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**RESEARCH ON TOBACCO IN INDIA  
(INCLUDING BETEL QUID AND ARECA NUT)**

An annotated bibliography of research on  
use, health effects, economics, and control efforts

**Cecily Stewart Ray**

**with Prakash Gupta and Joy de Beyer**

**August 2003**

455

## Health, Nutrition and Population (HNP) Discussion Paper

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# Health, Nutrition and Population (HNP) Discussion Paper

## ECONOMICS OF TOBACCO CONTROL PAPER NO. 9

### RESEARCH ON TOBACCO IN INDIA (INCLUDING BETEL QUID AND ARECA NUT)

*An annotated bibliography of research on  
use, health effects, economics, and control efforts*

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Paper prepared for the World Bank for the meeting on Tobacco Control Research in India, held in New Delhi, India on April 10-11, 2002.

The on-line version of this annotated bibliography will be updated periodically. Readers are encouraged to send additional references and abstracts to the authors.

**Abstract:** This report is a compilation of references and abstracts of all research on tobacco in India from 1985 to 2003. Studies are organised by subject matter, and within each sub-topic, are arranged by year of publication with most recent studies listed first, and for studies published in the same year, alphabetically by author's last name. The studies include tobacco use surveys, studies on tobacco-related mortality, tobacco-related diseases both cancerous and non-cancerous, according to body system and site, and other health problems associated with tobacco use and environmental tobacco smoke. Other topics include the toxicity of tobacco products, educational interventions and the psychology of tobacco use, tobacco control measures and policies, reports on tobacco advertising and sponsorship and research into the tobacco health hazards faced by tobacco workers. It also includes studies on tobacco employment, tobacco growing and technology, and the economics of tobacco. The following databases were searched: Pub Med, Medline, and J-Gate (a new Indian database). The keywords used for the searches were '(Tobacco OR smoking) AND India', as well as names of diseases known from international research findings to be associated with tobacco, 'AND India'. In some cases, reports were excluded if they were duplicative, or the methodology or findings were unclear.

The report is also available on-line, at to <http://www.actindia.org/databases.html> or [www.actindia.org](http://www.actindia.org) -- click on "databases", or through [www.worldbank.org/tobacco](http://www.worldbank.org/tobacco). In future, all the abstracts will be available also on the WHO 'Health Inter-network' (HIN) website, that is under development. The electronic file is available upon request, from the authors.

**Keywords:** tobacco, nicotine, bidi, tendu, gutkha, paan masala, smoking, areca nut, betel-quid, chewing tobacco, smokeless tobacco, reverse smoking, chutta, environmental smoke, passive smoking, second-hand smoke, sidestream smoke, India, cancer, tuberculosis, pulmonary disease, CVD, coronary vascular disease, respiratory disease, stroke, peripheral vascular disease, adverse pregnancy outcomes, nutritional status, tobacco control, tobacco policy, economics of tobacco

**Disclaimer:** The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank or the World Health Organization, their Executive Directors, or the countries they represent.

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The electronic file for this document (word.doc file) is available upon request from Cecily Ray or Joy de Beyer, for readers who wish to be able to search or sort the file for personal use. The file can be sent by email, or on CD or diskette.

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## PREFACE

In 1999, the World Bank published "Curbing the Epidemic: governments and the economics of tobacco control", which summarizes trends in global tobacco use and the resulting immense and growing burden of disease and premature death. In 2000, there were nearly 5 million deaths from tobacco each year, and this huge number is projected to grow to 10 million per year by 2030, given present consumption trends. Already about half of these deaths are in high-income countries, but recent and continued increases in tobacco use in the developing world is causing the tobacco-related burden to shift increasingly to low- and middle-income countries. By 2030, seven of every ten tobacco-attributable deaths will be in developing countries.

"Curbing the Epidemic" also summarizes the evidence on the set of policies and interventions that have proved to be effective and cost-effective in reducing tobacco use, in countries around the world. Tax increases that raise the price of tobacco products are the most powerful policy tool to reduce tobacco use, and the single most cost-effective intervention. They are also the most effective intervention to persuade young people to quit or not to start smoking. This is because young people, like others with low incomes, tend to be highly sensitive to price increases.

Why are these proven cost effective tobacco control measures—especially tax increases—not adopted or implemented more strongly by governments? Many governments hesitate to act decisively to reduce tobacco use, because they fear that tax increases and other tobacco control measures might harm the economy, by reducing the economic benefits their country gains from growing, processing, manufacturing, exporting and taxing tobacco. The argument that "tobacco contributes revenues, jobs and incomes" is a formidable barrier to tobacco control in many countries. Are these fears supported by the facts?

In fact, these fears turn out to be largely unfounded, when the data and evidence on the economics of tobacco and tobacco control are examined. The team of about 30 internationally recognized experts in economics, epidemiology and other relevant disciplines who contributed to the analysis presented in "Curbing the Epidemic" reviewed a large body of existing evidence, and concluded strongly that in most countries, tobacco control would not lead to a net loss of jobs and could, in many circumstances actually generate new jobs. Tax increases would increase (not decrease) total tax revenues, even if cigarette smuggling increased to some extent. Furthermore, the evidence shows that cigarette smuggling is caused at least as much by general corruption as by high tobacco product tax and price differentials, and the team recommended strongly that governments not forego the benefits of tobacco tax increases because they feared the possible impact on smuggling, but rather act to deter, detect and punish smuggling.

Much of the evidence presented and summarized in "Curbing the Epidemic" was from high income countries. But the main battleground against tobacco use is now in low- and middle-income countries. If needless disease and millions of premature deaths are to be prevented, then it is crucial that developing countries raise tobacco taxes, introduce comprehensive bans on all advertising and promotion of tobacco products, ban smoking in public places, inform their citizens well about the harm that tobacco causes and the benefits of quitting, and provide advice and support to help people who smoke and chew tobacco, to quit.

In talking to policy-makers in developing countries, it became clear that there was a great need for country-specific analytic work, to provide a basis for policy making, within a sound economic framework. So the World Bank and the Tobacco Free Initiative of the World Health Organization (as well as some of the WHO regional offices and several other organizations, acting in partnership or

independently) began to commission and support analysis of the economics of tobacco and tobacco control in many countries around the world.

Most of the other papers in this Discussion Paper series report results of new, previously unpublished analyses of tobacco economics and tobacco control issues. Clearly, this annotated bibliography is different, being a compilation of references and abstracts of research which has been published elsewhere, often in refereed journals.

Our hope is that the information compiled in this report will be a useful reference for researchers and others who are looking for information on tobacco use and its impact in India, or on tobacco control in India.

*Joy de Beyer*

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The internet version was designed and created by Vishal Bal. It is available at [www.actindia.org](http://www.actindia.org) -- click on "databases", or go directly to <http://www.actindia.org/databases.html>.

This analysis was carried out with the aid of grants provided by the World Bank and the Office on Smoking and Health at the US Centers for Disease Control.

The authors are also grateful to the World Bank for publishing the report as an HNP Discussion Paper.

## INTRODUCTORY NOTE

This bibliography is an attempt to compile a list of 'all' tobacco and areca nut related research conducted in India since 1985, providing references and abstracts. Most of the abstracts were originally prepared by the authors. The purpose of creating this database is to form a pool of information, which can be drawn upon by tobacco control researchers, advocates for tobacco control and those specializing in public health policy.

This compilation contains abstracts on reports of tobacco use surveys, tobacco related mortality, tobacco related diseases both cancerous and non-cancerous, according to body system and site, and other health problems associated with tobacco use and environmental tobacco smoke. Other topics include the toxicity of tobacco products, educational interventions and the psychology of tobacco use, tobacco control measures and policies, reports on tobacco advertising and sponsorship and research into the tobacco health hazards faced by tobacco workers. Also included are tobacco employment studies, tobacco agriculture and technology, and the economics of tobacco. There are many more studies on the health problems caused by tobacco use than on other topics, reflecting the seriousness of the health impact of tobacco use.

The following **databases were searched**: Pub Med, Medline, and J-Gate (a new Indian database). The keywords used for the searches were 'Tobacco AND India', Smoking AND India, as well as names of diseases known from international research findings to be associated with tobacco, 'AND India'. Proceedings of other meetings on research related to tobacco provided additional sources. We are grateful to the librarians who helped with the literature searches, and to those who contributed articles and other publications from their own collections.

Some judgment was used in **selecting material** for this database, both according to its quality and to the usefulness of the information for framing tobacco control policies or interventions. We decided to include only publications from 1985 onwards. Some papers were excluded because they duplicated another paper by the same author/s, or because the methodology or statistics were unclear. In addition to research studies, some editorials, letters and news articles containing fresh viewpoints, interesting ideas, useful summaries or information were also included. The compilers of this bibliography are not responsible for any errors made by the authors of articles whose abstracts appear in the document. Readers should read the original papers carefully before using information contained in the abstracts.

A **table of contents** is included for quick location of abstracts and references, in which articles are categorised by topic area. Within each topic, articles are listed in reverse chronological order, but ascending alphabetical order of authors last names within the same year. Codes have been given for each article, designating the topic category, the year of publication (or of preparation), and the first three letters of the first author's last name. The table of contents shows the topic codes. Some articles are listed more than once, if they fall into more than one of the categories. Both codes are given with each listing. At the end of this document, there is a **full alphabetical listing** by last name of the first author, to make it easy to search for particular articles, and then locate them in the bibliography according to

the classification code used. The electronic word file is available from the authors upon request (by email, or we can send a CD ROM or diskette), so that users can search and sort the articles electronically. The files are also available on-line at the ACT-India website [www.actindia.org](http://www.actindia.org) and through the World Bank website: [www.worldbank.org/tobacco](http://www.worldbank.org/tobacco).

The following **types of reports** are included: analytical reports, case series studies and case reports, case-control studies, cohort studies, comparative studies, cross-sectional studies and cross-sectional follow-up studies, detection camp reports, descriptive reports, incidence studies, intervention studies, histological studies, news reports, overviews of research results, predictive reports, proceedings, reviews of studies, recommendations, and tobacco use surveys. There are also a few clinical, biophysical and biochemical studies.

Abstracts and most references to biological research have not been included in this compilation due to the highly technical and specialized nature of this area of research. Tobacco or areca nut research involving animal subjects was omitted also.

A tremendous amount of biological research on the effects of tobacco on the cells of the oral mucosa has been done in India. Researchers in cancer cytogenetics have mostly studied changes in the oral mucosa leading to cancer and the related abnormalities in the DNA structure of oral mucosal cells. Broadly, the main findings are that tobacco acts on cells as a mutagen, disrupting the inherited regulation mechanisms for repair and reproduction, putting them on the road to cancer. Individuals who have inherited defective DNA repair genes are more likely than people with normal DNA to develop cancer within their lifetime, but even persons with normal cell DNA from birth can develop cancer. The main message from cytogenetic research is that tobacco in all forms is carcinogenic and poses health risks to everyone exposed to it. Similarly, experiments with extracts of areca nut (sometimes erroneously referred to as betel nut), have demonstrated that substances it contains interact with and damage DNA, eventually making cells unhealthy and potentially cancerous.

Several health problems, which have been found through various studies conducted in the West to occur more frequently in smokers, have either not been studied in India, or not after 1985. These topics include periodontal disease (studied prior to 1985 in India), peptic ulcer and oesophageal reflux, impotence, osteoporosis, and cervical and breast cancers. Tobacco as a risk factor for these conditions might be worth investigating in India. It should be noted that results on the association of diabetes with tobacco use are also found with the studies on circulatory diseases, since diabetes is a risk factor for circulatory diseases.

This annotated bibliography on tobacco is perhaps the first attempt of its kind. There may be shortcomings and unintended omissions. We shall be most grateful to readers for pointing those out and contributing new as well as missed papers. We urge those working in any fields under-represented here to contribute further articles. This would improve this database and make future versions more useful and comprehensive. The database will be expanded and updated periodically.

Cecily Stewart Ray, Prakash C. Gupta and Joy de Beyer

## 1. Tobacco Use Surveys and Reports

Tobacco use surveys have been conducted in different areas of India to gather data on the use of tobacco by the population, awareness of the health effects of tobacco and attitudes toward tobacco use and efforts to discourage its use (usually called "tobacco control"). The purpose of these surveys is usually for planning awareness programmes. Other articles summarized here are reports of distilled knowledge on tobacco use patterns or of events that changed tobacco use in an area. This section is divided into subsections, by the type of population reported on.

### 1.1 Youth in general

Two articles are summarized here: the first on tobacco use in youth in the Southeast Asian Region, pointing out similarities among youth of the different countries in the region and particularities of tobacco use by Indian youth, and the second on reasons why Indian youth use tobacco and the forms it takes. With the second article, we are making an exception to the cut-off point of 1985.

TUS India (2002) Gup: Review

Gupta, PC and Ray, C. **Tobacco and youth in the south east Asian region.** *Ind J Cancer*, 39 (1), 2002, 5-35.

Tobacco use among youth in South-East Asian countries was reviewed using available literature. Youth who are out-of-school, earning, less educated and live in rural areas are more likely to use tobacco and start during the preteen years. Better educated youth may know the health effects of smoking but the dangers of passive smoking are generally unknown. Youth are fairly unconcerned about the present or future effects of tobacco use on health but do favour tobacco control measures. Children and youth are more responsive than adults to tobacco education. In India, a manufactured smokeless tobacco product, gutkha, has been targeted toward youth and has become extremely popular. An evolving epidemic of oral submucous fibrosis attributed to gutkha use has been documented among youth, with a resultant increase in oral cancer in lower age groups. Children in India are often illegally employed in bidi manufacturing. This review points out the need for specific actions.

TUS India (1982) Agh: Descriptive report

Aghi, M. B. **Patterns of smoking among children in India.** Contribution to UICC Manual on Smoking and Children, Geneva, 1982.

While peer pressure and parental example are important all over India in determining the use of tobacco by children, the dynamics of smoking behaviour are different in urban and rural areas. In **urban areas** the young often smoke because their peers smoke. However

peer pressure is not to the same degree among all the economic classes. Traditional values do not favour smoking among the young and never among females. The real problem in urban areas is located among urban poor. Boys under the age of 10 years and sometimes even 5 to 6 years smoke. Their most common reason is not peer pressure but their film hero who smokes. In the **rural areas** many people believe in multi-magical properties of tobacco and are unaware of the hazards of smoking. Tobacco is believed to be able to cure toothache. Advertisements for cigarettes are not to be found in villages, nor are health warnings against tobacco use. A bundle of bidis does not have any warning. Illiteracy, however would be an impediment to a warning's effectiveness. Gujarati village boys start smoking from the ages of 9 and 10 onwards, seeing their parents smoke. Young rural men often take to smoking to appear modern, open minded, tough and smart and often to show that they are educated. Many villagers in Gujarat believe smoking facilitates bowel movement in the morning. People generally believe that tobacco gives relief from gas, stomach acidity, headache and indigestion, hence when their sons complain of such problems, they give them bidi or hookli to smoke. Young boys who work in agriculture begin smoking because others are smoking and local employers in shops give bidis to young boys to attract them to work in their shops. Gossip groups, commonly seen in rural areas, are conducive to smoking. In rural Andhra Pradesh the following observations have been made: A young boy who is not smoking gets coaxed into it by his friends. Many young boys believe that smoking while watching a play or movie adds to the fun of watching it. Young boys going to work are told by their counterparts that to relax one must smoke. The majority of young girls smoke on advice of elder folks for things like fulfilment of a wish or longing during pregnancy, as a cure for anaemia, asthma and for getting relief from toothaches. A few young boys and girls take up smoking to show that they are grown up. A belief exists that one should not see a non-smoker's face in the morning as this could bring ill luck. Conclusion: It should be brought to the attention of policy makers that no awareness exists in rural India on the ill effects of tobacco. There is room for improvement in awareness in urban areas also. The responsibility for generating such awareness rests on the policy makers, whose policies and budgets impact the country.

## 1.2 School children

This section on tobacco use in school children is divided into two subsections. The first subsection summarizes results of surveys conducted at different times by different researchers using their own methodologies, while the second one contains surveys in various states in India conducted within a short time span (2001-2002) using identical methodology, as part of the Global Youth Tobacco Survey.

### 1.2.1 Independent surveys of school children

The articles in this section report on surveys of tobacco use and awareness among school children in areas of Punjab, Gujarat, Goa (2), Tamil Nadu, Karnataka, Haryana, and Maharashtra. The definition of a tobacco user is not clearly spelled out and may not be comparable across all the studies, but it is clear from each of them that tobacco use is

practiced among Indian school children. In areas of low adult use, like Goa and Punjab, tobacco is making inroads among the youth.

TUS India (2002) Kau: Tobacco use survey

Kaur S and Singh S. **Cause for concern in Punjab villages. High levels of Gutkha intake among students.** *Lifeline*, Volume 7 January 2002, 3-4.

(Department of Agricultural journalism, Punjab Agricultural University – Ludhiana)

A random survey among rural school children in five villages around Mullanpur, Punjab State, covering 100 students from 5 schools, was conducted with the objective of finding out the extent of gutkha use (a form of chewing tobacco) among village students, their level of awareness about hazards of tobacco and to suggest remedial measures. The results showed that 66 of the students regularly used gutkha, a matter of concern for parents, teachers and administrators. Of the 66 students found using gutkha, it was seen that 19 consumed it every day while 31 took it almost every day, and 16 said they took gutkha 2 to 3 times a week. Most of the users began in 7<sup>th</sup> or 8<sup>th</sup> standard. As many as 97 % of the students were aware of gutkha. Nearly 60% came to know of tobacco from school, and one third through advertisements on TV, magazines and ads painted on public buses. The authors observed that gutkha was available at roadside stands, tea stalls, cigarette shops and grocery stores and even bookshops. Above all it is conveniently priced at Re. 1, within easy reach of school children. In conclusion, the concern is that if gutkha consumption is so high among students in Punjab, the situation could be much worse in other states where religion does not play a deterrent role against tobacco use.

TUS India (1998) Pat: Tobacco use survey

Patel S, Shah R, Pati H, Gandhi P, Bhatt S, Venkur GK. **Awareness and use of substances among high school students.** Abstracts of scientific papers presented at the Golden Jubilee Annual National conference of the Indian Psychiatric Society, 1998. *The Indian Journal of Psychiatry* Vol. 40 Supplement, April, 1998.

Immediately after a 45 minute drug awareness programme, knowledge about tobacco and alcohol was assessed in 964 students studying in grades 9 to 12 in high secondary school of Baroda. It was assessed using a 20 item questionnaire administered in a classroom. A majority of the students had adequate knowledge. Incorrect responses were common regarding the following items: alcohol dependence is a disease, alcohol ensures good sleep and quitting smoking is impossible. Substance use was reported by 38 out of 964 students (3.9%) and it was limited to smoking, smokeless tobacco, alcohol and cannabis.

TUS India (1997) Kri: Tobacco use survey

Krishnamurthy S, Ramaswamy R, Trivedi U, Zachariah V. **Tobacco use in Rural Indian Children.** *Indian Pediatrics*, Vol. 34-october 1997.

(Department of Preventive Oncology, S.S.B. Cancer Hospital And Research Center, Kasturba Medical College and Hospital)

**Background:** Tobacco-related disease kills an estimated half million people a year in India and most adult users start young. **Objective:** To assess the degree, nature and pattern of tobacco use by children in rural areas. **Subjects and Methods:** A Tamil, Gujarati or Kannada translation of an internationally developed English questionnaire was administered to 335 children, both school going and non students, in rural southern Tamil Nadu, rural Gujarat, and slum semiurban areas in Bangalore, Karnataka. The Chi square test for linear trend in proportions was used to test the relationship between 1) The child's awareness of the health hazards of his or her tobacco habits, and 2) the significant persons who use tobacco in the child's environment. Odds ratios of each form of tobacco use were calculated for each score of awareness.

**Results:** The harmfulness of smoking was better known to children (68% boys, 94% girls) than that of chewing/applying (44% boys, 63% girls) or using snuff (51% boys, 64% girls). Ignorance of harmful effects was significantly associated with smoking and snuff use. Ever smoking was associated with an increased number of adult users in the child's world. Regarding the possibility of future use of tobacco, 83% of 94 girls and 49% of 241 boys said "No" while 11% girls and 47% boys were ambivalent. Only 1 boy said "yes". **Conclusion:** (i) Nearly 50% of rural children, boys more than girls, experiment with tobacco, mostly as snuff (nashyna, chhinkni) even by 10 years of age; (ii) Snuff use decreases, while smoking and chewing increase with age; (iii) Smoking is better known as a health hazard than chewing or snuff use; (iv) Tobacco use by elders influences children; (v) A larger study with objectively validated answers from 6 to 20 years olds, in and out of school is needed.

TUS India (1995) Kap: Tobacco use survey  
Kapoor SK, Anand K and Kumar G. **Prevalence of Tobacco Use Among School and College going Adolescents of Haryana.** *The Indian Journal of Paediatrics* 1995, 62: pp 461-466.

The study is about the prevalence of tobacco use among the school- and college-going adolescents of Haryana State in northern India. 1130 male and 256 female students were given a self administered questionnaire regarding tobacco use. Ballabgarh town of Haryana and the village around Ballabgarh were studied. Children from Class VIII to XII and college students in the Arts and Commerce discipline were the subjects of this study. A total of 166 (12%) students had ever smoked. About 6% of the children in the age group 13-14 years had ever smoked which increased to around 15% among those of age 18 years or more. The prevalence in males was 14.2% compared to 2.3% in females. The prevalence of current smokers was 7.1% Smokeless tobacco use was nonexistent. Similarly there were no rural-urban differences. Majority of smokers had started the habit at 10-15 years of age, though 36% had smoked at least once before the age of 10 years. Almost 80% said that their family members disapproved of smoking. Both the smokers and nonsmokers were well aware of the adverse effects of smoking.

TUS India (1992) Vai: Tobacco use survey

Vaidya SG, Vaidya NS, and Naik UD. **Epidemiology of tobacco habits in Goa, India.** In: Gupta PC, Hamner JE III, Murti PR, eds. *Control of Tobacco-related Cancers and Other Diseases*. Proceedings of an International Symposium, TIFR, Bombay, January 15-19, 1990. Oxford University Press, Bombay, 1992, pp 315-320. (Goa Cancer Society, Dona Paula, Goa, India)

Note: this article is cited in Traquet-Chollat C. Evaluating Tobacco Control Activities-Experiences and guiding principles, WHO, Geneva, 1996, pp 151-152, as an example of an evaluation of school interventions.

Children have been a particular target of tobacco advertising in Goa, India. Use of tobacco in different forms is very common and starts at a young age. Sweets and candies that look like cigarettes are sold in packages similar to cigarette packets. A tobacco product in paste form has been sold in toothpaste-like tubes. Called a "creamy snuff", this product is initially used as toothpaste. Because of this problem, the Goa Cancer Society conducted several epidemiological studies to determine the prevalence of tobacco habits among school-children and adults, to educate school children through a specially designed curriculum on tobacco habits and interventions, and to assess the feasibility of using schoolchildren to encourage their parents and the community in general to stop using tobacco.

Surveys The first survey was carried out from 1986 to 1987. Thirty-one schools were randomly selected from 73 villages, and self-administered questionnaires distributed to 6271 children. Information was elicited on socio demographic data, the nature of tobacco habits, the age of starting to use tobacco, and the possible influence of parents and family members. About 13.4% of boys and 9.5% of girls used tobacco, mostly of the smokeless variety. They began use as early as five years of age and most were introduced to tobacco use by family members and friends. The second survey was carried out the following year on persons aged 15 and over. A house-to-house survey was carried out on a 40% systematic sample from the 73 villages in the first survey. Information on age, sex and tobacco use was collected on 29,713 individuals. The results showed that 33% of men and 20% of women used tobacco.

Interventions Following these two surveys, education about tobacco habits and interventions was given to students in 46 selected villages. Class teachers were given a three-hour training course. A sample of 448 boys and 338 girls from the intervention areas were interviewed again and were compared with a sample of a similar number of boys and girls from the non-intervention areas. At the same time as the school-based intervention, information on tobacco was also distributed to the community by multipurpose health workers and Anganwadi (child welfare) workers. The main measures used were assessment of cognitive and attitudinal changes towards tobacco use following the school health intervention, and the cessation rate among adults who were influenced by the children in the community. (The study did not, however, make clear which were the results of the school health education and which were attributable to the community-based intervention of the Anganwadi). Children who received health education on tobacco and intervention methods were instrumental in achieving a stoppage rate of 9.7% among adults. Moreover, there was a significant difference in

attitude among children who had been given the programme, compared with the control group. The former group developed a negative attitude towards tobacco. The investigation focused on the importance of including health education material on tobacco in school curricula. It highlights the findings that such material is useful in shaping children's attitudes towards tobacco and in conveying the intervention messages to their parents.

TUS India (1991) Jay: Tobacco use survey

Jayant K, Notani PN, Gulati SS, Gadre VV. **Tobacco usage in school children in Bombay, India. A study of knowledge, attitude and practise.** *Indian J Cancer* 1991 Sep;28(3):139-47.

(Cancer Research Institute, Parel, Bombay, India)

A study of knowledge, attitudes and practice with regard to tobacco usage was conducted among 1278 boys and 353 girls studying in the final year in various schools in Bombay. The proportion of boys using some form of tobacco (including experimenters/tryers) was significantly higher in private English medium schools (22.5%) than in private Indian language schools (6.9%) or municipal Indian language schools (13.8%). There was also a significant difference between the two types of Indian schools. The only girls in the study were from Indian language schools and the proportion of tobacco users was very low (1.1%). Most (86%) boys who used tobacco were smokers. Hence the detailed analysis is restricted to smokers. Several probable factors influencing smoking behaviour were studied. It was found that a significantly higher proportion of boys smoked if their father or best friend smoked. Generally boys were more sensitive to best friend's or elder brother's disapproval than to parental. They were well informed about harmfulness of smoking but knowledge about specific health hazards was limited. Most of them had a positive attitude towards nonsmoking and smoking control programmes. Tobacco use has been proven to be a major health hazard. Although its use in adults in India is common, prevalence in adolescents in urban schools is not yet high. Before the situation changes we need to mount anti-tobacco educational programmes and work towards a non-tobacco generation to contain the harmful consequences of tobacco usage.

TUS India (1989) Vai: Tobacco use survey

Vaidya SG and Naik UD. **Study of Tobacco Habits in School Children in Goa.** In: Sanghvi LD and Notani PP, eds. *Tobacco and Health: The Indian Scene.* Proceedings of the UICC workshop, 'Tobacco or Health', April 15-16, 1987. Tata Memorial Centre, Bombay, 1989, pp 169-173.

Children notice everything that happens around them, very often without knowing the significance, but which has profound influence on their behaviour later, when they group up. There is hardly a child who does not know the smoking and chewing habits of their parents and teachers and there is hardly any parent or teacher who knows the tobacco or for that matter probably any other habits of their children or wards. A survey conducted in nine schools in villages of Goa, India covering 1668 children by self-administered

structured questionnaire revealed that 18% were tobacco habitués. The prevalence of tobacco habits was higher in boys (22%) than in girls (13%). The common habits were the use of "mishri" or "masheri" (i.e. roasted and powdered tobacco rubbed over the gums with the index finger) and "creamy snuff" toothpaste. While 84% (256) of the habitués had a single habit, 12% and 4% had double and triple habits respectively. The mean age of acquiring the habit was 11.9 years. Almost 75% of the habitués stated family influence as the most common influencing factor.

TUS India (1987) Moh: Tobacco and other drug use survey  
Mohan D et. al. **A multicentred study of drug abuse among students** (sponsored by the Ministry of Welfare, Government of India). Preliminary Report, AIIMS, New Delhi 1987.

This study found that among males, the most commonly abused psychoactive drug was alcohol (58.5%), followed by tobacco (19.3%) and opium (6.3%). Tobacco and alcohol are two major sources of revenue for the government and are actively promoted by companies that process or produce them.

### 1.2.2 Global Youth Tobacco Surveys in India

WHO and CDC developed the Global Youth Tobacco Survey (GYTS) to track tobacco use among youth across countries using a common methodology and core questionnaire, allowing comparability across surveys. The GYTS surveillance system is intended to enhance the capacity of countries to design, implement, and evaluate tobacco control and prevention programs. Funding for the GYTS has been provided by the Centers for Disease Control and Prevention, Canadian Public Health Agency, National Cancer Institute, UNICEF, and the World Health Organization Tobacco Free Initiative. The Tobacco Free Initiative (TFI) of the WHO and the CDC also provide technical assistance to the GYTS.

"Fact sheets" are available for India, summarising major findings of the surveys completed so far in 19 states/cities. Prevalence of tobacco use ranges from 4 percent to 63 percent among the full student samples; from 6 percent to 69 percent among boys, and from 2 percent to 56 percent among girls. Prevalence rates, and the percent of students who smoke but said they wanted to stop, are summarized below. The website for the factsheets: <http://www.cdc.gov/tobacco/global/GYTS.htm>

State/city	% students who use tobacco (all forms)	% girls	% boys	% smokers who would like to stop
Arunachal Pradesh	50	54	44	60
Assam	36	45	25	67
Bihar	59	61	51	67
Central Bihar	11	10	3	67
Culcutta	18	19	15	48
Delhi	5	6	3	No data
Goa	5	6	3	No data
Maharashtra	13	13	11	No data
Manipur	62	74	47	22
Meghalay	44	58	32	59
Mizoram	54	58	49	85
Mumbai	4	6	2	81
Nagaland	63	69	56	81
Navoday	11	13	8	92
Rajasthan	18	22	10	71
Sikkim	55	68	38	27
Tamil Nadu	7	8	5	73
Tripuna	44	50	37	33
West Bengal	15	17	8	76

Source: GYTS surveys, accessed on-line <http://www.cdc.gov/tobacco/global/GYTS.htm>

### About the GYTS Survey:

#### Methodology

- School-based survey of students aged 13-15 years
- Can include public and private schools
- Multistage sample design with schools selected proportional to enrolment size
- Classrooms chosen randomly within selected schools
- All students in selected classes eligible for participation
- Anonymous and confidential self-administered questionnaire
- Computer-scannable answer sheets
- Requires only 30 - 40 minutes to administer
- Fieldwork conducted in 6 - 8 weeks
- Country-level data with regional level stratification possible
- Core questionnaire
- Country may add questions to the questionnaire

The GYTS Questionnaire is composed of "core" country-approved questions designed to gather data on seven topics:

#### Prevalence of cigarette smoking and other tobacco use among young people

- How many young people have experimented with smoking cigarettes or use other forms of tobacco products

- The age at which young people begin cigarette smoking
- What brand of cigarettes young people smoke
- Where young people usually smoke
- Knowledge and attitudes of young people towards cigarette smoking**
  - The strength of intention to remain nonsmokers among young people who never smoked (index of susceptibility)
  - What young people perceive to be the social benefits and the health risks of smoking cigarettes
  - The extent of peer pressure on young people to begin cigarette smoking
- Role of the media and advertising on young people's use of cigarettes**
  - How receptive young people are to cigarette advertising and other activities that promote cigarette use
  - Awareness and exposure of young people to antismoking messages
- Access to cigarettes**
  - Where young people usually get their cigarettes
  - Whether sellers refuse to sell young people cigarettes because of their age
  - How much money young people spend on cigarettes
- Tobacco-related school curriculum**
  - What young people were taught in school about tobacco
  - Young people's perceptions of their school's programs to prevent cigarette use
- Environmental tobacco smoke (ETS)**
  - The extent of young people's exposure to smoking at home and in other places
  - Young people's perceptions about the harmful effects of ETS
- Cessation of cigarette smoking**
  - The short- and long-term likelihood that young cigarette smokers will quit.
  - For surveys in India, the core questionnaire was expanded to include bidi smoking and smokeless tobacco use.

TUS India (2003) Sin: GYTS surveys  
 Sinha DN<sup>1</sup>, Gupta PC<sup>2</sup>, Pednekar MS.<sup>2</sup> **Tobacco use among students in Eight North-eastern states of India.** *Indian Journal of Cancer* 2002; 3:1-45.  
 (<sup>1</sup> School of Preventive Oncology, Patna, India; <sup>2</sup> Tata Institute of Fundamental Research, Mumbai, India )

Objectives: To obtain baseline information about prevalence of tobacco use among school children in eight states in North-eastern part of India. Methods: A two-stage probability sample of students in grade 8-10 corresponding to 13-15 years of age was selected in each of the states and surveyed through anonymous, self-administered questionnaire. Results: Among the sampled schools, the school response rate was 100% in all states except Tripura (92%) and Meghalaya (96%). Over 80% of the eligible students participated in the survey. Among the respondents, the proportion of boys ranged between 50%-55%. The range of ever tobacco use was from 75.3% (Mizoram) to 40.1% (Assam). Over 65% users reporting initiation at 10 years of age or earlier in all states except Mizoram (23.1%). The range of current tobacco use (any product) ranged

from 63% in Nagaland to 36.1% in Assam. Current smokeless tobacco use ranged from 49.9% in Nagaland to 25.3% in Assam. Among the North-eastern states, Mizoram reported the highest smoking (mainly cigarette) prevalence (34.5%) and Assam reported the lowest smoking (mainly cigarette) prevalence (19.7%). Smoking among girls (8.3%-28.2%) was found to be high in North-eastern India. Cigarette smoking (8.6%-23.1%) was the most preferred form of smoking among students in all North-eastern India. Over half of cigarette smokers (53.2%-96.3%) and a high proportion of smokeless tobacco users (38.5%-80.8%) reported feeling like having tobacco first thing in the morning. Conclusions: Tobacco use including smoking was very high, even among girls, in all eight states in the North-eastern part of India. Signs of tobacco dependency were already visible in these students, more among those who smoked.

TUS India (2001) Ose: Review

Osei MR and Karki YB. **The Tobacco Smokescreen Victims: Women and Children.** *Lifeline*, October 2001: 6: 1-5. WHO SEARO, New Delhi, India.

This short report summarizes prevalence data for India and other countries in the region, and summarizes the results of Global Youth Tobacco Survey from 7 states in India and compares the data with the GYTS from Sri Lanka and Indonesia.

### 1.3 College students

Four studies are summarized here, one is an unpublished thesis on college students' tobacco use in Karnataka, the next two were done to form the basis for a tobacco control programme in colleges of Maharashtra and Andhra Pradesh respectively, with the former mainly looking at smokeless tobacco and the latter looking only at smoking.

TUS India (2003) Ano: News articles report on tobacco use survey

Anon. All smoke and no hope in sight. *Times of India*, May 29, 2003

<http://timesofindia.indiatimes.com/cms.dll/html/uncomp/articleshow?xml=0&artid=47806294>

The articles refers to a study of trends of tobacco consumption by 800 young collegians, conducted by the Consumer Education and Research Center (CERC). It cites the S Yellore, Director, Torch division of CERC as saying that the study finds two main reasons for students becoming addicted to tobacco – peer pressure and the influence of movies and television, and that “most believe “it wont happen to me”.

TUS India (1999) Nic: Tobacco use survey

Nichter SM, Nichter M, Sickle DV. **Tobacco use among male college students in**

**Karnataka.** (unpublished) Submitted to Social Science and Medicine as: Prevalence and Patterns of tobacco use among college students in South India.

(University of Arizona, Department of Anthropology, Tucson, Arizona)