

ORIGINAL STUDY

Quick Response Code



doi: 10.5866/3.4.727

## Prevalence of tobacco use in high school children of Mysore- A Preliminary study

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### Article Info

Received: July 13, 2011

Review Completed: August, 14, 2011

Accepted: September, 18, 2011

Available Online: January, 2012

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### ABSTRACT:

**BACKGROUND** - Tobacco usage in the form of smoking and chewing is highly prevalent in India. However, the alarming finding is its increased usage in young children. Hence, this study was conducted to record the prevalence of tobacco habits among high school children in Mysore.

**METHODS** - A total of 1750 children of 8th - 10th grade, from randomly selected schools of Mysore were given a pretested questionnaire that consisted information about their knowledge and use of tobacco products.

**RESULTS** - Of 1750 children, 77 children were using tobacco in different forms. Thus a prevalence percentage of 4.4 was recorded. 74.03% of boys and 25.97% of girls used tobacco. About 41.55% of children were introduced to tobacco use at the age of 10-12yrs and 58.44% at the age of 13-15yrs. Majority of them were influenced by their media (58.57%) and friends (46.75%). 83.11% purchased tobacco from the shop, 20.77% borrowed from friends. Major form of smoking was of cigarettes (58.44%) and bidis (49.35%). Among the chewing forms 77.9% of them used pan masala. 79.74% of children were aware about their ill effects and 57.14% of the children had thought of quitting the habit.

**CONCLUSION** - Initiation and prevalence of tobacco habits at an young age is definitely on the rise, even with the various existing measures by the government and different organizations towards curbing this menace. Hence optimum measures are required to curb this menace at the earliest.

**Key words:** Tobacco; High school; Prevention; Awareness

### INTRODUCTION

Tobacco use and smoking is a leading preventable cause of death both in India and the world.<sup>1,2,3</sup> The epidemic of tobacco use is shifting from developed to developing countries, including India, where increased use is expected to result in a large disease burden in the future.<sup>1,2</sup> WHO estimates that 4.9million deaths annually are attributable to tobacco. This figure is expected to rise to 10million in 2030, with 7 millions of these deaths occurring in developing countries, mainly China and India.<sup>2</sup> 194 million men and 45 million women use tobacco in

smoked or smokeless forms in India and it is estimated to cause 800,000 deaths annually. The WHO predicts that the tobacco deaths in India may exceed 1.5 million annually by 2020. Tobacco chewing also is one of the prime cause for oral cancer in India.<sup>4</sup>

Changes in prevalence of tobacco use in adolescents are important to monitor, since increased use by young people might be a precursor to increased rates of smoking in the population.<sup>1</sup> The Global Youth Tobacco Study (GYTS) reported that smoking is the predominant form of tobacco use among adolescent children in developed countries, while smoking as well as use of smokeless tobacco is

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equally prevalent among the youth in developing countries.<sup>1,5</sup> While data on global tobacco use behaviour are limited, it appears that in many developed countries, the vast majority of smokers begin using tobacco products well before the age of 18 years.<sup>5</sup> It is estimated that 5500 adolescents start using tobacco every day in India, joining the 4 million young people under the age of 15 who already are regularly using tobacco.<sup>2</sup>

Because of the increasing levels of use and the dire public health implications, tobacco use among young people has been referred to as both a "paediatric disease" and a "paediatric epidemic."<sup>5</sup> In spite of the known association of major diseases with tobacco, its continued use is very bothersome for both the health professionals and the policy-planners alike.<sup>3</sup> To make situation worst, nationally representative and reliable prevalence data on tobacco consumption are scarce too. Being the preventable cause of disease, there is an early need to monitor and curb tobacco use among the school children. Hence, this study was carried out to record the prevalence, knowledge and attitudes of tobacco use among school children in Mysore.

### Material and Methods

The study was conducted in randomly selected schools of Mysore. Prior permission was obtained from the school authorities before the conduction of survey. An informed consent was obtained from the students as well. All the children in the grade of 8<sup>th</sup> to 10<sup>th</sup> were given a pretested self-administered questionnaire. The questionnaire consisted of questions related to the type of tobacco products they knew of, tobacco usage — its form and type, age of introduction, introducer, reason for starting, source of information, availability, usage among family members, awareness about its ill-effects and quitting the habit. Children were categorized based on current and past use of tobacco. Children using the tobacco at the time of study were considered in the category of current users, not used any form of tobacco in their life time as never users and those who used tobacco previously but have stopped at present were considered as ever users. The data collected was tabulated and analyzed using statistical package for social science.

**Results:** Total of 1750 school children of 8<sup>th</sup> to 10<sup>th</sup> grade were studied. The findings of the study are as follows (Table 1)

**Knowledge and use of tobacco products** - All the children were aware about one or the other form of different tobacco products such as, cigar, cigarette, bidi, hooka, pan masala, tobacco powder, betel quid with tobacco etc. Of the sample, 77 children were using tobacco in different forms. Thus the current usage percentage was 4.4. Of the total, 74.03% of them were boys and 25.97% girls. 2.97% of them had used tobacco at least once.

**Age of introduction and introducer** - About 41.55% of children were introduced to tobacco use at the age of 10-12yrs and 58.44% at the age of 13-15yrs. Majority of them were introduced to tobacco by media (58.57%), friends (46.75%), relatives (12.98%) and parents (10.38%).

**Reason for beginning** - About 41.55% to 56.5% started using tobacco for fun and time-pass, 5.9% for energy and stress relief, 15.58% for attractive looks and for elderly appearance.

**Tobacco usage among family members** - Parents - 36.36%, grandparents-25.97%, relatives-35.06%, siblings — 15.5%.

**Source of tobacco** - Majority, that is 83.11% purchased tobacco from the shop, 20.77% borrowed it from the friends and 9.09% from the parents.

**Form of tobacco use** - Major form of smoking was cigarettes (58.44%) and bidis (49.35%). Among the chewing forms 77.9% of them used pan masala and 31.16% used gutka.

**Awareness and desire to quit** - 79.74% of children were aware about the ill effects of tobacco use and 57.14% of the children had thought of quitting the habit.

### Discussion

Tobacco is a major public health problem.<sup>1,4</sup> Unfortunately, tobacco use is on the rise in several developing countries including India. There is also a serious concern that many tobacco companies, which face strict governmental regulations on anti-smoking measures in the Western World, have increased their attention to, and investments in, the

developing countries.<sup>3</sup> Prevention of tobacco use among young people appears to be the single greatest opportunity for preventing this non-communicable disease in the world.<sup>1,3,4</sup> Thus, it becomes important to record the prevalence and pattern of tobacco use among the children to implement appropriate intervention strategies.

Our study showed that almost all the children were aware of either one or the other form of tobacco products in both smoking and smokeless forms. In the present study, the percentage of current users of tobacco in 8<sup>th</sup> to 10<sup>th</sup> grade children was 4.4. Giriraj and Girish have recorded a similar prevalence of 4.4% amongst Karnataka children.<sup>6</sup> Other studies have shown comparatively a high prevalence rate.<sup>4,5,7,8,9,10,11</sup> The data from the Global Youth Tobacco Survey (GYTS), a worldwide collaborative surveillance initiative, representing from 75 sites in 43 countries showed the current use of any tobacco product to be ranging from 62.8% to 3.3%, with high rates of oral tobacco use in certain regions.<sup>5</sup> The prevalence of current tobacco use in study from north Indian states by Jindal et al ranged from 2.7 to 9.61%, with highest rates being from Chandigarh to lowest rates in Punjab.<sup>3</sup> Nationwide figures from different states are not yet widely available, although the effort is on under the GYTS Project. The prevalence rates among students from the North Eastern Indian States varied around 10% in Manipur and Meghalaya. In the North East, the highest rates were seen in Mizoram (18.5%) and the lowest in Tripura (2.5%). Review by Pal and Tsering, has stated the median prevalence to be 14.00% and 6.34% for males and females respectively. This increasing rate of tobacco use among school children may be due to the significant influence of the media, with high exposures to tobacco advertisements in the television, newspapers, magazines and also to the ease of availability, access and unprohibited sale of tobacco products in almost all kinds of shops. The prevalence of smoking among youth not going to schools are likely to be even more and this needs to be researched.<sup>3</sup>

Current tobacco use is high among males than females.<sup>5,6,8,9</sup> Majority of these users (41.55%) were introduced to tobacco at the age of 10-12years, an age too young for initiation of such habit. Remaining

percentage of students started using by the age of 12years to 15years. Data from GYTS showed that 23.9% of students smoked their first cigarette before the age of 10, this was highest in Manipur (87.8%) and lowest in Argentina (6.1%).<sup>5</sup> Initiation at an early age is alarming, as these children are bound to develop tobacco-related disorders at an early age, have a greater probability of transforming to regular and addictive users, a greater likelihood of acquiring other risk behaviours, chiefly alcohol use.<sup>6</sup> Strategies to prevent initiation of tobacco use, its intervention and motivation to quit should be targeted at young people.

In children, the main influences on initiation of smoking are environmental factors and personal characteristics. Media has high influence on the children due to its youth targeted advertisements.<sup>1,5,6,8</sup> In our study, media and friends had major influence in introducing the tobacco. While about 58.57% of the children started smoking under the influence of the media, about 46.75 % were influenced by friends. Tobacco products are one of the highly advertised products in almost all the media with high negative impact on the children<sup>1</sup> and there needs strict laws to regulate these media advertisements. A disappointing finding in our study was that about 10.38% children were influenced by their parents. Parents should strictly avoid using tobacco in front of their children. This not only prevents motivating their children from smoking, but it also protects them from the harmful effects of passive smoking.

Many young people start smoking during adolescence, largely because they believe that smoking will boost their social acceptability and attractive image. In our study, about 41.55% to 56.5% started using tobacco for fun and time-pass, 5.9% for stress relief and energy, 15.58% for attractive looks and for elderly appearance. Similar results have been recorded by GYTS.<sup>5</sup> Other studies have also shown that tobacco user is perceived to have more friends, it makes them more attractive and gives them elderly appearance.<sup>1,2,4,5,6</sup>

Studies have reported that, the tobacco use is significantly more in children when its use is present in a family member i.e parents or siblings.<sup>1,4,8</sup> A similar

finding was observed in our study. 36.36% of parents and 15.5% of siblings used tobacco at home. The other most important task is to protect the never users from the harmful effects of the passive smoking. Though smoking in public places is prohibited, it is still practiced. Such and more similar laws are needed to be implemented vigorously to safeguard the public from passive smoking.

Ease of accessibility and availability was noted in the present study. Just as the findings in other studies,<sup>4,5,6,8</sup> majority of these children purchased tobacco from the shops. As per GYTS, the median rate for cigarettes purchasing in stores was 42.7%. Students in Manipur (86.3%) were the most likely to have purchased cigarettes in a store, with the least likely in the USA (9.6%), and the median rate for not being refused purchase was 83.0%.<sup>5</sup> These figures indicate that though there is effective law which bans sale of tobacco products to anyone below the age of 18, the children in spite of being minor, are not refused for purchase of tobacco. Numbers are likely to increase over a period of time due to the easy and relatively unrestricted access at vending outlets.

Use of smokeless form of tobacco was more common than smoking form.<sup>3,6,8</sup> Reverse has been recorded by few studies<sup>3,5</sup> and few of the children used both the forms.<sup>10</sup> While the major form of smoking was cigarettes followed by bidis,<sup>3,4</sup> the smokeless form was gutka and pan masala.<sup>4</sup> Bidis and smokeless tobacco are the cheapest, least taxed and most commonly used tobacco products in India. They are highly addictive and high in carcinogens. Smokeless tobacco products containing areca nut are especially addictive and carcinogenic and are one of the cause for high incidence of oral and lung cancers in India.

Most of the children were aware of the ill-effects of tobacco consumption.<sup>6,7,8,9</sup> Lower levels of awareness was found in some studies.<sup>10</sup> Major source of information would be media, school teachers, doctors, parents and friends.<sup>8</sup> 57.14% of children had thought of quitting the habit in our study. Lower, comparable and slightly higher values have been reported by other studies.<sup>4,7,8</sup> GYTS recorded 68.4% with highest in Shandong and Tianjin, China (86.9%) and lowest in Manipur, India (19.6%).<sup>5</sup>

The following significant findings could be inferred from the present study - increasing number of users, early age of initiation, impact of media/friends/parents, initiation for fun/time-pass/attractive appearance, relatively unrestricted access, and the positive finding of students being aware of the ill-effects. These findings suggest the need for a comprehensive approach for the effective management of this tobacco menace. Comprehensive programmes involving the children, parents, teachers, media and policy makers are highly essential. Parents being the prime educators and core builders need to monitor and guide the children effectively. Teachers can play a prime role by imparting health education with emphasis on ill-effects of tobacco use. Media being one of the strongest influencer, can be used for imparting health education in a positive way.

Awareness towards hazardous health effects of tobacco has increased with time, but its role alone towards attainment of tobacco cessation is questionable. The Indian government has banned smoking in hospitals, government offices, schools and on some domestic transport, and requires health warnings on all cigarette packages.<sup>1</sup> As per India's Cigarette and Other Tobacco Product Act 2003 (COTPA), selling tobacco to minors or selling of tobacco by minors (under the age of 18) is legally forbidden and violation of the same is a punishable offence. Same applies to selling of tobacco containing items within 100 yards radius of any educational premise. From 31<sup>st</sup> May, 2009, as per the amendment in COTPA 2003, the pictorial as well as text warning covering at least 40% of the total area of advertisement is mandatory in India.<sup>12</sup>

Though such numerous laws and policies exist, still it needs serious attention by the policy-makers. Regular and systematic education programmes catering to teachers, children and also their parents should be undertaken. The school authorities should be included in stricter implementation and monitoring of the implementation of legislation.<sup>6</sup> Strict enforcement of laws to ban sale of these products to the under-aged and in the school surroundings are urgently needed. Tobacco related information should be included in the curriculum of the schools. Most importantly high exposure rates to passive smoking require immediate attention.

Data available on the use of tobacco in school children in Karnataka is sparse. Hence, this preliminary study was undertaken to find out the prevalence rate of tobacco habits among school children in Mysore. The results of this study can provide a baseline data of tobacco use in young children and can form basis for the future studies with larger samples and further, can be used for appropriate planning of tobacco control programmes, interventions and evaluation. Limitations of the study include a, relatively small sample size, under or over-response by the children. Further research with larger cluster samples using GYTS based questionnaire would be necessary to arrive at appropriate data on prevalence and pattern of tobacco use.

### Conclusion

Though the intensity of tobacco related diseases is well known and is much researched, there is lack of solid data on the facts related to its initiation and use especially in young children, which is of high concern. Hence, there needs for a good country-state-region wise, repeated surveys to produce a well documented data, based on which highly efficient tobacco awareness-intervention-cessation programmes can be planned and executed successfully so as to reduce the burden of this non-communicable disease and protect our youth from its harmful ill-effects.

### References

- Joshi SR. Editorialo - Tobacco free India: Save our children. JAPI 2006;**54**:605-607.
- Pal R, Tsering D. Tobacco use in Indian high-school students. International J of Green Pharmacy 2009; October-December:319-323.
- Jindal SK, Aggarwal AN, Gupta D, Kashyap S, Chaudhary D. Prevalence of Tobacco Use Among School Going Youth in North Indian States. Indian J Chest Dis Allied Sci 2005;**47**:161-166.
- Madan Kumar PD, Poorni S, Ramachandran S. Tobacco use among school children in Chennai city, India. Indian J of Cancer 2006;**43**(3):127-131.
- The Global Youth Tobacco Survey Collaborative Group. Tobacco use among youth: a cross country comparison. Tobacco Control 2002;**11**:252-270.
- Gururaj G, Girish N. Tobacco use amongst children in Karnataka. Indian Journal of Pediatrics 2007;**74**:1095-1098.
- Gajalakshmi V, Asma S, Warren CW. Tobacco survey among youth in South India. Asian Pac J Cancer Prev 2004;**5**(3): 273-8.
- Shenoy RP, Shenai PK, Panchmal GS, Kotian SM. Tobacco use among rural school children of 13-15 years age group: A Cross-sectional study. Indian J Community Medicine 2010;**35**(3):433-435.
- Tsering D, Pal R, Dasgupta A. Tobacco use among high-school students of West Bengal, India. Indian J Community Medicine 2008;**33**:207-208.
- Tobacco control in India. Tobacco use in India: Practices, patterns and prevalence. Available from <http://www.whoindia.org/SCN/Tobacco/Report/03-Chapter-03.4.pdf>.
- Sinha DN, Gupta PC. Tobacco use among students in Orissa and Uttar Pradesh. Indian Pediatr 2005;**42**:846-847.
- Joshi U, Modi B, Yadav S. A Study on Prevalence of Chewing Form of Tobacco and Existing Quitting Patterns in Urban Population of Jamnagar, Gujarat. Indian J Community Med 2010;**35**(1):105-108.

**Table-1: Prevalence and pattern of tobacco use among high school children in Mysore**

Criteria	Categories	Percentage
Current users		4.4%
Ever users		2.97%
Current users	Boys	74.03%
	Girls	25.97%
Age of introduction	10-12years	41.55%
	13-15years	58.44%
Introducer	Media	58.57%
	Friends	46.75%
	Relatives	12.98%
	Parents	10.38%
Reason for beginning	Time-pass	56.5%
	Fun	41.55%
	Attractive look	15.58%
	Elderly appearance	5.9%
Usage among family members	EnergyStress relief	5.9%
	Parents	36.36%
	Grandparents	25.97%
	Relatives	35.06%
Source of tobacco	Siblings	15.5%
	Shop	83.11%
	Friends	20.77%
Form of tobacco use	Parents	9.09%
	Cigarettes	58.44%
	Bidis	49.35%