

Original Article

Tobacco Use Amongst Children in Karnataka

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ABSTRACT

Objective. To estimate the prevalence, pattern and correlates of tobacco use amongst the 13-15 year olds in schools of Karnataka

Methods. A three stage (area, school level and class level) cluster sample design was adopted and 80 schools from 12 districts of the state were selected. A total of 4,110 students participated in the study with an overall response rate of 87%.

Results. Point prevalence of tobacco use amongst 13-15 year old was 4.9%. Current tobacco use was predominantly a male feature and use of smokeless variety predominated (transitional Karnataka (8.2%); metropolis (6.8%), rural (3.4%). One third of current tobacco users (30.8%) purchased tobacco product in a store and one-fifth used it at home. Nearly half of the never smokers (43% to 56.7%) were exposed to tobacco smoke outside home and 83% favored a ban on smoking in public places. A male tobacco user was perceived to have more friends and was reported to make them look attractive. Print media was a predominant source of message, more so in the metropolitan region. Only one-third (31.6%) reported that the reasons of tobacco usage amongst youth was discussed in formal school settings.

Conclusion. GYTS Karnataka has provided reliable estimates and shown the feasibility of implementing a surveillance programme. Specific challenges for Public health that emerge from the study are increasing number of users in transitional areas, continued media exposure, tobacco users being perceived to be popular and attractive, easy and relatively unrestricted access, lack of systematic support within schools and social acceptance of tobacco use at home. The need of the hour is to target and focus interventions through comprehensive programmes aimed at children, school authorities, parents and policy makers. [Indian J Pediatr 2007; 74 (12) : 1095-1098] E-mail : guru@nimhans.kar.nic.in

Key words : Tobacco use; Public health challenges; School health education; Behavioural determinants; Transitional area

Tobacco and alcohol use among youth and children are a part of the spectrum of adverse health behaviours leading to acute and long term health problems. The diverse socio-economic, cultural and political milieu characterizing Indian states presents several challenges in delivery of health care services and organizing preventive programmes.^{1,2} While the traditional models of health care delivery have been found to be inadequate, there is a lack of new insight to appropriately manage the diseases of transition represented by high risk behaviours. With the central legislation in place for regulating trade and commerce including advertisement of tobacco products³, an emerging trend has been the decreasing age of tobacco use and need to understand its

determinants.^{1,4,5} Overcoming the methodological limitations of earlier individual studies, Global Youth Tobacco Survey (GYTS) – India adopted a uniform methodology to estimate tobacco use amongst 13–15 yr across the States and Union territories.² The present report outlines salient findings from a rapidly progressive State of India, viz., Karnataka.

MATERIALS AND METHODS

GYTS – Karnataka (GYTS-K) estimated prevalence of tobacco use in 13–15 yr age group in Karnataka during 2003-04 adopting a three stage (area, school level and class level) cluster sample design. Strata 1 included Bangalore and Mysore as metropolis, other urban Karnataka as transitional area and Karnataka rural as remaining areas. Probability proportional to school enrollment size and lottery method was employed to select school and sections in classes respectively. Operational and logistics issues noted during the pilot study (difficulty in comprehending the use of bubble

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sheets as response sheets, need for use of a local language version of the study instrument) were attended to in the main study.

The survey work was undertaken in the sampled schools from 12 districts of the State. Twenty schools each were randomly selected in the metropolis and other urban area and 40 schools in rural area. A total of 4,110 students participated from amongst 4,708 on roll. The overall response rate was 87.3% (84% to 91%). Key reasons for non-participation were absence due to festivals and fairs, sickness, extra-curricular activities in schools and monsoon rains. The responses were suitably weighted to arrive at final estimates.

RESULTS

Overall point prevalence of tobacco use among the 13 to 15 yr old was 4.9% and life-time prevalence was 5.1%. Current tobacco use was predominantly a male feature and was nearly four fold greater among males (M: 8% vs F: 2.1%). Smokeless tobacco (*gutka* or *pan-masala*) use was greater than smoking variety (5.9% and 4.0%, respectively) amongst males, but similar amongst females (1.4% and 1.3%, respectively). Proportion currently using tobacco was greater in transitional Karnataka (10.1%) than in the metropolis (8.3%) and was twice that of rural (4.7%) population. Across 3 regions, use of smokeless variety predominated and proportions were highest in transitional Karnataka (8.2%) compared to metropolis

(6.8%) or rural (3.4%). One third of current tobacco users (30.8%) reported that they had purchased the tobacco product in a store. One-fifth of current users smoked (17.2%) or chewed / applied (18.6%) tobacco at home. The proportion of females using smokeless variety at home was nearly double (28.2% vs 13.1%) than those smoking at home. In the other urban Karnataka areas 42% reported smoking at home.

While 46.9% were exposed to tobacco smoke outside their home, 29.7% were exposed to tobacco smoke within their home. Further, between the two genders and across the three regions, nearly half of the never smokers (43% to 56.7%) were exposed to tobacco smoke outside their home. Eighty three percent of the never smokers favored and recommended for a ban on smoking in public places.

Enquiries regarding perceived image of tobacco user revealed that nearly one half of respondents (41.8 to 44.0%) reported that a male tobacco user has more friends and nearly one third (31.0% to 37.4%) opined that tobacco use makes boys look attractive. Two-thirds of the female smokeless tobacco user perceived that a male tobacco user has more friends (72.3%) and reported that tobacco use makes boys look attractive (69.5%).

Print media was a predominant source of information for tobacco use and the respondents also reported that they witnessed large numbers of tobacco advertisements on either TV or in social gatherings. There was a greater exposure to media messages on tobacco in the metropolis region (25.7% to 52.2%) when compared to transitional

TABLE 1. Recollections of Media Messages Regarding Tobacco Usage by Never Users (%)

Category	Total	Bangalore-Mysore	Other Urban Karnataka	Karnataka Rural
Seen a lot of advertisement and media messages about Cigarette on				
TV	33.5	36.5	29.2	33.3
Print Media	48.0	52.2	39.4	47.8
Newspapers/Magazines	28.5	31.8	21.3	28.3
Social gatherings	41.2	41.3	34.0	41.3
Seen a lot of advertisement and media messages about Bidis on				
Print Media	42.1	41.8	38.4	42.2
Social Events	34.1	36.7	33.5	33.9
Seen a lot of advertisement and media messages about Gutka/Pan Masala on				
TV	38.2	40.0	26.9	38.2
Print Media	37.3	33.4	28.5	37.8
Newspapers/Magazines	29.3	25.7	22.8	29.7
Social gatherings	36.7	32.6	26.8	37.1

TABLE 2. Harm Perception of Tobacco Use and Curricular Discussion Regarding Tobacco Use (%)

Category	Total	Male	Female
Percent who think smoking is definitely harmful to their health	82.0	78.7	85.3
Percent who think that chewing/applying is definitely harmful to their health	80.6	77.9	83.3
Never smokers who definitely think smoke from others is harmful to them (%)	79.8	77.4	82.1
Taught dangers of smoking (%)	68.0	65.4	70.7
Discussed tobacco and health as part of a lesson in class (%)	50.9	53.9	48.2
Taught the effects of tobacco use in class (%)	42.7	39.2	46.1
Discussed reasons why people their age smoke or chew (%)	31.6	33.1	30.5

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areas (21.3% to 39.4%) or even rural communities (28.3% 47.8%) (Table 1). Children had not come across many messages on *bidis* in the Television, newspapers or magazines.

An overwhelming proportion felt that tobacco use is definitely harmful to their health and 80% of never smokers felt that smoke from others use of tobacco is harmful to them. Despite being taught about dangers of smoking (68%), only about one-third (31.6%) reported that the reasons of tobacco usage amongst youth was discussed in formal school settings (Table 2).

DISCUSSION

GYTS-Karnataka has provided a valid and representative benchmark estimate for planning and implementing anti-tobacco policies and programmes. In addition, the study has shown that it is possible and feasible to implement a surveillance programme which could also evaluate the impact of ongoing tobacco control programmes. In the absence of a surveillance programme for non-communicable diseases across the State, the framework that has been developed could very well serve as sentinel surveillance approach for risk factor surveillance of non-communicable diseases.⁸

Against the national average of 17.5% (with variations across States and regions),²³ GYTS - Karnataka estimates of current tobacco users amongst the 13 to 15 yr group was 4.9% and these constitute 96% of life-time tobacco users. Undoubtedly, these early experimenters are bound to develop tobacco-related disorders at an early age;¹⁹ have a greater probability of transforming themselves to regular and addictive users; a greater likelihood of acquiring other risk behaviours, chiefly alcohol use¹¹ and thus over-burdening the already fragile health care delivery system. In this vulnerable group, the predominant use of smokeless tobacco across the three areas and between the two sexes would accelerate the early development of tobacco related health problems.¹²

The present study has brought to the fore specific challenges for public health. Firstly, the emerging tobacco use in districts, talukas and rural areas needs serious attention of policy-makers. In the absence of concerted efforts in these populations, the numbers are likely to increase over a period of time. Secondly, the exposure to media messages regarding tobacco has a significant influence on initiators, experimenters and users, while increasing sales and availability.^{15,16} In addition, those using tobacco were perceived to be both popular and attractive. These two complementing issues are indeed a challenge, especially in the context of industry driven strategies of promoting "new life styles". Research conducted has already shown that children are targeted

heavily by both direct and indirect methods.^{12,18} Thirdly, purchase of a tobacco product by one third of users points to the easy and relatively unrestricted access at vending outlets. The large number of outlets, many of which are also located in the neighborhood of schools¹⁹ and their regulation for restricting the sales to underage users is indeed a major public health challenge. The laxity in the implementation of the legislation (ban of sales to underage persons and ban on selling outlet within 100 yards of an educational institution) specifically calls for a multi-sectoral approach to tobacco control initiatives. Fourthly, despite the greater harm perception, there was a major lacuna in systematic support within the schools to prevent tobacco use. "Saying No to Tobacco" requires acquiring of life skills and changes in attitude; and not just enhanced cognition or acquiring information. Information transfer alone without emphasis or focus on attitudinal changes and environmental modification will have limited impact and is a major public health challenge. Finally, Tobacco use at home, especially the smokeless variety amongst females is indicative of the prevalent social acceptance of tobacco use and would very well turn out to be a major threat in creating tobacco free environs.

CONCLUSIONS

There is need for targeted and focused interventions by adopting a comprehensive approach. Anti-tobacco programmes should make inroads into transitional towns and rural areas. The focus in schools should be to make them tobacco-free. The school authorities should be included in stricter implementation and monitoring of the implementation of legislation. Regular and systematic education programmes catering to teachers, children and also their parents should be undertaken. Enabling teachers to educate the young impressionable minds regarding life style disorders should be a cornerstone activity in preventing the establishment of life style disorders like tobacco and alcohol use within the community.

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ANNEXURE II

PROFORMA FOR REGISTRATION OF SUBJECT FOR DESSERTATION

1. Name of the candidate and the address	Dr. ADITI VERMA A-197 RAMPRASTHA, GHAZIABAD, U.P.-201011.
2. Name of the institution	M. R. Ambedkar Dental College and Hospital No. 1/36 Cline road, Cooke Town Bangalore – 560005.
3. Course of study and subject	M.D.S (Public health Dentistry)
4. Date of admission to the course	2 nd June , 2010
5. Title of the topic	<p style="text-align: center;">A study to assess the Impact of Health Education Intervention on existing knowledge, attitude & practices towards tobacco use among 15-16 years old school children in North zone of the Bangalore City.</p>
<p>6. <u>Brief resume of intended work:</u></p> <p>6.1. Need for Study</p> <p>Tobacco use is a major public health issue. It is a major preventable cause of death & disability worldwide. W.H.O. estimates 4.9 million deaths are annually attributed to tobacco. This figure is expected to rise to 10 million in 2030, with 7 million of these deaths occurring in developing countries, mainly India¹.</p>	

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 are already regularly using tobacco¹. A study showed the point prevalence of tobacco use amongst 13-15 years old school children in Karnataka as 4.9% & life-time prevalence as 5.1%⁴. Thus, the prevention of tobacco use in young people appears as the single greatest opportunity for preventing non-communicable disease in the world today¹.

Health education is one of the primary interventions to bring about the changes in knowledge, mould favorable attitudes which would translate to healthy practices. To educate the young impressionable minds should be a cornerstone activity in preventing the establishment of life style disorders like tobacco use within the community⁴. Hence, the study attempts to assess the effectiveness of the health education intervention on knowledge, attitude & practice towards tobacco use.

6.2. Review of Literature

Crone et al² (2003) conducted a group randomized controlled trial in 26 Dutch lower secondary schools. A sample of 1444 students (average age 13 years) was taken in the intervention group & 1118 students (average age 13 years) in control group. Intervention was imparted regarding knowledge, attitude & social influence. Data was analyzed before, immediately after & one year after the intervention. Results obtained were significant in decreasing the smoking prevalence of intervention group while it is increased in control group.

Xinguang Chen et al³ (2006) conducted a quasi-experimental pilot trial in Beijing, China among 381 students from Grade 7,8,10 & 11 & assigned to 3 groups (intervention group T with school

teachers delivering the program, intervention group R with researchers delivering the program & comparison group C). Intervention programme (SAFT) consists of seven sessions. Data were collected at baseline then, immediately after the intervention & finally, 6 months after the intervention. Predicted smoking rate, Odd's ratio & regression coefficient declined in both group T & R as compared with group C.

Gururaj G. et al⁴ (2007) conducted a three stage cluster sample design including 80 schools from 12 districts to estimate the prevalence, pattern & correlates of tobacco use amongst the 13-15 years old schoolchildren in schools of Karnataka. 4,110 students participated in the study with an overall response rate of 87%. Results showed point-prevalence of tobacco use amongst 13-15 years old as 4.9% & life-time prevalence as 5.1%. Current tobacco use was predominantly a male feature & was nearly 4-fold greater among males compared to females. Smokeless tobacco use was greater than smoking variety (5.9% & 4% respectively) amongst males, but similar amongst female (1.4% & 1.3% respectively).

Guiseppe et al⁵ (2010) conducted a randomized controlled trial in Italy including 534 children (9-11 years) & 308 adolescents (14-15 years). Divided the sample into intervention & control group. The intervention programme included (a).Health facts & the effects of smoking. (b).analysis of the mechanism underlying initiation of smoking. (c).refusal skills training to deal with the social pressure to smoke. A questionnaire was administered before intervention & 2 years later. Results obtained were statistically significant. Smoking prevalence was significantly lower in children belonging to the intervention group.

6.3 Objectives of the Study

- To assess the knowledge, attitude & practices of students towards tobacco use in government & private school children.
- To create awareness & assess the impact of short term health education intervention for a period of 6 months.

7. Methodology

7.1. Source of Data

Among the three zones of Bangalore city (north, south, rural), North zone was selected randomly for the purpose of the study.

7.2. Methods of Collection of Data

An Interventional Study for six months in 720 students of age 15-16 years who will be selected by Stratified Random Sampling in the high schools of north zone of Bangalore city.

The above mentioned sample size was estimated as 720 with α -error considered at 5% & β -error considered at 20% (80% power for a two-sided test).

A self administered questionnaire will be used to collect data regarding knowledge, attitude & practice towards tobacco usage. A pilot study in a sample of 90 students has already been conducted to validate the designed questionnaire.

A baseline situation analysis of knowledge, attitude & practice will be obtained using pre-test in all the schools in a phased manner. Each school will receive two health education interventions within a period of three months. Following the second health education, a post-evaluation would be conducted and the results will be analyzed using appropriate statistical analysis (Descriptive and

Inferential statistics).

7.3. Does the study require any investigations to be conducted on patients or other human/animals?

NO.

7.4. Has ethical clearance been obtained from your institution in case of 7.3?

YES.

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