A study of smokeless tobacco consumption amongst secondary school male students in tribal area of thane district of Maharashtra, India

Dasi H Rao[1], Harshalkumar N Mahajan[2*]

[1]Associate Professor, [2]Resident Medical Officer, Department of Community Medicine, Lokmanya Tilak Muncipal Medical College and General Hospital, Sion, Mumbai, Maharashtra, INDIA.
Email: drharshalmahajan@gmail.com

Abstract
Background: In recent years, it has been observed that the consumption of tobacco in different forms is increasing at a very rapid rate, thereby emerging as an modern epidemic. Epidemiological research over the past several years has confirmed the harmful effect of tobacco consumption on health. Tobacco consumption usually begins in adolescence -- the time for discovery, challenge and experimentation. **Methods:** A cross-sectional study was conducted with sample size of 78. Study area was school in field practice area of RHTC Vaitarna, Thane, Maharashtra. Data collection was done through pre-designed, semi-structured interview schedule to record the general profile, socio-economic status, details regarding tobacco consumption and knowledge about health hazards; hand-held torch for oral screening and IEC Material. **Results:** The prevalence of smokeless tobacco consumption in given setting is 3.84%. The association of stress factors, poor academic grading, consumption of tobacco in friends was found to be statistically significant (P<0.05) with smokeless tobacco consumption in students. 95% students were aware of the health hazards of tobacco consumption and about 91% of total students in general had a negative attitude towards tobacco consumption. **Conclusions:** As the study suggests, the risk factors are from various domains, hence an integrated approach is required to take care of psychological as well as social factors in addition to health education. This is required to make any preventive programme successful in this field. Further research to find out other risk factors and preventive interventions for school going male adolescents should be made in a co-ordinate way at PHC level to curb this emerging epidemic.
Key Word: Smokeless tobacco, Tribal area, Male students, Secondary school

*Address for Correspondence:
Dr. Harshalkumar N. Mahajan, Department of Community Medicine, Lokmanya Tilak Muncipal Medical College and General Hospital, Sion, Mumbai, Maharashtra, INDIA.
Email: drharshalmahajan@gmail.com

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 05 October 2018

INTRODUCTION

In recent years, it has been observed that the consumption of tobacco in different forms is increasing at a very rapid rate, enough to be viewed as an emerging epidemic. Epidemiological research over the past several years has confirmed the harmful effect of tobacco consumption on health.[1] Tobacco consumption usually begins in adolescence - the time for discovery, challenge and experimentation.[2] 1t's observed that 40% of tobacco consumed in India is in smokeless form and these products like Gutkha. Zarda, pan masala are comparatively cheaper and easily available and also, due to lack of awareness about health hazards and because of lesser attached to them than their smoked counterparts, have got a strong foothold in the society. Further; the phenomenal growth in smokeless tobacco industry in last two decades and extensive marketing has lead to widespread addiction in school going children.[3,4] The ill effects of tobacco on health may range from oral lesions to oral cancers to cancers at different site and even systemic effects.[5,6] The different components of these products like slaked lime, areca nut tobacco consists of nicotine and other toxic components like nitrosamines, which have been proved to be carcinogenic.[7] This causes

severe physical, psychological and economical implications" for these children, who in turn are future of the country, making this issue grave. This data availability regarding tobacco consumption and awareness about health hazards is further scarce, when it comes to tribal areas compared to big cities. Hence, this study was undertaken, in the given tribal set-up in school going children. There are only a few studies on prevalence and initiation of smoking and smokeless tobacco use among children in our country[3,4] The risks of tobacco use are highest among those who start early and continue its use for a long period. The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction.[6] The most common reasons cited for children to start using tobacco are peer pressure, parental tobacco habits and pocket money given to children.[7] The present cross-sectional study was undertaken to determine the prevalence and age at initiation of tobacco smoking or tobacco chewing among school children in Thane district of Maharashtra.

OBJECTIVES

1. To determine prevalence of smokeless tobacco consumption in male secondary school students in tribal area;
2. To determine association between psycho-socio-economic factors smokeless tobacco consumption;
3. To assess awareness about health hazards of smokeless tobacco consumption;
4. To conduct health-education sessions to bridge the gap in the knowledge and enhance healthy practices.

MATERIALS AND METHODS

A cross-sectional study was carried out in the secondary school in field practice area of Rural Health Training Center, Vaitarna, Thane district, Maharashtra. All male students in the school from standard 7th to standard 10th were included in the study. As few students were absent during the course of study, they could not be included. The total sample size thus amounted to 78 students. The study was performed over a period of 3 months from February 2016 to April 2016. The study protocol was explained to the principal and school authorities and permission was obtained from them. During initial part of study, interactive sessions were arranged for students. This was done to establish a rapport with students, wherein, the actual topic of study was never discussed. Once a good rapport was achieved, the interview session was conducted with the help of a pre-designed, semi-structured interview schedule consisting of questions related to general information of the child, tobacco consumption, and awareness about health hazards related to the same. Every student was individually taken to a separate room during the interview, with no peers and teacher around. They were briefed about the objectives of the study and were assured that confidentiality would be maintained during the course of study with respect to the information provided by them. A health education session was conducted for the students, with the help of IEC material in the form of flip charts. The lesions related to tobacco, its addictive nature, how to stay away from it and how to cope up with peer pressure and stress was explained to the students, with emphasis being given on prevention being better than cure. Interactive session was performed, wherein, queries' related to the topic were answered. A red box was also provided to maintain anonymity of the person asking the question. The response given by the students were recorded and analyzed using SPSS Version 20.0 and Open Epi Version 2.3. Chi square test was used for analysis of categorical data.

RESULTS

The students included in the study were from standards 7th to 10th, comprising 24(30.8%), 29(37.2%), 13(16.7%), 12(15.4%) children of the total study group respectively, comprising total of 78 male students. The age of students ranged from 11 to 17 years, the mean age of the students in the study being 14 years. Majority of the students 69(88.5%) were Hindu, of which 38(55.1%) belonged to Kunbi tribe. 69.2% students belonged to nuclear family and 30.8% belonged to joint family. 42.3% of mothers and 16.7% of fathers of students in study group were illiterate. 17.9% of the students in the study were from below poverty line, 50% were poor, 30.8% from middle and 1.3% from higher class as per modified BG Prasad classification. 53.8% of the students stayed in Kaccha house and 46.2% in pukka houses. The overall prevalence of smokeless tobacco consumption was found out to be 3.84% (3 out of 78) 2 children consumed in past but hadn't consumed in past 1 month, so not considered as "current" chewers, hence not considered for calculation of prevalence. Kolhapuri was the commonest brand consumed. The mean age of initiation of tobacco consumption was found to be 12.5 years. 40% of students started tobacco consumption before 12 years of age and 60% before 13 years. Majority chewers had been consuming tobacco since less than 6 months. Source of knowledge about tobacco products in chewers got from friends in 60% students and in rest of students from siblings. 40% students gave peer pressure as reason for starting tobacco consumption and 20% each for relieving stress, for fun, or for experimentation. Source of money

for majority of students (98.7%) was from parents. The average money at disposal is around Rs.3.2, whereas mean currency spent on tobacco per day is Rs.0.83. 66% of chewers spend 50% of money obtained per day on tobacco products. All chewers started off with less than 1 packet per day (As shown in Table 1). Presently, 2 out of 3(66%) continue with less than 1 packet or piece per day, but 1(33%) consume more than 1 packet per day. The chewers continue to consume it due to peer pressure, stress relief, for relaxation, each accounting for 33% respectively. Almost 40% of students were aware of their teachers consuming tobacco, of which 45% reported that teachers consume tobacco outside school campus. Almost 71% of students had one or more family member consuming tobacco. Almost 95% students were aware that tobacco is hazardous to health. 62.8% of the total students had received anti-tobacco health education before. 71.4% from teachers, 20.4% from parents, 6.2% from friends and only 2% from doctors. 90.5% of students were aware of the carcinogenic effect of tobacco and 70.3% were aware that tobacco can lead to oral lesions namely staining of teeth. 90.7% of students in general had a negative attitude towards tobacco consumption, 4% each showing a tough and rebellious image respectively. 2 out of 3(66.7%) of the chewers wish to quit tobacco. 2 out of 3(66.7%) have not yet given up because they find it pleasurable and 1(33.3%) haven't, as he never cared. Majority students who have quit, or want to quit are because of awareness created by friends. 1 student who is a current chewer shows development of oral lesions. The association of tobacco consumption with different variables like religion, socio-economic status, type of family, literacy level of parents, consumption of tobacco in family or teachers, hobbies, any stress factor in family was not found to be statistically significant (p>0.05) [As shown in Table 2]. On the other hand, factors like tobacco consumption in friends, poor academic grading, any stress at school were found to be significantly associated with consumption of smokeless tobacco in students (p<0.05) [As shown in Table 3]. It was seen that tobacco consumption was also significantly associated with the development of oral lesions in students currently consuming tobacco (p<0 05 [As shown in Table 4].

Table 1: Distribution of smokeless tobacco products consumed in study population

Tobacco Products	No. of current chewers	No. of chewers but not current	Total
Kolhapuri pudi	2	0	2
Heera pudi	0	1	1
Pan masala	1	1	2
Total	3	2	5

Table 2: Association of Risk Factors with Tobacco Consumption

Risk factors	p-value
Religion	0.8159
Type of family	0.9218
Socio-economic status	0.8950
Level of literacy of Mother	0.7833
Level of literacy of Father	0.9550
Consumption of Tobacco by Family	0.8816
Consumption of Tobacco by Teachers	0.5376
Stress at home/family	0.2396
Hobby	0.9620

Table 3: Effect of Risk Factors among study population

Risk factors	Tobacco Users	Tobacco Never Users	Total
Friends consume tobacco			
Yes	04	14	18
No	01	59	60
Grading Academic			
Below average	03	10	13
Average and above	02	63	65
Stress at School			
Yes	02	00	02
No	03	73	76

Table 4: Association of effcts of tobacco consumption amongst study population

Effects of Tobacco Consumption	p-value using Yates correction	p-value using mid-p exact test
Tobacco Consumption in friends	0.010	0.0095
Poor Academic Grading	0.030	0.0327
Stress at school	0.0001	0.0030
Development of Oral lesions	0.015	0.0384

DISCUSSION

The prevalence of 3.84% obtained in the present study was lower as compared to the study done in low income group in Delhi was of 4.6%.[2] This low prevalence value may be due to the fact that the study area being in a tribal set up, there is a poor availability of tobacco shops. The other reason for a low prevalence maybe due to the fact that school dropouts are not considered in this study, which tend to be higher in the given tribal set up. The mean age of initiation of tobacco consumption at 12.5 years and 60% of children starting tobacco consumption before 13 years of age was similar to the finding obtained in above mentioned study.[2] The high percentage of students seen in this as well as other studies who have high influence of friends, highlights the importance of peer pressure on this issue. At the same time, as majority students who have quit tobacco or wish to, are because of their friends, also brings forth the importance of peer groups to dissuade students from this habit. 95% children

in our study are aware of health hazards related to tobacco, compared to 80% in above mentioned Delhi based study may be due to anti tobacco education being already given in almost 63% students.[2] The association between stress factors, poor academic grading, and consumption of tobacco in friends was found to be highly significant with smokeless tobacco consumption in students in this study. These findings are similar to other studies done in similar age group in school children in a Mumbai based study done in school children on smokeless tobacco consumption.[3] Thus, it is clear that, different psycho-social factors are associated with tobacco consumption. For any intervention program to be made successful in this field, in addition to health education, there is a need to identify various risk factors and sort them out on a priority basis. An integrated approach consisting of public health and psychiatry thus required.[8] There are very few studies done in tribal set up. Hence this issue should be taken up seriously, wherein a coordinated program should be made at PHC level to curb this epidemic, comprising of preventive, curative and promotive approach like strict tobacco product regulations and regular health check-ups to pick up early lesions, promotion of healthy tobacco-free lifestyle, etc.[9] Execution at the sub-center, village or school level should be along the lines of this program, plus individual sorting out of problems at ground level should be performed as stated, by an integrated approach. Need for further research activity to understand this public health evil better, showed a negative approach towards tobacco at the time of study, this should be maintained and there diversion towards tobacco use in future should be avoided by consistent efforts at this very age through effective preventive strategies.

CONCLUSION

As the study suggests, the risk factors are from various domains, hence an integrated approach is required to take care of psychological as well as social factors in addition to health education. This is required to make any preventive programme successful in this field. Further research to find out other risk factors and preventive interventions for school going male adolescents should be made in a co-ordinate way at PHC level to curb this emerging epidemic.

REFERENCES

1. Bartal M. Health effects of tobacco use and exposure, Monaldi Arch Chest Disease 2001;56:545-54
2. Singh V, Pal HR, Mehta M, Kapil U, Tobacco Consumption and Awareness of their Health Hazards Amongst Lower Income Group School Children in National Capital Territory of Delhi. Indian Journal of Pediatrics 2007;44:293-96
3. Mukherjee K, Hadaye RS. Gutkha Consumption and its Determinants among Secondary School Male Students. Indian Journal of Community Medicine 2006;31(3):177-80
4. WHO EMRO press release (29/05/2008); Tobacco free youth - World No Tobacco Day Theme, 2008; Page 3-5.
5. Report- Harm reduction in nicotine addiction helping people who can't quit. A report by tobacco advisory group of Royal College of Physician's, London 2007;129-161
6. WHO 2005, Global Facts on Tobacco or Oral Health, 2004; Page-1-2.
7. WHO. Recommendation on Smokeless tobacco products, by WHO scientific advisory committee on Tobacco products regulation. 2008; Page-1-5.
8. Luk J, Rau M. A study on habits of tobacco use among medical and non-medical students of Kolkata. Lung India 2011;28(1):5-10
9. WHO report 2008, Global Youth Tobacco Survey; 2008; Page-11-15