15-24 years (6). Strong evidence is available in India from large-scale studies on the association between tobacco use and mortality. Objective: to assess various socio-demographic factors and prevalence of tobacco use in males of rural field practice areas of Department of Community Medicine, Rohilkhand Medical College & Hospital, Bareilly. **Materials and Methods:** This Community based cross sectional study was conducted among individuals adult male aged 15 years and above residing in the study areas of rural field practicing area of RMCH, Bareilly. **Result:** Maximum participants (33.0%) were in the age group 25 – 34 years followed by 32.5%, 15.0% ,10.75%, and 8.75% in the age groups 15 – 24 years, 35 - 44 years, 45 - 55 years, 55years and above respectively. Majority participants (79.2%) were Hindus and Muslims. 57.5% were OBC, 23.5% were General and 19.0% were SC/ST participants. Majority (52.5%) of the subjects belonged to joint family, followed by 47.5% to nuclear family. Most of the study participants (37.75%) were in class IV, while least (2.25%) were in class I according to B. G. Prasad Classification (2014). Majority of the participants (23.5%) have completed intermediate followed by graduate (18.5%). Most of the participants were service man (22.25%) followed by 21.75%, 17.25%, 13.75%, 8.25%, by occupation are farmer, labour, businessman and independent profession respectively. 14.75% are students while only 2% are unemployed. **Conclusion:** The tobacco use varied with age and by type of tobacco. It was significantly associated with various local socio-demographic factors like religion, caste, education, occupation, marital status, family type, socio-economic class and tobacco use in family or friends.

INTRODUCTION

Tobacco use is the single largest preventable cause of death and disability worldwide. It is a very well established fact that tobacco use is the common and major risk factor for six of the eight leading causes of death in the world namely ischaemic heart disease (IHD), cerebrovascular disease, lower respiratory infections, chronic obstructive pulmonary disease (COPD), tuberculosis and cancers (trachea, bronchus and lung).[1]

According to recent estimates, nearly 5 million people die due to tobacco use every year and this figure is expected to increase to 10 million deaths per year by 2020.[2] with 7 million of these deaths to occur in China and India.[3] With current smoking patterns alone, about 500 million will eventually be killed by tobacco use and more than half of these deaths will occur in today's children and teenagers.[4]

Annually, tobacco use is decreasing in developed countries by 0.2% and increasing in developing countries by 3.4 %, showing a contrast trend of immense concern.5 The cure for this devastating epidemic is dependent not on medicines or vaccines, but on the concerted actions of the government and civil society. Unless urgent action is taken tobacco could kill one billion people during this century.[1]

In India, deaths due to tobacco were estimated to be 8 lakhs in 19966 and recent studies indicate that the risk of deaths due to tobacco may infact be more than that identified earlier.[7,8] The total cost to the

country for the year 1999 due to tobacco related cancers, coronary artery disease and chronic obstructive pulmonary disease was estimated at Rs.27,761 crore.[9]

In India, multiple forms of tobacco use complicate attempts to reduce its overall impact on public health.[10] In order to reverse the rising tobacco epidemic by effective health policies, community based epidemiological studies on tobacco use are required to quantify the problem and to identify the determinants and their distribution. This information needs to be area specific because of a strong correlation with socio cultural characteristics and existence of wide variations in tobacco use prevalence as seen in nationwide surveys.[11]

Hence this study was undertaken to assess various socio-demografhic factors and prevalence of tobacco use in males of rural field practice areas of Department of Community Medicine, Rohilkhand Medical College & Hospital, Bareilly.

MATERIALS AND METHODS

This Community based cross sectional study was conducted among individuals adult male aged 15 years and above residing in the study areas of rural field practicing area of RMCH, Bareilly. Duration of study was one year. Multistage sampling design was used.

Sample Size Calculation: calculated by $PQ(1.96)^2L^2$

- Where P is 52.4%[87]
- Q = 100-P = 100 - 52.4= 47.6,

L is 10% of P which comes to be 5.24

- Sample size = 1.96 X 1.96 X 52.4 X 47.6= 348.96

  5.24 X 5.24
- 348.96 + 10% insufficient or inappropriate response
- So sample size is rounded up to 400 (approximate)
- The prevalence of tobacco users was taken from study of Garg G et al (tobacco use and its correlate factors among adult males in rural area of Meerut-A cross sectional study)12

Inclusion Criteria:

1. Individuals above 15 years who were resident of rural field practice area of RMCH, Bareilly
2. Individuals who gave the informed consent.

Exclusion Criteria

1. Individuals who were below 15yrs of age.
2. Individuals who did not give consent or co-operated.
3. Participants who were severely ill are not included

Data Analysis

The data thus collected was analysed with the help of computer software SPSS (version. 22.0) for Windows. The result will be displayed with the help of tables according to the aim and objectives of the study. Valid information was drawn and discussed with the other studies.

RESULTS

Table 1: Distribution of participants according to tobacco use (n=400)

TOBACCO USE								
Users (%)							Non users (%)	Total (%)
Current (%)			Past (%)			Total (%)		
183 (45.75)			19 (4.75)			202 (50.50)	198 (49.50)	**400 (100%)**
exclusive Smoked	**exclusive Smoke less**	**mixed**	**exclusive smoked**	**exclusive Smoke less**	**Both**			
64 (16.0) (34.97)	78(19.25) (42.63)	41(10.5) (22.40)	6 (1.5) (31.57)	9(2.25) (47.36)	4(1) (21.07)			

It was observed that out of total 400 participants the overall prevalence of the tobacco user was found to be 50.50% out of which 45.75% are current user and 4.75% are past user whereas 49.50% of the total populations have never use tobacco in any form.

Among the current users the most common form of tobacco was found to be exclusive smokeless form of tobacco i.e. 34.97% followed by exclusive smoked. Whereas among the past users the most common form of tobacco use among the tobacco user was also found to be exclusive smokeless form of tobacco i.e. 31.57% followed by exclusive smoked.

Maximum participants were in age group of 25- 34 years of age i.e. (33.0%). It was seen that among the users of tobacco (31.19%) of participants are in age group 15-24 years followed by 25-34 years age group (26.24%).

Among the age group of 45-54years and above 55 years usage of tobacco was found to be high. It was around 62.79% and 68.57% respectively. Thus the association between the age and the use of tobacco was found to be statistically significant (p <0 .05).

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Table 2: Distribution of participants according to tobacco use in relation to their Religion & Caste (n=400)

	Tobacco use			
	Yes (%)	**No (%)**	Total (%)	
RELIGION WISE DISTRIBUTION				
HINDU	**156 (49.21) (77.22)**	**161 (50.79) (81.31)**	**317 (100) (32.5)**	Chi-square 4.588 df=2 p = 0.101
MUSLIM	41 (60.29) (20.30)	27 (39.71) (13.64)	**68 (100) (33.0)**	
OTHERS	5 (33.33) (2.48)	10 (66.66) (5.05)	**15 (100) (15.0)**	
Total	**202(50.50) (100%)**	**198(49.50) (100%)**	**400(100) (100%)**	
CASTE WISE DISTRIBUTION				
GENERAL	**47(50.00) (23.27)**	**47(50.00) (23.74)**	**94 (100) (23.50)**	Chi-square 1.428 df = 2 p = 0.490
OBC	**121(52.60) (59.90)**	**109(47.40) (55.05)**	**230(100) (57.50)**	
SC/ST	**34 (44.74) (16.84)**	**42(55.26) (21.21)**	**76 (100) (19.00)**	
Total	**202 (50.50) (100)**	**198(49.50) (100)**	**400 (100) (100%)**	

Maximum population was found to be Hindu by religion (79.25%) followed by Muslim (17.0%) and others (3.75%). Among Hindu 49.21% are tobacco user and 50.79 are non-tobacco user. Whereas among Muslim 60.29% are tobacco user and 39.71% are non-tobacco user. But on applying chi square test it was observed that this relation was not statistically significant ($p > 0.05$).

57.50% of the total study population are OBC by Caste followed by general (23.50) and SC/ST (19.0%). Among total OBC 52.60% are tobacco user and 47.40% non-tobacco user whereas in General caste the percentage remain same between tobacco user and nonuser i.e. 50.0%. This the association between the caste and tobacco use was also not found to be statistically significant ($p > 0.05$)

Among married population 50.37% are tobacco user where as 49.63% are non-tobacco user. Whereas the interesting part is that among single spouse 92.31% are tobacco user. The association between the marital status and the tobacco use was found to be statistically significant ($p< 0.05$)

Tobacco use is found to be more used in nuclear family (58.03%) as compared to joint family (43.49%). The association between the type of family and tobacco use was also found to be statistically significant ($p <0.05$).

Table 3: Distribution of participants according to tobacco user in relation to their Education (n=400)

	Tobacco use			
	Yes (%)	**No (%)**	**Total (%)**	
Education wise distribution				
Illiterate or No Formal Schooling	**31(88.57)** (15.35)	4(11.43) (2.02)	35 (100) (8.80)	Chi-square 32.863 df=7 p = 0.0001
< Primary school	**17(60.71)** (8.42)	11 (39`29) (5.55)	28 (100) (7.0)	
Primary School Completed	12(44`44) (5.94)	15 (55`56) (7.57)	27 (100) (6.8)	
Middle School Completed	20 (60.60) (9.90)	13 (39.40) (6.57)	33 (100) (8.3)	
High School completed	37 (50.68) (18.31)	36 (49.32) (18.18)	73 (100) (18.3)	
Intermediate	**45 (47.87) (22.28)**	**49 (52.13) (24.75)**	**94 (100) (23.5)**	
Graduate	25 (33.78) (12.38)	**49 (66.22) (24.75)**	74 (100) (18.50)	
Post-Graduate	15 (41.66) (7.43)	21 (58.33) (10.61)	36 (100) (9.0)	
Total	202 (50.50) (100%)	198 (49.50) (100%)	400 (100) (100%)	

Among the illiterate the usage of tobacco was found to be very high. It was around 88.5% followed by participants having education less than primary school i.e. 60.71% while among the postgraduate the use of tobacco was only 41.66%. Association between the education level and tobacco use was found to be statistically significant even at 99% confident interval ($p<0.01$)

Among the total participant's maximum belong to service by occupation i.e. 22.30% followed by cultivation i.e. 21.80%

On applying chi-square test it was seen that the distribution of the participants according to their occupation and use of tobacco was not found to be statistically significant ($p > 0.05$)

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It was seen that 58.1% of participants have family of 5 – 8 members among them 51.29% are tobacco user followed 34.1% participants having 1 – 4 members among them 50.74% are tobacco user.
The association between number of family members and tobacco user was not found to be statistically significant ($p > 0.05$)
It was seen that among the participants whose house were over crowed tobacco use was found to be 51.59% but the association between over-crowding at home and tobacco use was not found to be statistically significant. ($p > 0.05$).

Table 4: Distribution of participants according to tobacco use in relation to their Type of House (n=400)

House Type	Tobacco uses			
	Yes (%)	No (%)	Total (%)	
KUTCHA (HUT)	12 (54.54) (5.94)	10 (45.46) (5.05)	**22 (100) (5.55)**	Chi-square 0.271 df = 2 p = 0.873
SEMI PUCCA	**109 (49.32) (53.96)**	**112 (50.68) (56.57)**	**221 (100) (55.25)**	
PUCCA	79 (50.97) (39.11)	76 (49.03) (38.38)	**155 (100) (38.75)**	
Total	**202 (50.50) (100%)**	**198 (49.50) (100%)**	**400 (100) (100%)**	

Majority of the population resides in semi-pucca house i.e. 55.25% followed by pucca house i.e. 38.75%. Among the total tobacco users 53.96 % resides in semi-pucca house. It was observed that participants residing in Kutcha house 54.54% are using tobacco in any form. The distribution of the participants according to tobacco use in relation to their type of house and tobacco was not found to be statistically significant ($p > 0.05$).

DISCUSSION

Because of existence of strong correlation of local socio-cultural characteristics with tobacco use, an attempt was made to study the role of various socio-demographic factors associated with tobacco use.
Lastly, to provide information on awareness and prevailing mindset among tobacco users in this region, it looked at the very important determinants of tobacco use i.e. socio demographic associations, knowledge of health hazards of tobacco use among tobacco users and their attitude towards quitting the tobacco habit.
The socio-demographic characteristics of the study participants were comparable to that of NFHS-2.[13]
When we compare the prevalence it is important to bear in mind the minimum and maximum age of the participants, like, in NFHS-2,13 the age of participants was 15 years and above, whereas in NSSO it was 10 years and above,14 which may bring down the overall prevalence with the inclusion of younger age-groups .The present study addresses the issue arising out of surrogate respondent by collecting data from each participant separately ensuring confidentiality , which may help us to rely on the findings of the study. The present study noted an ever use prevalence of ever smokers in NFHS-2 was 42.2% for men. Chaudhary K et al.[14] noted a prevalence of ever smoking in Karnataka to be 33.3% among rural men.
The current use prevalence in the present study was 45.75% our study noted a slightly lower current use was among males (45.75%) compared to NSSO 52nd round (51.3%). 103 and the difference may be again because of underreporting because of surrogate response in the NSSO survey. Gupta PC16 reports prevalence of tobacco use to be 69.3% among men over 35 years of age and 57.5% among women above 35 years. Chaudhary K et al.[15] report a prevalence 50% among men in Uttar Pradesh and prevalence of 41% among men in Karnataka.
In the present study, the prevalence among males was 50.5% where as it was lower in NSSO 50th round (27.7%), and higher in NFHS-3(49.9%). The lower prevalence in NSSO 50th round may be because of the age range which was for 10 years and above and NFHS-3 surveys. Chaudhary K et al.[17] reported a lower prevalence of 46% in Karnataka and higher prevalence of 63% in Uttar Pradesh.
In the present study, the tobacco use prevalence was maximum in 15-24 years of age which decreases with age consistently which was not consistent like in other studies.[13,14] In our study tobacco users were most in age group of 15 – 24 (31.19%) which was followed by age group 25.34 (26.24%). Zakiet al.[18] also found highest prevalence of smoking was noted in age group 40 to 49 and high prevalence of smokeless tobacco consumption was found in 30-39 years age group. Rajeev Gupta et al found prevalence of smoking in males and females increases with the advance in age group. In 15-19 yearsage 1.0%, 20-29 years age 5.3% and 30-39 years age 16%. National Household Survey on Drug Abuse.[19] (NHSDA) had estimated the prevalence of smoking in various age groups which showed a peak (45 to 50%) in age group around 30 years which was not consistent to our study.
The higher prevalence of tobacco use was observed among Muslims (60.29%), compared to Hindus (49.21%) and others (2.48%), However, Subramanian et al.[20] reported a higher tobacco use among Hindus and Muslims than among and residual category of 'Other religion'. Reason for the high prevalence of tobacco use in Muslim could be because of restrictive lifestyle and stress compared

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to other religions which are more liberal on such habits.

Present study finding of higher prevalence among OBC (57.5%), General (23.5%), and SC/ST (19.00%) is not similar to Subramanian et al. Few explanations for such an observation can be that OBC, SCs, STs have been the victims of social oppression for a long time, which may have triggered increased tobacco use in these caste. Also, lower socioeconomic class and lower education may have contributed.

In our study tobacco users mostly were from illiterate (88.57%) followed by < primary school (60.71%), who was similar to the study conducted by D.R. Sinalkaretal.[21] that majority of the tobacco users (54.5%) were illiterate in rural population of Maharashtra in year 2012.

Sorenson et al.[10] Gupta & PC et al.[22] noted a higher risk of tobacco use among unskilled workers, male service workers and unemployed. High tobacco use among the agriculturists, those doing other physical labour, and unemployed may be because of associated stressors such as poor housing conditions, unmet needs for food and potential lack of social connectedness.[10] According to Glorian Sorensen.[23] et al unskilled workers and unemployed individuals were more at risk than professionals to use tobacco in urban population of Mumbai in year 2005 which was similar to our result.

Family type was a significant determinant in a way that the prevalence was higher in nuclear families (58.03%) when compared to non-nuclear families (43.49%).

An explanation could be that joint families have greater number of people living in the household and a small change in the household may influence the behavior of large number of persons in the household, especially if the practice of using tobacco is prevalent vary from the beginning as a restricted social custom.

Socioeconomic status was an important determinant of tobacco use. The tobacco use showed a significant direct relation with SES class. The persons in lower SES classes like III, IV or V were nearly two times less at risk of using tobacco compared to class I and II and this finding is contradicted by the other shared studies.[24] The relation between socioeconomic markers and tobacco consumption is not similar to that observed in developed countries.[25] higher socioeconomic status predisposes an individual for leading a lavish life in terms of education, living standards and social belongingness so increasing the stress as well as pear pressure.

In this study, presence of tobacco use in presence of the family or friends proved to be a very strong determinant of tobacco use in the study subject. It noted that a greater number of family of friends of tobacco users used tobacco and lesser number of family friends used tobacco among non-using subjects. This confirms the influence of near and dear ones in determining the tobacco use behavior. In our study, a person was at more risk of using tobacco when he/she has family/friends present as tobacco users Nichter M et al.[26]& Pradeep kumar As et al.[27] share the similar findings in their study.

In our study smokeless tobacco use by males was 42.63%. The study in Bombay.[28] which also showed high prevalence of smokeless tobacco use in men (57.5%) and also Chaudary KC.[29] conducted a study in Karnataka and Uttar Pradesh and found prevalence of smokeless tobacco use in Karnataka to be 44.7% among rural men. In rural Uttar Pradesh 51.2% men and 9.3% women used tobacco. Prevalence of tobacco use was 49.36% in which majority of users (56.05%) were males while only 42.68% were female while ZakiEtal.[30] also found a high prevalence of smokeless tobacco use 85.9%.A study by Mukherjee.[31] in Khera district of Gujarat reported 69% males and 30% females used tobacco.

CONCLUSION

It was evident from this study that the tobacco use is widespread in rural field practicing area of RMCH Bareilly. The tobacco use varied with age and by type of tobacco. It was significantly associated with various local socio-demographic factors like religion, caste, education, occupation, marital status, family type, socio-economic class and tobacco use in family or friends. Socio-demographic characteristics revealed that among tobacco use majority of the males were in age group of 15 – 24 years, Muslim by Religion, OBC by Caste, lobourer, illiterate, belonged to Nuclear family and more in socio economic Grade IV in the study area.

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