A cross sectional community based study on the prevalence of tobacco smoking (considering only cigarette and hookah smoking) among the urban youth

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ABSTRACT

Background: The reasons for an adolescent to start smoking are mainly psychological. A proper assessment of these factors can help us reduce the prevalence of smoking among youth and save them from both its short term and long term harmful effects.

Aims: To study the prevalence of tobacco usage through cigarette and hookah smoking in the age group of 17-22 years and find out the factors mainly responsible for the prevalence.

Methods: A Cross sectional community based study was conducted among students of different colleges (inter and degree) of Hyderabad of the age group 17-22 years using a predesigned and pretested questionnaire.

Results: Different psychological reasons such as to manage stress, to look stylish etc and misconceptions like hookah smoking is less harmful than cigarette smoking were responsible for the prevalent smoking habit among the individuals.

Conclusions: There is no single way to prevent youth smoking. A proper understanding of the responsible factors will help promote smoking prevention programs. The nature of the social influence may well change with age. Close friends may exert different types of influences at different ages, and smoking may take on different roles in establishing and maintaining friendships at different ages or for different youth. Understanding the role that smoking plays in the interactions of youth and how this role might vary or change with age is an area that is ripe for research.

Keywords: tobacco smoking; prevalence; urban; youth

INTRODUCTION:

Tobacco is a commonly abused drug by the youth. Today more people are smoking and consuming more cigarettes per capita than ever before. Young people who smoke experience an early onset of cough, phlegm production and shortness of breath on exertion. The earlier a person begins to smoke the greater is the risk of diseases such as chronic bronchitis, emphysema, cardiovascular diseases and lung cancer. Because of the long delay between cause and full effect, people tend to misjudge the hazards of tobacco. Young people do not witness high morbidity and mortality until they reach middle age.[1]

In a study by Indian Council of Medical Research (ICMR), which provide an estimate of the cost of treatment of three major tobacco related diseases (cancer, heart disease and chronic obstructive pulmonary disease), it was found that the government spent about Rs 277.6 million in 1999. The nationwide sale value during that period was Rs 244 billion. Since only a fraction goes to tobacco sales and expenditure for treating tobacco related diseases is high. Thus, tobacco is of no economic benefit to the nation while being a major health hazard. [2]

The premature deaths due to harmful effects of smoking and the number of youth addict to smoking will continue to rise unless appropriate measures are taken to find out the factors responsible for prevalence and steps are taken to decrease it.

According to Heningfield and Benowitz substance comparison chart, nicotine is more addiction prone than...
even cannabis, caffeine, heroin and alcohol. Processed from the leaves of plants in the genus Nicotiana, tobacco is mainly an agricultural product.

In India, tobacco is grown locally in the state of Andhra Pradesh. Tobacco products such as chutta, beedi, snuff, cigarettes, hookah and a mixture of tobacco, betel leaf, areca nut and lime are used by people living in Andhra Pradesh. The present study targets the prevalence of smoking (only cigarettes and hookah) among the youth. Hookah (hubble-bubble, Indian pipe) is an indigenous device, made out of wooden and metallic pipes, used for smoking tobacco. [3] Nicotine contained in tobacco products acts as a stimulant and is one of the many factors leading to continued smoking among the people particularly youth. Although the amount of nicotine inhaled with tobacco smoke is quite small, it is still sufficient to cause physical/psychological dependence. Inhalation of the vaporized gas into the lungs is a quick and very effective way of delivering drugs into the bloodstream. [4]

**Tobacco production and consumption in India**

India is the second largest producer and third largest consumer of tobacco in the world. India's Tobacco Board is headquartered in Guntur, Andhra Pradesh. The National Survey on Drug Use and Health estimates that each day, over 4,000 people under the age of 18 years try their first cigarette. This amounts to more than 730,000 new smokers every year.

According to ICMR, in India, each year nearly 0.16 million people develop cancer, 4.5 million develop heart diseases and 3.9 million develop chronic obstructive pulmonary disease (COPD) as a result of consumption of tobacco. [2]

The tobacco used in hookahs in absolutely distinct from the tobacco used in any other form of smoking. It is essentially a blend of fresh tobacco leaves, honey and pulp of semidried/completely dried fruits. An aetiological study on hookah smoking and cancer by Sajid et al. [5] found that overall serum CEA (Carcino embryonic Antigen) levels (a tumour marker for cancer) in exclusive hookah smokers, who had been using weight equivalents of up to 60 cigarettes of tobacco in daily sessions for decades, were higher than in non-smokers but substantially lower than those recorded in cigarette smokers involving the same amount of tobacco.

The reasons to smoke are mostly psychological. Experimentation with smoking as a symbol of adult behaviour is common in adolescence. It is suggested that three factors are associated with young people smoking: peer pressure, following the example of sibling and parents, and employment outside home. If a child's older sibling and both parents smoke, the child is four times as likely to smoke as one with no smoking model in family. [1]

**Aims and objectives:**

To study in urban youth:

1. The prevalence of tobacco usage, considering only cigarette and hookah smoking.
2. The factors responsible for tobacco smoking, such as peer influence, parental influence, easy availability and accessibility, lack of adequate knowledge about the adverse effects of smoking and misconceptions about smoking based on review of literature done on other studies conducted on smoking prevalence.

**MATERIAL AND METHODS:**

The Institutional Ethics Committee, Gandhi Medical College approved the study protocol. The survey questionnaire was constructed based on Green's PRECEDE model. [6] The Precede-Proceed model helps health program planners, policy makers, and evaluators analyse the situation and design an efficient health program. PRECEDE is based on the ideology that, just as medical diagnosis precedes a treatment plan, an educational diagnosis of the problem is essential before developing and implementing an intervention plan. PRECEDE is an acronym for Predisposing, Reinforcing and Enabling Constructs in Educational Diagnosis and Evaluation. According to this model, the diagnosis should focus on three important factors i.e. i) predisposing factors, ii) enabling factors, and iii) reinforcing factors. Greene also argues that the most effective factors should be identified and given priority as a focus of intervention.

**Predisposing factors** include knowledge, attitudes, beliefs, personal preferences, existing skills, and perceptions towards the desired behaviour change.

**Enabling factors** are the skills, resources or barriers that can help or hinder the desired behavioural changes as well as environmental factors.

**Reinforcing factors** are those subsequent to a behaviour that provide the continuing reward or incentive for the behaviour and contribute to its persistence or repetition.

**Demographic and socioeconomic variables:** A number of demographic variables were examined such as age, gender, etc.

A cross-sectional community based study was conducted among 750 students from different colleges (inter and degree) of Hyderabad city, Andhra Pradesh, India, in the age group 17-22 years between May-June 2012. A two-stage random sampling method was adopted to select the students from these colleges. A predesigned and pretested questionnaire was prepared with questions pertaining to demographic data, predisposing factors, enabling factors and reinforcing factors and their influence on smoking among youth.
An informed consent form was attached to each questionnaire. The subjects were informed of the purpose of the survey and were assured that their responses would be kept confidential.

**Categorisation:** In this survey, the subjects were classified first into smokers and non-smokers based on question 1. (Have you ever smoked, even if only a few puffs?). The smokers were further classified into current smokers and current non-smokers based on question 3. (When was the last time you smoked (cigarette/hookah)?). The same question (Q3.) was used to categorize the current smokers into low frequency and high frequency smokers and later the current non-smokers and non-smokers were put under non-smokers.

**Statistical analysis:** The data were analysed and Mean and Standard Deviation were calculated and Chi square values were also computed. Rationale for Chi square test is that there is less number of local studies as yet. Correlation analysis was not done because the cut off points and normal/abnormal analysis study subjects was preferred wherever it can be done.

**RESULTS:**
In our study, out of 750 subjects, 19% are current smokers and 81% are current non-smokers. Out of the current smokers, low frequency smokers (students who smoked more than a month back and 1 month back) are 40%, high frequency smokers (students who smoked 1 week back and less than a week back) are 35%, and number of subjects who smoked just once are 25%. The mean age of initiating smoking is found to be 18 + 1.85 years.

**Considering predisposing factors:**
**Peer influence:** In our study, 72% of the current smokers were offered to smoke by their friends. Number of male current smokers who were offered to smoke by their friends is greater than female current smokers (Fig. 1).

**Smoking and weight loss:** 68% of current smokers and 71% of non-smokers believed that smoking causes weight loss (Figure 1).

**Figure 2: Conceptions about smoking causing weight loss among current smokers and non-smokers**
*Y axis shows % of subjects*
*Chi-square value – 0.32, p value -0.570 (not significant)*

**Smoking to look stylish:** As already highlighted, one of the reason to smoke could be to appear stylish. As shown in figure 3, 46% of current smokers and 17% of current non-smokers think that smoking is stylish (Figure 3).

**Figure 3: Notion among current smokers and non-smokers about smoking being stylish**
*Y axis shows % of subjects*
*Chi-square value -58.43, p value -0.00(significant)*

**Considering Enabling Factors:**
**Knowledge about harmful effects:** In our study, more non-smokers (98%) than current smokers (92%) are aware of the fact that smoking causes severe health problems like cancer (Figure 4).
Figure 4: Prevalence of knowledge that smoking causes cancer among current smokers and non-smokers.
Y axis shows % of subjects
Chi-square value -12.91, p value -0.0003 (significant)

Passive smoking: It is observed that 78% of the non-smokers and 72% of the current smokers are aware of the adverse effects of passive smoking (Figure 5).

Figure 5: Prevalence of knowledge about harmful effects of passive smoking among current smokers and non-smokers.
Y axis shows % of subjects
Chi-square value – 2.87, p value –0.090 (not significant)

Parental influence: It is seen that 45% of the current smokers have at least one family member who smokes while it is seen in only 26% of the non-smokers (Fig. 6).

Teacher influence: It is noted that more number of current smokers (44%) when compared to the non-smokers (28%) have witnessed their teacher(s) smoke in the college premises (Figure 7).

Socialisation: It is seen that more number of current smokers (33%) when compared to the non-smokers (18%) think that their friends will isolate them if they stop smoking (Figure 8).

Figure 6: Parental influence on the smoking behaviour of current smokers.
Y axis shows % of subjects. Chi-square value -21.34, p value -0.00 (significant)

Figure 7: Influence of teachers who smoke on smoking behaviour of current smokers.
Y axis shows % of subjects. Chi-square value -13.91, p value -0.00 (significant)

Figure 8: Influence of socialising with friends on the smoking behaviour of current smokers.
Y axis shows % of subjects. Chi-square () value – 12.25, p value -0.004 (significant)
From the above graph, the numbers of hookah smokers who feel that hookah is less harmful when compared to cigarette are more (62%) than those who don’t (38%). More current non-smokers (55%) believe that hookah is as/more harmful than cigarette than those who don’t (45%) (Figure 9).

**Recognised predisposing factors:**

Peer influence is paramount during adolescent stages and young people with greater numbers of peers who smoke are more likely to begin to smoke themselves. In our study, the number of smokers who were offered their first cigarette/hookah by friends is 72%. This coincides with a similar study conducted in 2007 by Makwana et al. in Jamnagar district of Gujarat where amongst 930 adolescents of 10-19 years age group it was found that 62% of smokers said friends to be the main reason for them to initiate smoking. [8]

In our study it is observed that 68% of current smokers think that smoking causes weight loss. This is higher when compared to a survey in 2003 by Santi and Sulistyowati conducted among 1,630 students in East Java Province, Indonesia where 54% of current smokers feel that smoking helps in losing weight. [9] 46% of current smokers in our study perceived smoking to be stylish. This is higher when compared to a study in 2003 by Santi and Muji conducted among 1,630 students in East Java Province, Indonesia where 27% of the smokers perceived smoking as being attractive. [9]

**Recognised enabling factors:**

Our study shows that 45% of current smokers have at least one member in the family who smokes whereas in a similar study conducted in 2007 by Makwana et al. in Jamnagar district of Gujarat amongst 930 adolescents of 10-19 years age group where it is found that just 11.03% of current smokers had parents who smoked. [8]

44% of current smokers witnessed their teacher(s) smoke in the college premises. This figure is less when compared to a study in 2003 by Kwamanga et al. on 5311 secondary school students in Nairobi which shows that 24.7% of the 12-20 year old smoking initiators said that teachers who smoked were an enabling factor for them to smoke. [10]

In our study it is found that 92% of current smokers are aware of the fact that smoking cigarettes/hookah causes cancer. This figure is very high when compared to the study conducted by Santi and Muji in Indonesia which shows that just 24% of current smokers knew that smoking causes cancer. [9]

**DISCUSSION:**

Our study shows the prevalence of current tobacco smoking (considering only cigarette and hookah smoking) among the Hyderabad urban youth to be 19%. This figure is almost double when compared to a cross sectional study conducted in 2005 by Pradeepkumar et al. in two districts of Kerala: Thiruvananthapuram and Alappuzha which reports a prevalence of current smoking in their college study to be 11.7%. [2]

Our study shows that the number of male current smokers (89%) is more than the female current smokers (11%). In another study in 1991 by Gavarasana et al. on college students in Andhra Pradesh, out of the 599 subjects surveyed, 49 were smokers and out of them only one female smoker was identified. [7]
72% of current smokers consider Second Hand Smoke (SHS) to be harmful to their health, which is lower compared to the study by Santi and Muji in Indonesia (82%). In our study, 21% of subjects think that smoking is essential to socialise. This figure is lower in a study in 1991 by Gavarasana et al. on college students in Andhra Pradesh where it was found that out of the 599 subjects, 13% say that one has to smoke if he/she has friends who smoke. 62% of current hookah smokers feel that hookah is less harmful than cigarette. This coincides with a study conducted in 2009 by Khaled et al. on 235 hookah users in all cafes in downtown San Diego, California, where it was found that majority of hookah users (58.3%) believe that hookah is less harmful cigarette smoking regardless of their demographic background.

Reinforcing factors:
In our survey it is observed that 32% current smokers think that smoking is the best way to manage stress. This is significantly higher when compared to the study by Kwamanga, et al on secondary school students in Nairobi which shows that 24% of current smokers started smoking to relieve them of pressure. [10]

Limitations: The differences in results obtained in this study when compared to the other surveys could be due to differences in the sample size, characteristics, geographical area of study and social factors like parental smoking, peer pressure and other habits like alcohol consumption.

CONCLUSION:
Results of our survey show that out of the total 142 current smokers, 16 were females. At all cost the upward trend in female smoking has to be stalled. In the males, misconceptions are influencing the smoking habit; such as ‘smoking to look stylish’ and ‘smoking to lose weight’, etc. The corresponding health education is to be targeted to the youth. Peer pressure is a highly influential factor in current smokers. Hence, the action to educate the peers themselves about the harmful effects of smoking and also second hand smoking is to be constructed. Entertainment in the form of magazines and movies is seen to influence smoking in our study. The Film Censor Board and the Cable Television Surveillance Board are to be periodically given updates regarding prevalence of smoking. Cigarette/hookah is highly affordable to the youth, though the hookah centres are not allowed to serve hookah to minors (under 18 years) under Cigarette and Other Tobacco Products Act 2003) very few centres adhere to it. Hookah bars not only serve as a place for smoking but also provide a platform to develop and enhance social circles. The knowledge about harmful effects of smoking and passive smoking is sound among the current smokers surveyed. Teacher influence shows a significant correlation with the smoking status of the individual. Strict instructions are to be given to the teachers by their respective college management to avoid smoking within the college premises or even near to the college. The fact that hookah use is as/more harmful than cigarette smoking is to be brought to the notice of all the students. The college management can play a major role by putting up posters discussing the harmful effects of hookah and cigarette smoking on their notice boards.

Acknowledgements: The authors wish to thank Dr KV Satyanarayana Murty, Professor and Head, Dr Lakshman Rao, Associate professor, Dr Kiranmayi, Associate professor, department of Social and Preventive Medicine, Gandhi Medical College, Hyderabad; and Dr M. Malini, Associate professor, department of Biomedical Engineering, Osmania University, Hyderabad, India.

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**Conflict of Interest**: None declared  
**Source of Support**: The authors are grateful to Indian Council of Medical Research (ICMR) for funding the research as part of the Short term Studentship (STS-2012) program.