

**REVIEW ARTICLE****AN EPIDEMIOLOGICAL STUDY OF TOBACCO ADDICTION AMONG MALE AGED 15 YEAR AND ABOVE IN AN URBAN AREA OF EAST DELHI**Vijay Kumar<sup>1</sup>, Madhulika Bhattacharya<sup>2</sup>

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**ABSTRACT:**

**Introduction:** Tobacco is a serious threat to health and a proven killer and ranks 2<sup>nd</sup> as a cause of death in the world. Evidences accumulating since early 1950s indicate that more than 25 diseases are now known or strongly suspected to be causally related to smoking. Aim of the present study is to determine the prevalence of tobacco habits among male age  $\geq 15$  year in urban area of Delhi. **Material and Methods:** A cross-sectional study was conducted in a sector of Sonia Vihar, Delhi among males aged  $\geq 15$  years during January 2012 to December 2012. A semi structured questionnaire was used for the study. It dividing in two domains and was prepared based on previous research studies under the guidance of expert in the field. **Results:** The prevalence of tobacco use was minimum in age group of 15-19 years (8.1%) and it was gradually increases with increasing age with minor variations being maximum in age group of 40-49 years (18.3%). A statistically significant association was found between tobacco use and age ( $p < .001$ ). **Conclusion:** We conclude by this study that, the prevalence of tobacco use was very high. The main reasons for high prevalence of tobacco use were tobacco use by parents and sibling, unemployment.

**Key Words:** Tobacco, Children

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**INTRODUCTION:**  
Tobacco is the leading preventable cause of death and  $\geq 5$  million people die globally from the effects of tobacco every year – more than that of HIV/AIDS, malaria, and tuberculosis.<sup>1</sup> Tobacco is a serious threat to health<sup>2</sup> and a proven killer<sup>3</sup> and ranks 2<sup>nd</sup> as a cause of death in the world.<sup>4</sup> Evidences accumulating since early 1950s indicate that more than 25 diseases are now known or strongly suspected to be causally related to smoking.<sup>5</sup> WHO estimates that, the tobacco will be responsible for 10 million deaths per year in the next decade, with 70% of them occurring in developing countries. In India tobacco kills 0.8-1.0 million people each year and many of these deaths occur in people who are young.<sup>6</sup> Currently, about one-fifth of all worldwide deaths attributed to tobacco occur in India. More than 8, 00,000 people die and 12 million people become ill as a result of tobacco use each year in India as per WHO projection.<sup>7</sup>

In India, nearly 1 in 10 adolescents in the age group 13-15 yr have ever smoked and almost half of these reports initiating tobacco use before 10 yr of age.<sup>8</sup> There are only a few studies on prevalence and initiation of tobacco use among children in our country. The risks of tobacco use are highest among those who start early and continue its use for a long period. Keeping all these facts in view, a cross sectional study was conducted with objective to determine the prevalence of tobacco habits among male age  $\geq 15$  year in urban area of Delhi and also see the association of sociodemographic characteristics with tobacco use.

**MATERIAL AND METHODS**

A Community based cross-sectional study was conducted in a sector of Sonia Vihar, Delhi among males aged  $\geq 15$  years during January 2012 to December 2012. The Study area covers a total population of 10,171 residing in approximately 1,821 families. Sample size

for present study was calculated at confidence interval of 95%, considering the population of male  $\geq 15$  years of age of study area to be 3800. The sample size using survey system software<sup>9</sup> comes out to be 896.

A preliminary household listing and identification of study subjects were carried out in the selected area with the help of trained health workers and the eligible study participants (Male aged  $\geq 15$  years, which have completed 15 year at the time of data collection and residing in the sampling area) were selected by systematic random sampling technique (Every fourth male individuals aged 15 year and above) till the required sample was met. House to house visits were made to each of study subjects in selected areas for collection of data. In case of non availability of the selected person during study, the next person in the list was included. Each individual was told about the purpose of the study, and confidentiality of the information was assured. Informed consent was sought from each study subjects. For adolescents aged 15-18 years, consent was obtained from parent and the individual. They were informed about the nature and the purpose of the study, the procedure involved and the potential risks and benefits. It was explained to the subjects the information they give us will be kept confidential.

A semi structured questionnaire was used for the study. It dividing in two domains and was prepared based on previous research studies under the guidance of expert in the field. It consisted following domains.

1. The first domain contained background information about the study subjects
2. Second domain contained information on use of tobacco, smoking habits of parents and siblings, peer influence, reason of initiation of tobacco.

The definition used for various parameters were as per the WHO STEPS guideline.<sup>10</sup> The smokers were defined as those who currently smoking tobacco daily in the form of cigarettes, beedis, hookah, chillum or any other smoke form. Similarly, smokeless tobacco users were defined as those who were currently using chewable tobacco product Gutka, Khaini, Snuffing, Zarda pan daily. The socioeconomic status of study subjects was determined as per modified Kuppuswami classification. Data analysis has been done using SPSS version 16.0 and Microsoft Office Excel 2007. To test significance of correlates of tobacco use, chi square test have been used as applicable. All p value was two tailed and values of  $< 0.05$  were considered as statistical significance.

**RESULTS:** Majority of the study subjects were seen in 15-19 years age group (20.2%) with least (7.3%) being above 60 years. Out of total study participants more than 1/3 (37.8%) of the study population had schooling of up to eighth class, and only 7.2% were educated above high school. As far as the occupational classification is concerned, maximum number of study population was formed by

laborer (44.9%), followed by unemployed and 9.9% of the study population were doing service.

According to Kuppuswami classification about 56.1% of the participant's belonged to upper middle class with least being 2.2% in the lower class. Majority of study subjects belong to Hindu (99.6%) by religion; maximum belonged to general caste (64.9%), followed by OBC (25%) and SC/ST (10.0%). More than half (54.7%) were having nuclear type of family while 45.2% were having joint family. (**Table 1**)

The overall prevalence of tobacco use among study participants was 54.6%, among the tobacco use prevalence of tobacco smoking was higher (28.1%) as compare to smokeless tobacco (26.5%). (**Table 2**)

**Table 1:** Distribution of study subjects according to their background characteristics

Characteristics	No.%
<b>Age (Years)</b>	
15-19	181 (20.2)
20-24	176 (19.6)
25-29	141 (15.7)
30-39	125 (13.9)
40-49	113 (12.6)
50-59	94 (10.4)
60+	66 (7.3)
<b>Social class (Modified kuppuswami class)</b>	
Upper	31 (3.4)
Upper Middle	503 (56.1)
Lower Middle	179 (19.9)
Upper Lower	163 (18.1)
Lower	20 (2.2)
<b>Religion</b>	
Hindu	893 (99.6)
Sikh	2 (0.2)
Other	1 (0.1)
<b>Caste</b>	
General	582 (64.9)
OBC	224 (25.0)
SC / ST	90 (10.0)
<b>Type of family</b>	
Nuclear	491 (54.7)
Joint	405 (45.2)
<b>Educational status</b>	
Illiterate	274 (30.5)
J.H. School	339 (37.8)
H. School	218 (24.3)
> H. School	65 (7.2)
<b>Occupation</b>	
Unemployed	167 (18.6)
Student	88 (9.82)
Laborer	403 (44.9)
Service	89 (9.9)
Own Business	149 (16.6)

**Table 2:** Prevalence of substance abuse among study participants

Tobacco use	N (%)
<b>Tobacco Smoking</b>	252(28.1)
<b>Smokeless tobacco</b>	238(26.5)
<b>Total</b>	<b>490 (54.6)</b>

**Table 3:** Association of sociodemographic characteristics with tobacco use

Characteristics	Tobacco habits		Total N (%)
	Smoking	Smokeless	
<b>Age (Years)</b>	<b>No.(252) %</b>	<b>No.(238) %</b>	
<b>15-19</b>	22 (8.7)	18 (7.5)	<b>40(8.1)</b>
<b>20-24</b>	27 (10.7)	39 (16.3)	<b>66(13.4)</b>
<b>25-29</b>	39 (15.4)	42 (17.6)	<b>81(16.5)</b>
<b>30-39</b>	46 (18.2)	42 (17.6)	<b>88(17.9)</b>
<b>40-49</b>	50 (19.8)	40 (16.8)	<b>90(18.3)</b>
<b>50-59</b>	43 (17.0)	33 (13.8)	<b>76(15.5)</b>
<b>60+</b>	25 (9.9)	24 (10.0)	<b>49(10.0)</b>
<b>Social class</b>			
<b>Upper</b>	12 (4.7)	11 (4.6)	<b>23(4.69)</b>
<b>Upper Middle</b>	147 (58.3)	138 (57.9)	<b>285(58.1)</b>
<b>Lower Middle</b>	51 (20.2)	52 (21.8)	<b>103(21.0)</b>
<b>Upper Lower</b>	37 (14.6)	34 (14.2)	<b>71(14.4)</b>
<b>Lower</b>	5 (1.9)	3 (1.2)	<b>08(1.6)</b>
<b>Caste</b>			
<b>General</b>	143 (56.7)	132 (55.4)	<b>275(56.1)</b>
<b>OBC</b>	83 (33.0)	74 (31.0)	<b>157(32.0)</b>
<b>SC / ST</b>	26 (10.3)	28 (11.7)	<b>54(11.0)</b>
<b>Type of family</b>			
<b>Nuclear</b>	146 (57.9)	148 (62.1)	<b>294(60.0)</b>
<b>Joint</b>	106 (42.0)	90 (37.8)	<b>196(39.6)</b>
<b>Educational status</b>			
<b>literate</b>	102 (40.4)	98 (41.1)	<b>200(40.8)</b>
<b>J.H. School</b>	98 (38.8)	90 (37.8)	<b>188(38.3)</b>
<b>H. School</b>	43 (17.0)	46 (19.3)	<b>135(27.5)</b>
<b>&gt; H. School</b>	9 (3.5)	4 (1.6)	<b>13(2.65)</b>
<b>Occupation</b>			
<b>Unemployed</b>	62 (24.6)	64 (26.8)	<b>126(25.7)</b>
<b>Student</b>	9 (3.5)	7 (2.9)	<b>16(3.2)</b>
<b>Laborer</b>	73 (29.0)	84 (35.2)	<b>157(32.0)</b>
<b>Service</b>	41 (16.2)	33 (13.8)	<b>74(15.1)</b>
<b>Own Business</b>	67 (26.5)	50 (21.0)	<b>117(23.8)</b>
<b>Marital Status</b>			
<b>Unmarried</b>	143(56.7)	125 (52.5)	<b>268(54.5)</b>
<b>Ever Married</b>	<b>109(43.2)</b>	<b>113(47.5)</b>	<b>222(45.5)</b>

The prevalence of tobacco use was minimum in age group of 15-19 years (8.1%) and it was gradually increases with increasing age with minor variations being maximum in age group of 40-49 years (18.3%). A statistically significant association was found between tobacco use and age (p<.001). The mean age for initiation of tobacco use (smoking or smokeless tobacco) was 16 year in our study. The prevalence of tobacco use was found to be more in those who were unemployed (25.7%), illiterate (40.8%), belonging to nuclear family (60.0%) as compare to joint family and were unmarried (54.5%).

It was also found in study that prevalence of tobacco uses among study participants according to their socio-economic status gradually increasing with their socio-economic status except in upper class, where it shows decreasing trends. The association was found statistically significant in case of smoking (p<.001), while this is insignificant in case of smokeless form of tobacco abuse (p>.05). (Table 3)

**Table 4:** Distribution of study subjects according to reason for initiation of tobacco

S. No.	Reason	Number (%)
<b>1</b>	For fun	204(47)
<b>2</b>	Peer pressure	146(33.6)
<b>3</b>	Stress	68(15.6)
<b>4</b>	Curiosity	38(8.7)
<b>5</b>	Other	34(7.8)

Table 4 shows that common reason for initiation for tobacco was fun and peer pressure in 47.0% and 33.6% respectively. It was observed that the association between sibling tobacco habits and the study subjects statistically significant (<0.0001). This shows the influence of sibling habits in developing tobacco habits in their wards. It was also observed that among the total subjects with tobacco habits 54.2% reported that their parents were also tobacco user.

Table 5 shows that majority has continued tobacco for pleasure and fun (32.7% and 22.5% respectively). No specific reason was given by 17.5% of the tobacco users.

**Table 5:** Distribution of study subjects according to reason for continuation of tobacco

S.No.	Reason	Number (%)
<b>1.</b>	Pleasure	<b>142 (32.7)</b>
<b>2.</b>	For Fun	<b>98 (22.5)</b>
<b>3.</b>	Relief of stress	<b>93 (21.4)</b>
<b>4.</b>	During Relaxation	<b>54 (12.4)</b>
<b>5.</b>	For company sake	<b>34 (7.8)</b>
<b>6.</b>	Habit	<b>39 (8.9)</b>
<b>7.</b>	Addiction	<b>34 (7.8)</b>
<b>8.</b>	No Spec. Reason	<b>76 (17.5)</b>

\*Multiple response answer

**DISCUSSION:** In the present study, prevalence of tobacco use was 54.6%. According to WHO-SEARO report (2001)<sup>11</sup>, the prevalence of current use of tobacco in any form in Uttar Pradesh was observed to be 45.0% among men. While lower prevalence in WHO SEARO report was due to inclusion of all age group, rural and urban population, different study design and earlier study. A large cross-sectional study of adults in Mumbai found that 69% of males were tobacco users, with 24% using cigarettes or bidi (Gupta, 1996)<sup>12</sup>, and It is estimated that 52–70% of males and 3–38% of females currently use tobacco in some form in different areas of India (Gupta (1996),<sup>12</sup>Bhonsle et al, (1992)<sup>13</sup>, Gupta& Ball, (1990).<sup>14</sup>

The age wise analysis shows, as the age increases from 15 to 49 years the use of smokeless tobacco also increases from 7.5% to 16.8%, followed by a little fall in the 50-59 years (13.8%) and 60+ age group(10.0%). The increase of tobacco use with increase of age may be due to increased numbers of peers, increased curiosity to experimentations and increase in psycho-social stress like responsibility of family especially to meet financial needs. While the fall in latter age group may be due to increased awareness to harmful effects of tobacco with the continued use. The prevalence increased with increasing age was also found in WHO-SEARO report (2001)<sup>11</sup> and NFHS-2 report.

Tobacco use were found to be statistically more common in nuclear family in comparison to joint family (62.1% for smokeless tobacco, 58.0% for smoked form in nuclear family and 37.8% and 42.0% respectively in joint family), and thus Tobacco use was found more in small family than large family. Which was almost similar to findings of WHO-SEARO report (2001)<sup>11</sup> and NFHS-2 report "pattern of substance use is more common in small family". Whereas the study by George et al (1994)<sup>15</sup> (Use of tobacco and alcoholic beverages by children and teenagers in a low-income coastal community in south India-1994) observed that the habit pattern correlated positively with number of children per family.

As the socio-economic status increases the consumption of tobacco products also increased in the present study so that maximum tobacco use was most common in those of upper Middle socio-economic status (57.9% for smokeless tobacco and 58.3% for smoking respectively) followed by those of lower middle socio economic status

So there is association of socio-economic status with tobacco use which is contrary to the findings of John (2004.)<sup>16</sup> stating that in rural India, percentage of people consuming tobacco are the highest among middle-income groups, whereas in urban India the prevalence is decreasing as we move from lower to higher income groups.

Findings of WHO-SEARO report -2001<sup>11</sup> also say that higher family income levels were associated with a lesser prevalence of current tobacco use. Rani et al. (2003)<sup>17</sup> and Subramanian et al. (2004)<sup>18</sup> have analyzed the pattern and distribution of tobacco consumption and health behavior of households in India, with the NFHS-2 (1998-1999) data.

Socio-economic deference's are more marked for smoking than for chewing tobacco.

The result observed in this study may be justified by saying that positive association of substance use with family income may be due to increased earning capability, increases the feasibility of purchasing any form of substances, also with increase socio-economic status more chance of increased involvement in recreational activities and attending parties which may have positive influence on alcohol and tobacco use. Increased socio-economic status may also be associated with other stress which again has additive effect on substance use.

The negative association with educational status in this study is supported by WHO-SEARO report -2001<sup>11</sup>- for tobacco use in Uttar Pradesh & Karnataka and by B.S. Deswal et al (2006)<sup>19</sup> Alcohol drinking in Arunachal Pradesh.

In this study overall tobacco products is being consumed more commonly in general caste (55.4% for smokeless tobacco and 56.7% for smoking)) as compare to S.C. (11.7% for smokeless tobacco and 10.3% for smoking) but John (2004)<sup>16</sup> in his study reported that, the proportion of households consuming most of the tobacco products were highest among the backward castes compared to the general population as also reported by Deswal et al (2006).<sup>19</sup>

In present study main reason for initiation of tobacco was fun and peer pressure but studies conducted by Shashidhar et al, 2011 in Bangalore revealed reasons for start smoking among students were style 58.8%, relieves tensions 17.6%, pleasurable 11.8% and 8.8% because of their friends. The study is observed subjects reporting 35.7% parental smoking. Here, in our study a parental smoking of 54.2%, which is very high compared to that reported in the Bangalore children.<sup>20</sup>

Overall use of tobacco was found to be significantly associated (P< 0.0001) with positive history of tobacco use in siblings. Our finding is agreement with the observation by WHO that adolescent whose parents and siblings use tobacco (any form) are particularly likely to use tobacco themselves.<sup>21</sup> Other studies in India support the observation too.<sup>22</sup>

**CONCLUSION:** We conclude by this study that, the prevalence of tobacco use was very high. The main reasons for high prevalence of tobacco use were tobacco use by parents and sibling, unemployment. The present study suggests the need for school-based tobacco prevention programs and it is better to prevent the initiation of the habit than trying to stop the habit, highlighting the role of primordial prevention.

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