An Epidemiological Study of Tobacco Use among People Aged 15 year and above In Rural Field Practice Area of Teerthanker Mahaveer Medical College & Research Center Moradabad (Uttar Pradesh)

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ABSTRACT

Aim: To assess the various epidemiological factors and prevalence of tobacco use among rural population of Moradabad district.

Objectives: To assess the prevalence and pattern of tobacco use among population residing in catchment area of RHTC TMMC & RC, Moradabad. To identify the various socio-demographic factors associated with tobacco use. To assess the awareness of harmful effects of tobacco and tobacco control policy. To make suitable recommendations.

Material and Methods: Data was collected from the selected houses of 400 participant is 15 years and above from the field practice area of RHTC TMMC & RC Moradabad (U.P.). A cross-sectional study.

Results: 400 individuals participated in the study. 82.75% were males and 17.25% females. 57% or 228 were currently tobacco user (95% CI 52.15-61.85). 31.6% were smokers, 52.6% were smokeless and 15.8% used both. 15.8% of the tobacco users had one or more tobacco users among their family members. A higher number of students (100.0%) A higher proportion of Muslims were found to be heavy tobacco users (66.7%) as compared to Hindus (24.1%). Percentage of heavy tobacco users was found to higher among the literates (30.0%) Higher percentage of individuals belonging to nuclear families (30.2%) was found to be heavy tobacco users as compared to those belonging to joint families (23.0%).

Conclusion: The main reasons for high prevalence of tobacco use were blood relation and relatives, colleague, unemployment, fashion, media. Student should be educated about harmful effect of tobacco use. Government should wane on the production of tobacco. It is compulsory to stop the habit.

Keywords: Habits, Smoking, Smokeless.

INTRODUCTION

“EAT GOOD OR DON’T EAT BAD”: Mahatma Gandhi

Tobacco is the single greatest cause of preventable death worldwide. In India, nearly 800,000 deaths occur annually due to tobacco related health disorders. WHO predicts that tobacco related deaths in India may exceed up to 1.5 million annually by 2020.¹

In our country, the most susceptible age groups for tobacco use is teenage years and early adulthood i.e. 15-24 years.² Strong association between tobacco use and mortality has been observed in India from large-scale studies. Smoking being more popular than chewing as observed in small surveys in Uttar Pradesh which also shows a high tobacco use. In the National family health Survey of individuals 10 years and above in rural Uttar Pradesh (Allahabad, Bijnor and Mainpuri districts), 51% of males were tobacco users (28.2% smokers and 24.5% smokeless users), while only 9.2% of females used tobacco, mainly in smokeless forms.³ Tobacco problem is more in India intricate in comparison to other country of the world because of the diverse patterns consumption of tobacco: smoking, gargling, applying on teeth & gums sucking, chewing tobacco, etc. and a large consequential burden of tobacco related diseases and death.⁴ This higher prevalence among illiterate and males of low socioeconomic status is a serious problem as they doesn't have the resources to fight health disorders associated with consumption of tobacco.⁵ Even though government has passed laws for control of tobacco, its use has gone up both among the
Males and the females. Limited literature exists which tell the efficacy of warnings labels on tobacco products in India. Paucity of data regarding tobacco use among rural males especially of Moradabad district exists. Socioeconomic and regional differences need to be observed separately among its users in India.

MATERIAL AND METHODS
This cross-sectional study was conducted in the villages under catchment area of RHTC, Department of Community Medicine, Teerthanker Mahaveer Medical College and Research Centre, Moradabad for a period of one year from June 2015 to May 2016. Institutional ethical committee approval was taken for the study. Sample size was calculated on the basis by formula

$$\frac{4pq}{E^2}$$

(Where \( p \) is 52.6\%, \( q=100-p \), \( E \) is 10% of \( p \)) which comes to be 364. 10% inadequate response/ non response rate was added (i.e.36). Thus sample size comes to be 400.

A cross sectional study was adopted. Multistage systematic sampling design was used for data collection. In first stage, out of those 31 blocks, 6 blocks were randomly selected in field practice area of Rural Health Training Centre, Teerthanker Mahaveer Medical College and Research Centre, Moradabad. These 6 blocks had a total population of 38,324 in 4,724 households. In second stage PPS technique was applied on these 6 blocks and a total of 400 participants were selected. Every 12th household was selected for study. From each house a single person was included. In houses found locked or having no suitable candidate, the next house was taken for study. Sampling was continued till desired sample size of 400 was obtained.

The survey team included the postgraduate student herself and medical social workers. Members of the survey team explained the individuals about the purpose and significance of the study. Individuals were assured that information given by them would be kept confidential. The individual’s name and address was recorded after obtaining informed consent. Individuals were interviewed in privacy and desired information was collected on a pilot-tested, structured and predesigned schedule through oral questionnaire method. MS Office Excel software was used to make data entry in form of codes and all the data were analyzed in Statistical package for social sciences (SPSS) version 20.

![Figure 1: Age and Sex distribution of study participants](image-url)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Chi Sq, P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 18</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>23.26, .00030163</td>
</tr>
<tr>
<td>18 – 29</td>
<td>52</td>
<td>12</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>30 – 39</td>
<td>48</td>
<td>12</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>40 – 49</td>
<td>35</td>
<td>1</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>50 – 59</td>
<td>40</td>
<td>0</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>60 &amp; Above</td>
<td>32</td>
<td>4</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>211</td>
<td>17</td>
<td>228</td>
<td>57</td>
</tr>
</tbody>
</table>
RESULTS
As depicted in figure 1; out of 400 individuals who participated in the study 331 were males and 69 female. Among males higher percentage of participants, 123 were seen in the age group of 18-29 years age group on the other hand higher no of female participants, 28 were in the age group of 30-39.

Table 1 demonstrates prevalence of current tobacco users as per their age and sex. More male participants were found to be currently using tobacco (63.7%) in comparison to females (24.6%). Tobacco usage was found to higher among those aged 30 years and above (75.4%). Among male participants tobacco use was observed to start in young age (<18 years), with highest number of tobacco users in 18-29 years age group, and tobacco use was prevalent in all age group even among elderly males 32 were tobacco users. On the other hand female had highest number of tobacco users in 30-39 years age group. We found that tobacco use was not reported in young females while only 4 elderly women were tobacco users.

Family record of tobacco users revealed that out of 228 tobacco users 15.8% family had one or more tobacco users. In which 61.1% were smoker. (Table 2) As shown in table 3; among and smokeless Tobacco user illiterate were significantly higher as 29.4% and 52.9% respectively. Among tobacco user upper class user were 33.3% and 55.6 respectively. Smokers were more common in working class 25.3% but unemployed users were 100%. While among smokeless tobacco users were more common housewife 66.7% and student 100%.
Out of 228 tobacco users, 48 (21.1%) tried to quit tobacco, most commonly because of the chronic cough (25%) or without any reason (33.3%); while oral problems and breathlessness made quitting tobacco use compulsory for 16.7% each. Only 8.3% participants discontinued tobacco use due to loss of interest.

The participant who gave up stopping the use of tobacco, 100% restarted using tobacco. Reason of restart tobacco were craving Psychosocial stress, peer pressure, withdrawal symptoms, multiple factors, no reason but craving is main factor to restart. (Table 4)

**Figure 2: Cause of Stop the use of Tobacco Product**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Factors</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause for Restart</td>
<td>Craving</td>
<td>12</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>Psychosocial stress</td>
<td>8</td>
<td>16.66</td>
</tr>
<tr>
<td></td>
<td>Peer pressure</td>
<td>4</td>
<td>8.33</td>
</tr>
<tr>
<td></td>
<td>Withdrawal symptoms</td>
<td>4</td>
<td>8.33</td>
</tr>
<tr>
<td></td>
<td>Multiple factors</td>
<td>12</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>No reason</td>
<td>8</td>
<td>16.66</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>48</td>
<td>100</td>
</tr>
</tbody>
</table>

**Table 4: Reason of restarting the use of Tobacco Product**

**DISCUSSION**

In this study conducted in rural areas of Moradabad district, the overall consumption of tobacco (in any form) was 57.0 %, with a considerably higher rate among males (63.7%) as compared to females (24.64%). The rate in this study is considerably more than the national average (35%) by The Global Adult Tobacco Survey (GATS) India 2009-2010. Gross prevalence is far higher than the national average for males (48–57%). The highest daily consumption of tobacco was seen above 45 years of age participants where the maximum daily smokeless tobacco utilization was seen among 25 to 34 year old respondents. The National Household Survey of Drug and Alcohol Abuse in India (NHSDAA), conducted in 2002 among males, covering over 40,000 individuals aged 12-60 years in nearly 20,000 households in 25 states revealed that the overall prevalence of current tobacco use was 55.8% showing an increase in tobacco use with age, leveling off after 50 years of age7 a recent study from Uttarakhand reports. About 31.6% persons were using smoked tobacco products and 15.8% used both. Similar prevalence of smoking (36.7%), smokeless tobacco use (28.4%) and combined use (12.6%) was reported in a study by Annadurai et al. The persons in lower SES classes like III, IV or V were nearly two times more at risk of using tobacco compared to class I and II. In our study; tobacco use was significantly higher (<0.05) among the middle socioeconomic class (60.7%) than upper class (42.9%). Occupation too was a significant determinant for tobacco use in the current study. We observed that 32.68 % people of working class were commonly using tobacco and those unemployed (100.0%) while among housewife (66.7%) and students (100.0%) smokeless tobacco use was more common, the difference being statistically significant (<0.001). Sorenson et al8 Gupta & PC et al10 noted a higher risk of tobacco use among unskilled workers, male service workers and unemployed. Our study revealed that tobacco use was significantly higher (<0.05) among illiterates (70.8%) as compared to literates which was alike the findings of Daniel A et al (2008).11 Garg et al12 conducted a study in Delhi and reported that tobacco use was highest amongst the illiterates wherein 54% and
12% of illiterate males and females respectively smoked tobacco. Study from Uttarakhand found that lesser education status was also connected with an amplified prevalence of tobacco usage, with 42.1% of those with no education using tobacco, 40% of those who reached upper primary, and only 29.9% of those who had completed higher studies.\textsuperscript{13} Similar observations are made in Western literature, in United States.\textsuperscript{14}

**Pattern of Tobacco Use**

Out of 228 tobacco users, 48 (21.1%) tried to quit tobacco, most commonly because of the chronic cough (25%) or without any reason (33.3%). Most common reasons for restart were found to be craving (25%) and psychosocial stress (16.66%). According to Chockalingam K\textsuperscript{15} in context to stop smoking, he observed that 68% wanted to stop smoking and 45% even tried to stop smoking. This confirms the influence of near and dear ones in determining the tobacco use behavior. 15.8% of the tobacco users had one or more tobacco users among their family members in this study. One fourth of the observer used tobacco, 14% could not live without it. About 43% had other reasons such as passing time while waiting for a friend, to have pleasure, or being alone etc.\textsuperscript{16} Singh V et al\textsuperscript{17} demonstrates in their study that tobacco was primary introduced by their contacts in 38% of children. As studied by Chockalingam et al the respondents had used tobacco in the past and had quit it permanently in our study were found to be about 16.3%. A very few of smokers, (only 2%) were able to stop the habit for more than 3 years and only 1% of them had been able to stop the habit for more than 3 years.\textsuperscript{18} According to a study which was conducted in Bellary out of 600 observers; 435 (72.5%) had seen the pictorial warnings. Among them 111 (25.5%) had understood it rightly and 63 (14.5%) had tried for decreasing or stopping tobacco. Younger age group, higher learning status, people from cities, upper socio economic class, lesser duration (<5 years) of tobacco habit were found to have considerable connection with understanding about pictorial warnings printed on tobacco products. On the other hand, the effect of pictures on decreasing/stoping tobacco utilization was very less.\textsuperscript{18} This clearly shows the addictive character of tobacco smoking.

Dependence on tobacco use has to be seen as a disease form as it is found to be related with respiratory and vascular diseases\textsuperscript{19} and therefore addicted tobacco users are treated through tobacco cessation clinics, methodically to stop away the habit of tobacco smoking.

**Awareness of Adverse Effects of Tobacco and Tobacco Control Policy**

In this study, majority (91.0%) correctly said that tobacco is harmful for health while about half knew it causes Chronic Cough and lung cancer while only one-fifth knew it causes hypertension. Only 2.5% thought it causes diabetes while only 7.3% knew it causes heart disease. About two thirds knew that it causes mouth disease. 64.2% were conscious of the adverse effects of smoking in a study by Garg et al.\textsuperscript{20} Smokers have 15 to 30 times more likely chances to get lung cancer than non-smokers\textsuperscript{21} and smokeless tobacco users have about an 80% higher risk of having oral cancer in relation to non-users.\textsuperscript{22} Mondal TK\textsuperscript{23} Majority (56.0%) thought that both smoking and smokeless tobacco were having equal adverse effects, 27.6% thought that only smoking was having adverse effects and related figure for smokeless tobacco was only 4.1% and 12.3% had no idea of this adverse effect. Almost half (48.8%) thought that it may cause lung cancer.

According to the subjects other key diseases it might cause were oral cancer (19.5%), Tuberculosis (15.5%), Respiratory distress (13.3%), asthma (9.7%), cough (4.6%). Printed source on packing (82.3%) followed by media (78.0%) was the most general means of information for understanding the adverse effects of tobacco in this study. Similarly television (58%) was found to be the main source of information followed by newspapers (26%) and movies (16%) in the study by Singh et al.\textsuperscript{24} Association between pictorial warnings on cigarettes packs and quitting smoking has also been demonstrated. In Australia, 62% of peoples who have stopped smoking reported in 2008 that the pictorial warnings had helped them to stop smoking.\textsuperscript{21} In our study 86.6% had ever seen a pictorial warning. 88.4 % knew the purpose of this pictorial warning was to spread awareness regarding harmful effects of tobacco (cancer). 95.1% thought pictorial warning is understandable. In this study, 72.0% of current tobacco users had symptoms of harmful effects and 86.0% of the current users thought that tobacco is harmful for health but still they continued to smoke due to addiction. With regard to involvement actions, they will require thorough psychosocial and medicinal strategies. Major Suggestions given by respondents to stop tobacco use were displaying its side effects in movies and television (15%) and by spreading door to door awareness about its side effects (10%). In spite of the differences in the current and never tobacco users, majority of (over 80%) participants constantly reported that plain covering would decrease the attractiveness and promotional value of tobacco products and among their both users and non-users of tobacco.\textsuperscript{26} Attractiveness of tobacco packaging is an aspect that is studied from developed countries shows that it is used by tobacco companies to endorse their products.\textsuperscript{27} Plain, unappealing group and large pictorial health caution will fulfill the aim of educating the public more effectively. All above discussion imply that there is an insistent need to make accessible public health anti-tobacco drive more successful, and dead diction clinics are required in all community wellbeing institutions to maintain the control of tobacco.

**CONCLUSIONS AND RECOMMENDATIONS**

Our study showed a high prevalence of current tobacco use (57.0%). Age (p < 0.001), Religion (p=0.001), Education (p=0.003), Occupation (p<0.001) and Socio-Economic status (p<0.001) were found to be significant determinants of tobacco use in the study population.

We recommend on the basis of our study that Information, education and communication activities are need of the day to raise the public awareness and to address the problems arising out of lack of awareness. We suggest restricting the growth of tobacco industry in a phased manner. Active involvement of community, health institutions and Non-governmental organizations in tobacco use control is necessary. Effective implementation of laws like protection of non-smokers from second hand smoke (SHS) and prohibition of sale to minors is a must. All health institutions should provide tobacco cessation services by establishing Tobacco Cessation Clinics (TCC). Lessons on tobacco should be included in educational curriculum at all levels. Policy to regulate the contents in the tobacco products, especially, the nicotine and tar content Ingredients are to be disclosed. A comprehensive ban necessitate on tobacco advertisement, promotion and sponsorship. Keep a track of trends
in tobacco use by regular community surveys and among specific groups, especially, the youth and women and create a forum for regional and global tobacco surveillance and exchange of information. Lastly, overall development of the weaker sections of the community should be given priority as they are more likely to be worst affected by the tobacco use.

REFERENCES


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