

Original Article

EPIDEMIOLOGICAL STUDY OF TOBACCO USE AMONG MALE AGED 15 YEAR AND ABOVE IN URBAN AREA OF GHAZIABAD CITY (UP)

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ABSTRACT

Background: Tobacco use among children is becoming a serious problem in developing countries. Tobacco is the most easily legally available addictive substance which contributes significantly to premature death and long term suffering. This study is formulated with the objectives to study prevalence of tobacco habits among male age 15 year and above in urban area of Ghaziabad city (UP)**Material and Method:** A cross sectional study was conducted on 896 individuals aged ≥ 15 years by house to house visit, selected from urban field practice area of the Santosh medical college, Ghaziabad (U.P) by using Systematic random sampling between May 2010 to April 2011.**Result:** In the present study over all prevalence of tobacco use was 54.6 % (26.5% for smokeless tobacco and 28.1% for smoking). The prevalence of tobacco abuse was more in nuclear families than joint families. The age wise trend of smoking was found to be 8.1% in 15-19 years age group, and gradually increased 18.3% in 40-49 years age group, while decreased to 10.0 % in more than 60 years age. Factors such as substance use by parents, unemployment and sibling pressure and peer pressure were significantly associated with substance use by study subjects.**Conclusion:** Tobacco addiction is emerging as a big threat among children. The study documented prevalence and predictors of tobacco use. The study population is at risk of tobacco use related morbidity and mortality and needs action targeting the most vulnerable population.**Key words:** Prevalence, tobacco use, smokeless tobacco use, urban area

BACKGROUND

Tobacco is the leading preventable cause of death and ≥ 5 million people die globally from the effects of tobacco every year - more than that of HIV/AIDS, malaria, and tuberculosis. ¹ Tobacco is a serious threat to health² and a proven killer³ and ranks 2nd as a cause of death in the world. ⁴ Evidences accumulating since early 1950s indicate that more than 25 diseases are now known or strongly suspected to be causally related to smoking. ⁵ 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.⁶ 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.⁷

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.⁸ 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 ≥ 15 year in urban area of Ghaziabad city (UP) and also see the association of sociodemographic characteristics with tobacco use.

MATERIAL AND METHODS

A Community based cross-sectional study was conducted in an urban area, Mirzapur and G, E, F block of Pratap vihar in the field practice area of the department of Community Medicine, Santosh Medical Col-

lege, Ghaziabad (UP) among males aged ≥15 years during September 2010 to October 2011. It covers a total population of 9,971 residing in approximately 1,781 families. Sample size for present study was calculated at confidence interval of 95%, considering the population of male ≥ 15 years of age of study area to be 3800. The sample size using survey system software⁹ 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 ≥ 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 which prepared based on previous research studies under the guidance of expert in the field. It consisted following:

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.¹⁰ 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.

OBSERVATION AND 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 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. %
Age (Years)	
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)
Social class (Modified kuppuswami class)	
Upper	31 (3.4)
Upper Middle	503 (56.1)
Lower Middle	179 (19.9)
Upper Lower	163 (18.1)
Lower	20 (2.2)
Religion	
Hindu	893 (99.6)
Sikh	2 (0.2)
Other	1 (0.1)
Caste	
General	582 (64.9)
OBC	224 (25.0)
SC / ST	90 (10.0)
Type of family	
Nuclear	491 (54.7)
Joint	405 (45.2)
Educational status	
Illiterate	274 (30.5)
J.H. School	339 (37.8)
H. School	218 (24.3)
> H. School	65 (7.2)
Occupation	
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 (%)
Tobacco Smoking	252(28.1)
Smokeless tobacco	238(26.5)
Total	490 (54.6)

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).

Table 3: Association of socio-demographic characteristics with tobacco use

Characteristics	Tobacco habits		Total
	Smoking (n=252)	Smokeless (n=238)	
Age (Years)			
15-19	22 (8.7)	18 (7.5)	40(8.1)
20-24	27 (10.7)	39 (16.3)	66(13.4)
25-29	39 (15.4)	42 (17.6)	81(16.5)
30-39	46 (18.2)	42 (17.6)	88(17.9)
40-49	50 (19.8)	40 (16.8)	90(18.3)
50-59	43 (17.0)	33 (13.8)	76(15.5)
60+	25 (9.9)	24 (10.0)	49(10.0)
Social class			
Upper	12 (4.7)	11 (4.6)	23(4.69)
Upper Middle	147 (58.3)	138 (57.9)	285(58.1)
Lower Middle	51 (20.2)	52 (21.8)	103(21.0)
Upper Lower	37 (14.6)	34 (14.2)	71(14.4)
Lower	5 (1.9)	3 (1.2)	08(1.6)
Caste			
General	143 (56.7)	132 (55.4)	275(56.1)
OBC	83 (33.0)	74 (31.0)	157(32.0)
SC / ST	26 (10.3)	28 (11.7)	54(11.0)
Type of family			
Nuclear	146 (57.9)	148 (62.1)	294(60.0)
Joint	106 (42.0)	90 (37.8)	196(39.6)
Educational status			
literate	102 (40.4)	98 (41.1)	200(40.8)
J.H. School	98 (38.8)	90 (37.8)	188(38.3)
H. School	43 (17.0)	46 (19.3)	135(27.5)
> H. School	9 (3.5)	4 (1.6)	13(2.65)
Occupation			
Unemployed	62 (24.6)	64 (26.8)	126(25.7)
Student	9 (3.5)	7 (2.9)	16(3.2)
Laborer	73 (29.0)	84 (35.2)	157(32.0)
Service	41 (16.2)	33 (13.8)	74(15.1)
Own Business	67 (26.5)	50 (21.0)	117(23.8)
Marital Status			
Unmarried	143(56.7)	125 (52.5)	268(54.5)
Ever Married	109(43.2)	113(47.5)	222(45.5)

Figure in parenthesis indicate percentage

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

Reason	Number (%)
For fun	204(47)
Peer pressure	146(33.6)
Stress	68(15.6)
Curiosity	38(8.7)
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

Reason	Number (%)
Pleasure	142 (32.7)
For Fun	98 (22.5)
Relief of stress	93 (21.4)
During Relaxation	54 (12.4)
For company sake	34 (7.8)
Habit	39 (8.9)
Addiction	34 (7.8)
No Spec. Reason	76 (17.5)

*Multiple response answer

DISCUSSION

In the present study, prevalence of tobacco use was 54.6%. According to WHO-SEARO report (2001)¹¹, 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)¹², 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), ¹²Bhonsle et al, (1992)¹³, Gupta & Ball, (1990).¹⁴

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 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)¹¹ 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. This was almost similar to findings of WHO-SEARO report (2001)¹¹ and NFHS-2 report “pattern of substance use is more common in small family”. Whereas the study by George et al (1994)¹⁵ (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.)¹⁶ 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 -2001¹¹ also say that higher family income levels were associated with a lesser prevalence of current tobacco use. Rani et al. (2003)¹⁷ and Subramanian et al. (2004)¹⁸ 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 difference'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 - 2001¹¹- for tobacco use in Uttar Pradesh & Karnataka and by B.S. Deswal et al (2006)¹⁹ 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)¹⁶ 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).¹⁹

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.²⁰

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.²¹ Other studies in India support the observation too.²²

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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