*Editorial*

# Tobacco use Among Children in India: A Burgeoning Epidemic

Tobacco is the second major cause of death in the world today. Nearly 5 million people die due to tobacco use every year and this figure will increase to 10 million tobacco attributable deaths per year by 2020(1). Of these, 7 million deaths will occur in the developing countries, mainly China and India(2,3). The number of people in the age group of 18 years and younger in the world today is 2.4 billion, which is the largest generation in history. Since most of young people in developing countries are currently non-tobacco users, tobacco industry especially targets them. Everyday about 80,000 to 100,000 young people initiate smoking, most of them in the developing countries(4). Of 1000 teenagers who smoke today, 500 will eventually die of tobacco related diseases-250 in their middle age and 250 in their old age(5). Tobacco is the single largest preventable cause of death and disability worldwide.

India is the world's second largest producer of tobacco. Every year about 800,000-900,000 Indians die due to tobacco use(6). It was estimated in 1999-2001 that 5,500 adolescents start using tobacco every day in India, joining the 4 million young people, under the age of 15, who already use tobacco regularly(7,8). Like other developing countries, the most susceptible time for initiating tobacco use in India is during adolescence and early adulthood, ages 15-24 years(9). Most tobacco users start using tobacco before the age of 18 years, while some start as young as 10 years(8).

The early age of initiation underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction. The risks of tobacco use are highest among those who start early and continue its use for a long period(10). The role of pediatricians, thus, becomes especially relevant in countering this public health threat. In order to reduce the long-term burden of tobacco related diseases, adoption of successful prevention strategies is the only feasible solution in a low-resource country, such as India.

The challenges of the tobacco epidemic in India are complex, due to great diversity in forms of tobacco used and marked variations in prevalence and patterns of tobacco use. The Global Youth Tobacco Survey (GYTS), supported by the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), conducted during the years 2000-2004 in India, is the first survey that provides state-wise data on youth (13-15 years), using a standardized methodology. The prevalence figures of ever and current tobacco use varied across states, as per GYTS results. Current prevalence of tobacco use, in any form, among school going youth (age 13-15 years) in India is 17.5% (range: 2.7% -63%). Current smokeless tobacco use was reported by 14.6% (range: 2.0% - 55.6%) and current smokers were 8.3% (range: 2.2 % - 34.5%)(6).

### Determinants of tobacco use in youth

The determinants of tobacco use among youth can be classified into four broad

categories. The first major predictive cluster comprises of socio-demographic factors, *i.e.*, tobacco use patterns differ according to age, gender, state and region, socio-economic status, urbanicity (rural versus urban residence) and family composition. The second predictive cluster is of social-environmental factors that include: normative expectation (perceptions and attitudes), role models, media and advertising, social norms, opportunities vs. barriers (accessibility and policy issues) and social support (tobacco use by friends). The third cluster of predictive factors encompasses personal factors that include: knowledge about tobacco and tobacco use, values and functional meanings about tobacco use, self-image and self-efficacy. The last predictive cluster is of behavioural factors that include: behavioral intentions to use tobacco in future, repertoire behavior (concurrent alcohol and tobacco use), skills (to resist influences) and related incentives to begin and continue tobacco use(11).

**Socio-demographic factors: Gender, state, urbanicity in India**

According to GYTS results, tobacco use reported by boys was significantly higher than girls as shown in *Table I.*

High prevalence was reported in the North Eastern states and Bihar. Low prevalence was reported in Andhra Pradesh, Chandigarh, Delhi, Goa, Haryana, Himachal Pradesh, Karnataka, Punjab and Tamil Nadu. All other states reported intermediate prevalence of tobacco use.

While no statistical difference has been shown in overall current tobacco use among rural and urban students as per GYTS results, current beedi smoking in rural areas (50%) was significantly higher than in urban areas (2.4%) in Bihar(6). There have been earlier studies and surveys, where tobacco use has been shown to be higher in rural youth as compared to urban youth(9).

Studies by HRIDAY conducted in urban areas, have shown marked differences between students in low and high Socio Economic Status (SES) groups in Delhi and Chennai. In a Focus Group Discussion, students in government schools (representing low-middle SES) shared their perspectives on tobacco use as "consumers", while the students in private schools (middle-high SES) spoke as "commentators". This also reflected the higher prevalence of tobacco use among the low 'SES' government students. Clearly, it will be most challenging to prevent tobacco use among students in the government schools (particularly boys) because of the higher rate of experimentation with tobacco in that group. The study revealed that smoking beedis was common among low SES groups, while smoking cigarettes was more common among middle and upper SES groups(12).

**Social environmental factors**

**TABLE I–***GYTS Results on Tobacco use Among Boys and Girls in India.*

| Tobacco Use | Boys (%) ± SD | Girls (%) |
|---|---|---|
| Ever tobacco use | 30.4 ± 2.3 | 16.8 ± 2.2 |
| Current tobacco use | 22.0 ± 2.1 | 10.3 ± 1.9 |
| Current smokeless tobacco use | 18.5 ± 2.1 | 8.4 ± 1.9 |
| Current smoking | 10.5 ± 1.6 | 4.4 ± 1.0 |

*Source:* Report on Tobacco Control in India(6).

In the GYTS study, comparative data from 26 states revealed that current tobacco use was positively correlated with variables such as parents using tobacco, exposure to smoke at home and friends smoking. It was negatively associated with curricular teaching on dangers of tobacco at school. Parental tobacco use was reported two to three times more often by tobacco users, as compared to never- tobacco users, in North Eastern states of India(13).

There is ample evidence globally that other factors, in the social environment of a child, directly affect the behavior of young people. Among non-smoking, non-susceptible adolescents, viewing a favourite cigarette advertisement makes children two times more vulnerable to smoke after 3 years, as compared to those who do not view a favourite cigarette advertisement. Similarly possession of a cigarette promotional item such as a cap or jacket makes children three times more likely to smoke. School and community level norms and role models that are non-supportive of tobacco use are effective deterrents which influence a young person to not start or to quit tobacco use(11).

Policies at school and in the community play a very crucial role as they influence access to tobacco products. Results from Global School Personnel Survey (GSPS), conducted in India, further exemplify the relevance of policies in schools for preventing tobacco use among youth. Schools of Maharashtra, where tobacco control policies exist, had lower tobacco use prevalence among teachers (31%) than schools in Bihar, where 78% of teachers were current tobacco users and no school policies existed on tobacco control. Teaching about prevention of tobacco use, in schools in Maharashtra, was positively correlated with non-use of tobacco by teachers(14). There is also evidence that central government schools that have strictly enforced tobacco control policies have a low prevalence of current tobacco use among students(15) and school personnel(16) as compared to state schools, which had no policies. These findings have important implications on students' tobacco use habits, as teachers are their role models and their tobacco use habits can substantially influence the knowledge imparted to students as well as the behaviour of students.

International experience, on school level interventions for the tobacco control, has been mixed(17,18). A 5 year intervention through grade 6-11 in the Minnesota Heart Health Program (USA), substantially lowered smoking rates among the intervention community as compared to reference community(18). A reverse effect was seen in Montreal Heart Health Study, where it was seen that children in the intervention cohort were more likely to initiate and continue smoking than children in the control group(19). However, it must be noted that there are cultural differences which must be taken into account when school health programmes are compared globally. Also, intervention delivery strategies play a crucial role in determining the outcome of intervention. Tobacco control efforts, globally and in India, suggest that a multi-component intervention is effective in delaying the onset and reducing tobacco use among youth-(13,18). A school based cluster randomized trial in India showed that such an intervention successfully reduced experimentation, intentions to use tobacco and offers of tobacco among the intervention schools(20). The twin HRIDAY (Health Related Information Dissemination amongst Youth) and SHAN (Student Health Action Network) programs focusing on tobacco control

awareness and advocacy are currently functional in 300 schools (180 government and 120 private) and 10 colleges of Delhi. It has also recently been extended to 9 other cities of India.

HRIDAY's experience suggests that intervention programmes need to be designed in a way that is suitable to both types of schools with respect to their SES. For example, while the content of the intervention programmes might be similar for both private and government school students, their delivery could be tailored to suit the requirements of specific schools.

This issue includes a number of articles that further reiterate the current epidemic of tobacco use amongst youth of various states in India(21-24).

Pediatricians have a major role to play in strengthening the programmes for tobacco control in India. They can influence children and parents, not only in clinic settings but also by linking up with schools and community groups. They should motivate children not to be tempted by tobacco while warning adults against endangering the health of children through second hand smoke and negative role modeling. The theme of the World No Tobacco Day 2005 was "The Role of Health Professionals in Tobacco Control". Pediatricians have much to do this year and even later, as the battle against tobacco gathers force in India.

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