Original Research Article

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Pattern of tobacco use among adolescents in urban slums of Jorhat, Assam

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ABSTRACT

Background: Tobacco use is a leading cause of preventable death worldwide and an estimated 250 million children and adolescents in developing countries die prematurely because of tobacco consumption. The objectives of the study were to determine the pattern of tobacco use among the adolescents and assess the factors associated with its use in urban slums of Jorhat, Assam.

Methods: A community-based cross-sectional study was conducted in two randomly selected urban slums of Jorhat district from September 2015 to February 2016 among 110 adolescents using predesigned pretested proforma. Data were analyzed using SPSS - trial version 16; risk analysis was done using odds ratios with 95% confidence intervals.

Results: 106 (96.36%) adolescents had ever used a tobacco product and 97 (88.18%) were current users. 57.73% consumed smokeless form and 3.1% used smoking form exclusively while 39.17% used both smoking and smokeless tobacco. Exclusive smokeless tobacco use was more common among girls. Smoking as well as combined smoking and smokeless tobacco was more common among boys. Gutkha was most common smokeless product (94.84%) and cigarette was commonest smoking form (34.02%) used. Awareness regarding its harmful effects was high (77.28%). Tobacco use in family is significantly associated with current use of tobacco (OR 5.88).

Conclusions: Tobacco consumption is an emerging threat to health of adolescents in urban slums. Smokeless tobacco use is high in our study, especially among girls. Tobacco use by family is a major reason behind using tobacco indicating an urgent need to carry out behaviour change communication (BCC) activities among adolescents and their family members.

Keywords: Tobacco, Smoking, Adolescent, Urban slums, Assam

INTRODUCTION

Tobacco use is a leading cause of preventable death world over, more so in developing countries. Throughout the world, 5 million people are killed each year due to use of tobacco products. According to WHO estimates for the year 2020, about 10 million deaths will be caused by use of tobacco and most of these deaths will occur in developing countries.² In India, the estimated number of tobacco users is 274.9 million with a lot of regional

variation.3 The tobacco situation in India is unique because of a vast spectrum of tobacco products available for smoking as well as smokeless use.4 Tobacco use increases risk for cardiovascular disease, lung and oral cavity cancers. In India tobacco consumption pushes approximately 150 million people in poverty.⁵

WHO identifies adolescence as the period in human growth and development that occurs after childhood and before adulthood, in the age group of 10 to 19 years. 6 The adolescent period is a time of considerable risk during

which they become particularly vulnerable to high risk behaviours and it is during this period that the habit of tobacco use starts. Daily approximately 5500 children and adolescents start using tobacco products in India, some as young as 10 years old. It is estimated that 250 million children and adolescents who are alive today would die prematurely because of consumption of tobacco and most of them are in the developing countries. B

The urban-slum population has emerged as a new section which is known to fare very poorly on issues related to health. In India, 28% of the total population was living in urban areas in 2001, with a future projection of about 38% (535 million) by 2026. The National Sample Survey (NSS) 58th round reported that in India, 1 in 7 urban residents is a slum dweller. Not much scientific literature exists on the patterns of tobacco use across the adolescents of urban-slums. This information shall enable us to identify gaps in implementation of health programmes and help in development of effective intervention strategies. So, the present study was undertaken to determine the pattern of tobacco use among the adolescents and assess the factors associated with its use in urban slums of Jorhat, Assam.

METHODS

The present community based cross-sectional study was carried out in the urban slums of Jorhat District, Assam from September 2015 to February 2016. Considering prevalence of tobacco consumption among adolescents as 47.9%, ¹² an absolute precision of 10% and a non-response rate of 10%, the required sample size was calculated to be 110. All Adolescent boys and girls in the age group of 10-19 years residing in the urban slums were eligible to participate in the study.

Sampling technique and data collection

A simple random sampling technique was adopted for selection of the slums. Considering that Jorhat district has five registered urban slums, two were randomly selected. Every consecutive house was visited starting from one end of the slums and data were collected till the required sample size was achieved. However, those adolescents who did not want to participate, not cooperating and guests visiting the slum at the time of data collection were excluded from the study.

Ethical clearance was obtained from the Institutional Ethical Review committee and informed consent was obtained from the subjects who were above the age of majority and from parents below that age. The participation was voluntary and purpose of the study was briefed to the study participants. Anonymity and confidentiality of information was ensured in order to encourage participation and elicit truthful response. Data were collected by personal interview in a separate room using a pre designed, pre tested proforma. Information on

socio demographic characteristics, pattern of tobacco consumption and awareness of effects of tobacco use were collected. The socio-economic status of the family was assessed by using the Modified Kuppuswamy's socio-economic status scale.¹³

Statistical analysis

Statistical analysis was done using SPSS for Windows, trial version 16 comprising of calculating proportion, mean and standard deviation. Association was determined using chi-square test with Yates correction or Fisher's exact test, as appropriate. P value <0.05 was considered significant for all tests. Risk factor analysis was done using odds ratios (OR) along with their respective 95% confidence intervals (CI).

Operational definition

- Ever use was defined as "having used tobacco even once in their lifetime".
- Current use was defined as "having used tobacco at least once in the last 30 days preceding the survey".
- Never use was defined as "having not used tobacco even once in their lifetime". 14

RESULTS

In the present study, out of 110 adolescents who were sampled, 22.74% belonged to age group of 10-13 years, 24.54% in 14-15 years age group and 52.72% were between 16-19 years of age; with a mean age of 15.48±2.51 years. 69.08% of the study participants were males and 30.90% were females. The mean age was almost similar in that of boys and girls (15.45±2.5 years for boys and 15.49±2.48 years for girls). Majority were Hindus (88.18%) and were from nuclear families (75.45%). Most of the adolescents belonged to lower socio-economic class (40%) followed by upper lower class (28.18%). However none of them belonged to upper socio-economic class.

Out of the total respondents, 106 (96.36%) reported that they had ever used a tobacco product. Of them, 67.27% were males and 29.09% were females. It was also observed that 97 (88.18%) adolescents used the tobacco product within the last month preceding the survey i.e. they were current users of tobacco and of them 63.63% were males and 24.54% were females.

Table 1 shows that among the current tobacco users, majority used smokeless form of tobacco (96.9%) and 57.73% had used the smokeless tobacco products exclusively. Moreover, 42.26% of the current users used smoking form of tobacco in our study; and among them 3.1% had exclusively used the smoking tobacco products. On the other hand, 39.17% of the current users consumed both smoking and smokeless forms of tobacco.

Table 1: Distribution of current tobacco users according to type of tobacco product consumed.

Type of tobacco	Current tobacco users		Total (0/)		
	Boys (%) N ₁ =70	Girls (%) N ₂ =27	Total (%) N=97	P value	O.R (95% CI)
Exclusive smokers (A)	3(4.28)	0(0)	3(3.1)	0.5578	
Exclusive smokeless tobacco users (B)	31 (44.28)	25 (92.59)	56 (57.73)	0.0001*	0.063 (0.014-0.289)
Both smokers and smokeless tobacco users (C)	36 (51.42)	2 (7.4)	38 (39.17)	0.0001*	13.23 (2.9-60.19)
Current smokers (A+C)	39 (55.71)	2 (7.4)	41 (42.26)	0.0001*	15.72 (3.45-71.58)
Current smokeless tobacco users (B+C)	67 (95.71)	27 (100)	94 (96.9)	0.5578	
Current tobacco users (A+B+C)	70 (100)	27 (100)	97 (100)	0.1055	3.02 (0.93-9.8)

^{*}Statistically significant.

Table 2: Factors associated with use of tobacco products.

Characterstics of adolescents	Ever users N=106	Current users N ₁ =97	Ex- users N ₂ =9	^{χ2} value p value	O.R (95% CI)			
Age (years)								
10-13	24	20 (83.33)	4 (16.7)	$\chi^2 = 2.79$				
14-15	27	26 (96.3)	1 (3.7)	k = 2.79 p=0.227				
16-19	55	51 (92.7)	4 (7.3)	p=0.227				
Sex								
Male	74	68 (91.9)	6 (8.1)	$\chi^2 = 0.046$	1.17 (0.27-5.01)			
Female	32	29 (90.6)	3 (9.4)	p=0.83				
Type of family								
Nuclear	80	73 (91.25)	7 (8.75)	$\chi^2 = 0.028$	0.86 (0.16-4.47)			
Joint	26	24 (92.3)	2 (7.7)	p=0.867				
Religion								
Hindu	93	85 (91.4)	8 (8.6)	$\chi^2 = 0.012$	0.88(0.10-7.71)			
Muslim	13	12 (92.3)	1 (7.7)	p=0.912				
Tobacco used in family								
Yes	84	80 (95.23)	4 (4.77)	$x^2 = 7.24$	5.88 (1.43-24.22)			
No	22	17 (77.27)	5 (22.7)	p=0.007*				
Awareness of harmful effects of tobacco								
Yes	85	78 (91.76)	7 (8.24)	$\chi^2 = 0.036$	1.17 (0.22-6.10)			
No	21	19 (90.47)	2 (9.53)	p=0.85				
Awareness of effects of passive smoking								
Yes	40	38 (95)	2 (5)	$\chi^2 = 1.01$	2.25 (0.44-11.43)			
No	66	59 (89.4)	7 (10.6)	p=0.31				

^{*}statistically significant.

Among the male current users, majority (95.71%) used smokeless tobacco products. Of them 44.28% were exclusive smokeless tobacco users and 51.42% used both smoking and smokeless form of tobacco. Smoking form of tobacco was practiced by 55.71% adolescent boys and among them, 4.28% were exclusive smokers. Among the female current users, all of them used smokeless tobacco products and among them 92.59% used the smokeless products alone. Moreover, 7.4% of the girls consumed both smoking and smokeless forms of tobacco. Overall there was a significant difference in prevalence of exclusive smokeless tobacco use among boys and girls (p=0.0001). Exclusive smokeless tobacco use was more common among girls compared to boys (OR 0.063, 95% CI 0.014-0.289). However use of smoking form of tobacco as well as use of combined smoking and smokeless tobacco was more common among boys than girls (OR 15.72, 95% CI 3.45-71.58 & OR 13.23, 95% CI 2.9-60.19 respectively) (Table 1).

Among the current smokers, majority (34.02%) smoked cigarette followed by beedi (4.12%). Gutkha was used by most of them (94.84%) as smokeless tobacco product followed by paan masala (68.04%) and zarda paan i.e. betal quid with tobacco (61.85%). Among the boys, cigarette (34.02%) and gutkha (68.04%) were the most common smoking and smokeless forms of tobacco consumed. However, majority of the females used beedi (2.06%) as smoking form and gutkha (26.8%) as smokeless form of tobacco (Figure 1 and 2).

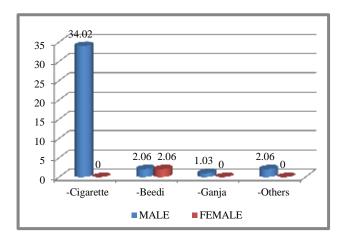


Figure 1: Distribution of current users according to smoking form of tobacco used (%).

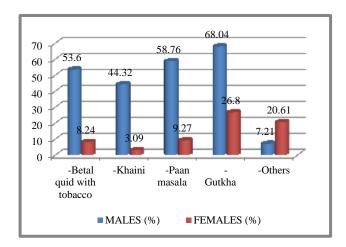


Figure 2: Distribution of current users according to smokeless form of tobacco used (%).

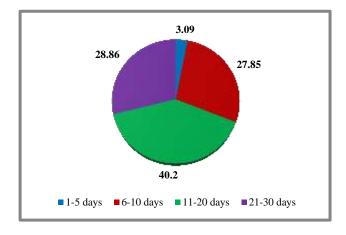


Figure 3: Distribution of current users according to frequency of tobacco use in the last month preceding survey (%).

In our study, most of the current users first started using tobacco at an early age between 10-13 years of age (44.33%) followed by 14-16 years (24.74%). Interestingly, 22.68% of them had initiated using tobacco before 10 years of age. The most common reasons for initiation of tobacco as cited by them were peer pressure (29.9%) and for fun (26.8%) followed by curiosity (22.6%), for show off (8.24%), family influence (5.15%), to relieve stress (4.12%) and others (3.1%). Majority (40.20%) of the current users claim to have used tobacco for 11-20 days in the last 30 days preceding the survey. (Figure 3). Money for tobacco consumption was obtained from their regular pocket money (60.37%) mostly whereas 32.07% of the adolescents took money from their friends in order to consume tobacco.

It was also evident that family members of 82.47% of current users consumed some form of tobacco product. Table 2 shows that tobacco use in family is significantly associated with current use of tobacco which was more common among those adolescents whose family members consumed tobacco in any form (OR 5.88, 95% CI 1.43-24.22). However, age distribution, sex, type of family and religion were not found to have any significant association with current use of tobacco in our study (Table 2).

85 (77.28%) study participants were aware of the harmful effects of tobacco use. Among them, majority gained information from electronic media (84.71%) followed by print media (8.23%) and textbooks (3.53%). However; it was also observed that awareness of the harmful effects of tobacco use had no association with current use of tobacco product. It was also seen that 40 (36.36%) respondents were aware of the harmful effects of passive smoking in our study (Table 2).

DISCUSSION

Tobacco use among adolescents is an emerging public health problem and control of the tobacco epidemic is a major challenge towards our society. In our study, it was observed that a high proportion (96.36%) of adolescents had ever used a tobacco product. Another study in Assam revealed that ever use of tobacco among school going adolescents was 26.5% which was much lower than findings of present study. ¹⁵ Studies by other researchers in different parts of India have reported that ever use of tobacco varies from 1.9% in Delhi to 75.3% in Mizoram. ¹⁶⁻²⁰

The overall prevalence of current use of tobacco in any form was 88.18% in our study and among them 63.63% were males and 24.54% females. The results are much higher than the Global Youth Tobacco Survey (GYTS) India 2009 report (14.6%).²¹ NFHS 4 (2015-16) reports indicate that in Assam, 63.9% men and 19.7% women use tobacco in any form which is at par with findings of the present study.²² According to Global Adult Tobacco Survey 2(2016-17) prevalence of tobacco use among

young population is 12.4%.²³ Also other studies in Assam have shown that current use of tobacco among school going adolescents was 16.75% and 32.9% which are much lower compared to findings of our study.^{15,24} The higher prevalence of tobacco use among adolescents in urban slums may be attributed to lack of recreation facilities, lesser access to health education and over all compromised living condition which induces them to inculcate this habit.

Smokeless form of tobacco was most commonly used in our study where 57.73% of current users consumed only smokeless tobacco products whereas 39.17% used both smoking and smokeless form and only 3.1% used smoking form of tobacco exclusively. Another study in Assam had shown an overall prevalence of current smokers as 3.25% while use of Gutkha products was 77.61%. 15 The GYTS (2009) stated that 4.4% of the students were currently smoking cigarettes and 12.5% were using other tobacco products. ²¹ Another study in urban slums saw that the proportion of tobacco chewing among adolescents was 80.22% and both chewing and smoking was 19.78%.²⁵ The findings are consistent with findings of the present study. In the North Eastern part of India, use of areca nut is a part of the custom of the people and this may be the factor responsible for easy accessibility and more smokeless tobacco use among adolescents in our study. Moreover, majority of the boys in our study used both smoking and smokeless form of tobacco while exclusive smokeless tobacco was found to be more common among girls (p<0.05). This may be attributed to the fact that males have a lesser inhibition for obtaining all types of tobacco products. GATS 2 (2016-17) has reported that smoking is largely a problem among men whereas use of smokeless tobacco is quite widespread among both men and women.²³ These reports are consistent with our findings. Cigarette was the most common smoking form of tobacco and Gutkha was the commonest form of smokeless tobacco used by the adolescents in our study. However, smoking of Beedi was more common among the girls. Findings are similar to an earlier study in Assam.15

Majority of the tobacco users first started using it at 10-13 years of age i.e. during their early adolescence which is a very vulnerable age group where behavioural, psychological and emotional changes are observed. Moreover, 22.68% had initiated using tobacco even before 10 years of age. Similar findings were reported by earlier studies. ^{18,25} So, special attention needs to be given to this age group by adopting behavioural change communication strategies urgently to protect them from the harmful effects of tobacco use in later life.

The common reasons for initiation of tobacco were peer pressure, trying for fun, and curiosity. Similar findings were observed by other researchers. ^{15,19,25} This is a major challenge as friends have a major influence in the lives of the adolescents. Also the life style in slums and discontinuation from studies may be playing a role in the tobacco use among adolescents. It was also evident that

most of current users spent their pocket money (60.37%) to avail tobacco products. An earlier study also saw similar results where more than a third spent a significant part of their pocket money on tobacco consumption. ¹⁸ Hence, it is of utmost importance for parents and guardians to keep an eye on how their children spend the money provided to them.

An important observation in our study was that tobacco use was found to be significantly more among those adolescents whose family members also used a tobacco product which shows the role of parents and guardians in influencing such habits in their children. Similar findings were observed in other studies. However, age distribution, sex, type of family and religion were not found to have any significant association with current use of tobacco in our study. Yerpude et al also did not find any significant difference in practice of tobacco use between male and female adolescents. ²⁵

Awareness regarding the harmful effects of tobacco was high in our study (77.28%), but 91.76% of them were still currently using tobacco products. Also, 36.36% adolescents were aware of the harmful effects of passive smoking. This shows that the high level of awareness was not fully able to curb the habit of tobacco use in our study population. So there is a rising need for increasing the level of knowledge regarding the effects of tobacco use on health among the adolescents by using various medium in order to make them healthy and productive population of the future.

CONCLUSION

The high prevalence of tobacco use among the adolescents residing in urban slums reveal that despite many initiatives like awareness measures and strict legislatures present, tobacco use is still rampant among them, which if unchecked will lead to serious health hazards. Smokeless tobacco use is high, especially among girls in our study. Tobacco use by family members was a major reason behind using tobacco. So, there is an urgent need to carry out behavior change communication (BCC) activities among adolescents and their family members in the urban slums in order to motivate them with informatory knowledge. More such surveys need to be carried out in urban slums to gain a detailed knowledge on impact of government policies and identify gaps in its implementation in order to reach out to this section of the community.

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