

TOBACCO CONTROL IN INDIA

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Tobacco use has not been considered as a good habit by many societies, right from its introduction in 16th century. Availability of irrefutable scientific evidence on its health hazards from well-conducted cohort and case-control studies during 1950s supported the pleas for tobacco control. However, the anti-tobacco movement acquired a global nature after the publication of the official reports on the subject by the Royal College of Physicians¹ and the US Surgeon General². Subsequently, thousands of scientific investigations have confirmed the association of smoking with various diseases, and have provided additional evidence implicating cigarette smoking as a cause of coronary artery disease, stroke, obstructive airway disease, peripheral vascular disease, pregnancy complications including intra-uterine growth retardation and a variety of neoplasms including cancers of oral cavity, larynx, oesophagus, urinary bladder, kidney, stomach, pancreas, cervix and more recently of haematopoietic system³.

A long-term British study⁴ that followed 34,439 male doctors for 40 years, concluded that about 50% of all smokers will eventually die from their habit. The median survival of smokers was 7.5 years shorter compared to non-smokers, and the decrease in survival was also dose-dependent. Review of the health hazards of exposure to environmental tobacco smoke (or passive smoking) shows that it damages the respiratory tract of adults, adversely effects the cardiovascular system and results in lung cancer⁵. Children of smokers have an increased frequency of respiratory and middle ear infections and are at risk of impaired lung function. Passive smoking increases the frequency & severity of asthmatic episodes, both in children and adults. Newer epidemiological studies are substantiating the risk of coronary heart disease due to passive smoking. Many hazardous substances have been identified in tobacco³, but it has not been possible to identify all the components, which result into cancers or other diseases. Nicotine, tar, HCN, volatile aldehydes, nitrosamines are some of the identified hazardous substances in tobacco smoke.

Despite progress made in identification of these hazardous substances, it has not been possible to identify chemical(s) whose removal may render tobacco safe. Thus, the most effective preventive measure for control of tobacco related diseases is to avoid tobacco use.

The total number of tobacco users in the World has been estimated at 1.2 billion, which is expected to rise to 1.6 billion during 2020s⁶. At present, tobacco use causes death of 3.5 to 4 million people globally, which is expected to increase to about 10 million during 2020s. Developing countries need to be concerned because 7 million of these deaths would be occurring in these areas, mainly due to increasing trends of tobacco use.

Indian studies have also recognized tobacco use as a major health hazard in India. Association of smokeless tobacco use with oral cancer was pointed out as early as 1908⁷. Subsequent Indian studies on tobacco have amply shown its association with major diseases entities, both in smoking as well as in smokeless form. Tobacco is used for smoking as well as in smokeless form in India⁸. Smoking of tobacco is mainly in the form of bidi, followed by cigarette, hukah, chilum, chutta, etc. The habit of smokeless tobacco (also referred as tobacco chewing) is also very common. Some common forms of smokeless tobacco include khaini, Mainpuri tobacco, mawa, mishri, etc. Careful review of Indian studies concluded that bidi smoking is also associated with the diseases caused by cigarette smoking and results in similar physiological changes⁹. Association of smokeless tobacco has been observed with cancers of oral cavity, pharynx, larynx and oesophagus, and precancerous lesions of oral cavity.

Prevalence of Tobacco Use in India

Information on prevalence of tobacco use in India is available from surveys carried out in general community. As per various surveys carried out during 1980s, the prevalence of tobacco use among men above 15 years of age varied between 46% and 63% in urban areas and between 32% and 74% in rural areas. Among women it varied between 2% and 16% in urban areas and between 20% and 50% in rural areas¹⁰. A survey in Mumbai city showed the prevalence

of tobacco use to be 69.3% among men over 35 years of age and 57.5% among women above 35 years¹¹. A large survey in 2001 showed that the prevalence of current tobacco use above 10 years of age in Uttar Pradesh was 50.0% among men & 9.1% among women; whereas the prevalence in Karnataka was 41.0% among men & 14.9% among women¹².

Two nationwide surveys have been carried out in India for prevalence of tobacco use^{13,14} covering rural as well as urban areas. The second and the most recent nationwide survey (carried out from July 1993 to June 1994) revealed that 23.2% males (any age) and 4.0% females (any age) consumed tobacco in any form in urban areas¹³. In rural areas the prevalence of tobacco use in any form was 33.6% among males and 8.8% among females. The reported prevalence of tobacco use in 1993-94 is less than the prevalence reported in the first national level survey (1987-88), which showed the prevalence of tobacco use among men to be 25.7% and 35.3% in urban and rural areas, and among women to be 5.95% and 11.1% in urban and rural areas, respectively. The reason for this decline is not clear. Based on age & sex specific rates for tobacco use in urban and rural areas, as reported in the second national level survey, it is estimated that in 1996, 184 million persons (150 million males and 34 million females) in India used tobacco¹⁵. It has also been estimated that about 112 million persons smoked tobacco, while 96 million used it in smokeless form.

Deaths due to Tobacco in India

Information on mortality rates associated with tobacco use in India is available from three cohort studies. The age adjusted relative risk of mortality due to tobacco use and the prevalence of tobacco use, applied to overall mortality of the country, suggested that at least 630,000 persons died in 1986 due to tobacco use¹⁶. Median risks as observed from these cohort studies, and the prevalence of tobacco use as found in the first nationwide survey of National Sample Survey Organization¹⁴, when applied to the 1996 population, showed that about 800,000 persons in India died due to their tobacco habit in 1996¹⁷. Recent studies^{18,19} indicate that the risk of death due to tobacco use may in fact be more than that identified earlier¹⁶.

Magnitude of the Tobacco Related Diseases in India

Magnitude of three major tobacco related disease entities was estimated based on a careful review of Indian literature on risk estimates for development of these diseases; magnitude of these disease in India; and prevalence of tobacco use in the country¹⁵. Three disease entities under consideration were coronary artery disease, chronic obstructive lung diseases and cancers of oral cavity, pharynx, larynx, lungs & oesophagus. The prevalence of tobacco habit (smoking or smokeless form as applicable for the disease entity) was taken from the second nationwide survey on tobacco use (1993-94) by the National Sample Survey Organization¹³. The exercise revealed that the tobacco results into enormous morbidity in the country, being responsible for 42 lakh existing cases of coronary artery disease and 37 lakh existing cases of chronic obstructive lung diseases. It also caused about 154,000 incident cases of cancers in 1996.

Diseases due to Tobacco in India, 1996

Disease Entity	Total number in India	Cases due to tobacco use
Tobacco related cancers (Incident cases)	209,810	154,320
Coronary artery disease (Prevalent cases)	15,700,000	4,200,000
Chronic obstructive lung diseases (Prevalent cases)	14,000,000	3,700,000

Economic considerations of tobacco in India

The Ministry of Health & Family Welfare constituted an expert committee to undertake a comparative study on the economics of tobacco use inter-alia examining the tax revenue and foreign exchange earnings, employment and consumer expenditure on the one hand and the cost of tertiary level medical care facilities for treatment of tobacco-related diseases, losses due to fire hazard, ecological damage due to deforestation and disposal of tobacco-related waste on the other hand with a view to making an economic study of the impact of

tobacco consumption. The committee had members from the field of economics, health, health services, epidemiology, agriculture, tobacco trade, tobacco industry and trade unions. The committee suggested that tobacco economics should be studied in relation to it being a “de-merit good”. The short-run, indirect macro economic, secondary benefits of tobacco use are easily outweighed by the conservatively estimated costs of three major diseases associated with the use of tobacco, as shown by an ICMR study. The report underlined the public health angle as critical to an approach towards tobacco use, while not ignoring the short run, secondary and indirect benefits to economy other than tobacco consumers who bear the brunt of the addiction¹⁵.

The committee noted that information on costs due to tobacco related cancers, coronary artery disease and chronic obstructive lung diseases, are available through a study of the Indian Council of Medical Research. The average cost due to a case of tobacco related cancers (as experienced by the cohort²⁰) for the year 1990-91 was Rs. 134,449. The average cost of a case of chronic artery disease¹³ for 1992 was Rs. 14,909, whereas the average cost of a case of chronic obstructive lung disease was Rs. 11,952. Using the same discounting rate as used in ICMR study, the average cost of tobacco related cancers, coronary artery disease, and chronic obstructive lung disease, for the year 1999 was estimated to be Rs. 350,000, Rs. 29,000, and Rs. 23,300. The total cost to the country for the year 1999 due to these three disease entities was estimated at Rs. 27,761 crore²¹.

Cost of Major Diseases due to Tobacco Use in India

	Tobacco Related Diseases		
	Cancers	Coronary Artery Disease	Chronic Obstructive Lung Diseases
Number due to tobacco use			
1996	154,300	4,200,000	3,700,000
1999	163,500	4,450,000	3,920,000
Average Cost (1999) (Rs)	350,000	29,000	23,300
Total Cost India (1999) Billion Rupees	57.225	129.05	91.336
Total Loss (1999) = Rupees 277.611 Billion or US \$ 6.5 B			

Source : Rath GK & Chaudhry K²¹.

The economics of tobacco use needs to be considered at the consumer level as well as its economy wide effects, including linkages and externalities to other sectors¹⁵. The commonly identified benefits of tobacco (like employment, contribution to GDP, export earnings, public earnings, inter-industry linkages, etc.) are at macro level and for the government (except for the perceived benefit for the users), while the costs are incurred by the tobacco users. For an existing product like tobacco, any change in pattern of use is likely to upset the regional/ local economies. Addictive properties of this de-merit good influences the rationality of choice for tobacco. India is the third largest producer of tobacco in the world. Tobacco provides on an average, 10% of India's total excise revenue, of which 88% is contributed by cigarettes. The economics of tobacco use has to take note of the multi-sectoral connections of tobacco. The returns to the farmers from tobacco cultivation are high, but the cost of production is also high and thus, the relative return from the crop may not be highest for tobacco. The expert committee on economics of tobacco use in India noted that in 1993-94, total tobacco employment was over 35.59 lakh.

Major efforts for tobacco control in India

Warning on cigarette packages/ advertisements: Recognizing the health hazards of tobacco, the Government of India promulgated The Cigarette (Regulation of Production, Supply and Distribution) Act 1975. Under the act, all packages and advertisements of cigarettes are to carry a statutory warning, "Cigarette smoking is injurious to health". The Act provides specific instructions related to minimum font size, colour contrast, etc. However, the Parliament's Committee on Subordinate Legislation in its 22nd report (December 1995) on this legislation, observed that these guidelines were often not followed²². Considering the issue of tobacco in totality, the Committee made wide-ranging recommendations, including, strong & rotatory warning in regional languages on tobacco products; ban on direct as well as indirect advertisement of tobacco products; prohibition of smoking in public places; initiation of measures for awareness on tobacco through health infrastructure, educational institutions and mass media; and initiation of efforts for persuasion of farmers to switch over to alternate crops. These recommendations of Parliament's committee resulted in

modification of the proposed comprehensive legislation on tobacco control.

Warning on smokeless tobacco products: In India, nearly half of the tobacco users consume tobacco in smokeless form. Realizing the need for a warning on smokeless tobacco products (which are classified as food material), the provisions under the Prevention of Food Adulteration Rules (1955) were applied in 1990, which necessitates that every package and advertisement of smokeless tobacco product should have a warning stating that “chewing of tobacco is injurious to health”. Packages of arecanut should also state that “chewing of supari may be injurious to health”. An expert committee of Directorate General Health Services also provided the minimum font size and other guidelines for this purpose.

Cabinet guidelines for smoking in public places: Cabinet secretariat by an administrative order in 1990, prohibited smoking in certain places such as hospitals, dispensaries, educational institutions, conference rooms, domestic air flights, A/C sleeper coaches in trains, sub-urban trains, A/C buses, etc. State Governments were also advised to discourage sale of tobacco products in and around educational and health related institutions. Direct advertisements of tobacco products had already been prohibited in government media, including Doordarshan and All India Radio. These cabinet guidelines were reiterated in 1998.

Comprehensive legislation on tobacco control: In view of various recommendations and experience on relative inefficacy of the existing legislation (the Cigarette Act), the Ministry of Health & Family Welfare initiated the process of formulation of a comprehensive legislation for replacement of the Cigarette Act (1975). The draft legislation had to undergo a second round of inter-ministerial consultations, in view of the recommendations of the Parliament’s Committee on Sub-ordinate Legislation (22nd report - December 1995). The draft has undergone changes as per the suggestions of the Rajya Sabha’s Standing Committee and currently proposes a ban on tobacco advertising; clear health warnings on all tobacco products; limit on levels of tar & nicotine; ban on smoking in public places; and ban on sale of tobacco products to minors. The legislation is expected to help in reduction of tobacco

use and in generating a social environment conducive to tobacco control. Legislation has also been promulgated by the states of Delhi, Kerala, Goa and Rajasthan, aimed mainly on prohibition of smoking in public places. Recently, many states such as Tamil Nadu, Maharashtra, Andhra Pradesh, etc., have imposed a ban on production and sale of gutka and pan masala-containing tobacco, as a short-term measure.

Multi-sectoral approach for tobacco control: The problem of tobacco in India is complex, in view of the varied nature of its use; association of a large number of sectors like health, agriculture, finance, mass media, labour, education, industry, welfare, etc.; unorganized nature of work for many tobacco products; dependence of a large number of people on tobacco production & processing; and need for action by many agencies. The situation necessitates multi-sectoral approach, wherein different sectors (government as well as non-government) identify themselves as contributor to a radical social change leading to tobacco control.

A major exercise involving different sectors was organized in July 1991, through organization of a national conference on tobacco or health. The conference recognized tobacco as a major public health hazard and noted that consumption of tobacco is not compatible with the goal of "Health For All". It also realized that an integrated educational, legislative and agro-economic strategy with an operational framework and political, administrative, financial & research support is needed. The conference recommended establishment of a National Tobacco Control Commission to plan, coordinate and monitor tobacco control activities; Prohibition of smoking in certain public places as per Cabinet Secretariat O.M 27/1/3/90 (7.9.90); Ban on consumption of tobacco products in other public places; Ban on sale of tobacco to minors; Ban on advertising; Statutory warning on all tobacco products; Printing of tar & nicotine levels; Compulsory licensing of tobacco products; Afforestation by tobacco producers; Regulation of tobacco production; Preference for non-smokers in certain jobs; Study of tobacco economics; varied economic and agro-industrial restructuring measures aimed at reduction of involvement of government, Reduction of tobacco crop with rehabilitation of concerned, Removal of subsidies & guarding against involvement of foreign players, Increased taxation, etc.; Health education through various strategies; Involvement of

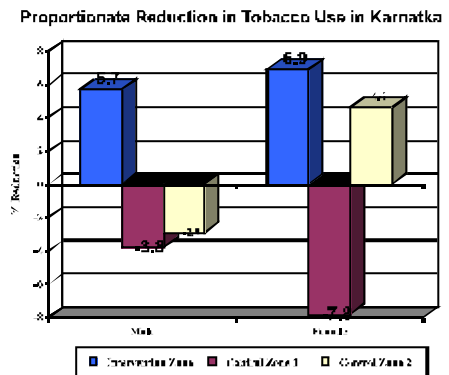
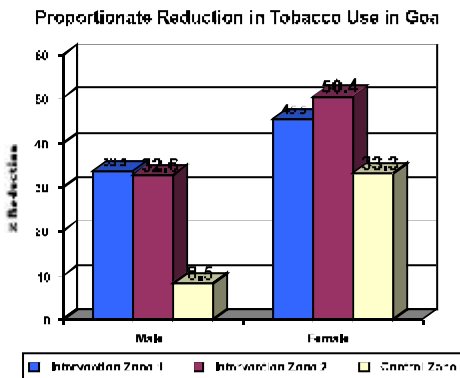
NGOs; Research; Development of a National action plan; and preparation of a White paper on government policy on tobacco.

The multi-sectoral and inter-sectoral approach by the Government of India is amply demonstrated through inter-ministerial consultations, consultations with non-governmental organizations and public hearings related to the development of development of the comprehensive legislation on tobacco control; follow up actions on the recommendations of the Parliament's committee on sub-ordinate legislation (22nd report); study on economics of tobacco use in India; and development of a country stance for the framework convention on tobacco control by the World Health Organization. The Indian Council of Medical Research (ICMR) conducted operational research project for involving schools and community volunteers in anti-tobacco community education. The ICMR's collaborative project with All India Radio also showed the mechanism of inter-sectoral collaboration in cost-effective education through radio.

Community education on tobacco: In view of the deep-rooted nature, the eradication of tobacco habit would require concerted action resulting into a social change. Community education regarding tobacco and its health hazards would necessarily be an integral component of such an action plan. Anti-tobacco education needs to be targeted at decision-makers, professionals and the general public, especially the youth. Efficacy of educational activities in tobacco cessation had amply been demonstrated by various organizations. A study by Tata Institute of Fundamental Research, Mumbai, showed that after an intervention of ten years, a significantly higher proportion of persons in the intervention group stopped tobacco usage as compared to a control cohort²³. No Tobacco Day (31st May) activities have been a regular feature since 1988, which generally comprise of educational advertisement(s) in newspapers along with a programme/ workshop in Delhi and at other centres by states. Tobacco has been included as a topic in books brought about by NCERT. National Cancer Control Programme also stresses on anti-tobacco education, in view of the fact that half of the cancers among men and about one fifth of the cancers among women in India pertain to tobacco related sites. The anti-tobacco community education activities have been initiated in about 60 districts through district level projects for control of cancers. India

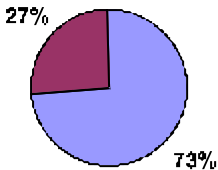
participated in WHO's SEAAT Flame project, under which an anti-tobacco flame traveled by road from Delhi to Calcutta and from Delhi to Thiruvananthapuram. Educational programmes on tobacco through television have also been initiated.

The Indian Council of medical research (ICMR) carried out operational research studies on anti-tobacco community education through involvement of existing infrastructures. The studies involved radio, health infrastructure, schools and community volunteers. The primary health workers in the areas utilizing health infrastructure also examine the oral cavities for presence of any pre-cancerous lesions²⁴. The intervention through schools resulted in overall reduction of tobacco habit by 11.8% among men and 9.1% among women in one intervention zone and by 13.4% among men and 13.3% among women in a second intervention zone as compared to a decrease of 2.0% among men and 10.2% among women in control zone. Based on the experience of this project, Ministry of Education, state of Goa, included an 8 hour course on tobacco as a part of co-curricular activities for standard five and above. One-year intervention through community volunteers resulted in 26.3% males and 10.5% females quitting tobacco habit with another 10.1% males and 4.3% females being likely quitters (6 months had not passed since tobacco cessation). Intervention through health infrastructure achieved a reduction of tobacco habit in experimental area, amounting to 5.7% in the males and 6.9% in the females, as compared to an increase of 3.8% among male and 7.8% among female in one control area and an increase of 2.9% among males and 4.6% decrease among females.



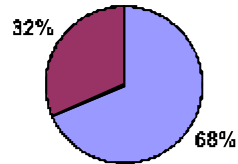
The collaborative project of ICMR and All India Radio (Radio DATE - acronym for Drugs, Alcohol, and Tobacco Education) was in the form of 30 weekly episodes of 20 minutes each. Ten episodes focused on tobacco. The episodes were broadcast from 84 stations of All India Radio (out of 104 existing at that time) at prime time, simultaneously in sixteen languages. The Hindi prototype was sent to selected radio stations of All India Radio for translation in regional language, as per the specified guidelines. The broadcast was during a specified time (between 8.00 A.M. and 9.00 A.M. on Sundays, with a repeat broadcast during the week, generally in the evening). Two community based surveys in rural areas with no organized anti-tobacco programmes showed that about 4% tobacco users in rural Goa and about 6% users in rural Karnataka quit their habit after hearing the programme. About 32% of the potential listeners in Karnataka and about 27% of the potential listeners in Goa had heard at least one episode on tobacco.

Proportion of Persons Hearing the Programme in Rural Goa



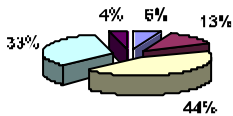
■ Heard Programme ■ Did not Hear

Proportion of Persons Hearing the Programme in Rural Karnataka



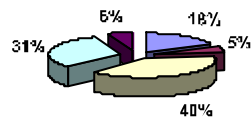
■ Heard Programme ■ Did not Hear

Effect of Radio DATE in Rural Goa



■ None ■ No Comments
 ■ Planning to Quit ■ Reduced Frequency
 ■ Quit Habit

Effect of Radio DATE in Rural Karnataka



■ None ■ No Comments
 ■ Planning to Quit ■ Reduced Frequency
 ■ Quit Habit

Coverage of entire country for anti-tobacco education is a formidable job and can not be achieved without active support from Non-Governmental Organizations and mass media. They however, need support from the health departments for availability of reliable and impartial information on the subject. Support would be needed not only from health related non-governmental organization but also from other related sectors like education, economics, agriculture, welfare, etc.

Expert committee on health hazards of pan masala-containing tobacco

The Directorate General of Health Services constituted a committee to examine the scientific literature on health hazards of pan masala-containing tobacco. The committee realized that if this substance is a causative factor for oral cancer, then most of the users of this substance would be in incubation period and thus, epidemiological data not likely to represent correct picture. The committee examined scientific literature from point of view of in-vitro studies, animal studies, epidemiological data on combination of various substances in pan-masala-containing tobacco and data on tobacco mixtures similar to pan masala-containing tobacco. The committee recognized Pan Masala-containing tobacco to be an important cause of oral sub-mucous fibrosis and cancer. Based on this report, the Central Committee on Food Standards, recommended a ban on chewing tobacco, which was considered by the Government from logistic point of view. Various state Governments have banned the sale and production of such products as a short-term measure, till a long-term strategy for dealing with this substance is finalized.

Tobacco Control Cell

A Tobacco Control Cell has been established in the Department of Health, New Delhi, since August 2000, under Deputy Secretary (PH), with the aim of coordination of activities related to tobacco control, with the help of a 7 member Advisory Board. The current activities initiated through this cell include, educational programmes through mass media and schools, strategy papers for alternate crops and bidi workers, advocacy workshops for non-health sectors, and establishment of tobacco cessation clinics.

Framework Convention on Tobacco Control (FCTC)

The FCTC could be considered as generator of protocols that can establish firm commitments by member countries on key issues. As long as the participant countries are a part of the convention, the convention is a legally binding instrument. This initiative by the World Health Organization provides countries a platform to sit together and discuss the issue and agree or disagree on a certain set of tobacco control measures for adoption. The FCTC adopts a flexible approach and does not resolve all the substantive issues in a single document, but may deal with specific issues under separate agreement(s). These protocols may be adopted at the time of the adoption of the convention (if the negotiating states agree) or at a later stage. The process of FCTC was initiated in view of tobacco being a public health tragedy of the first order; problem existing in every country; key elements like smuggling transcending national boundaries; and problem incapable of being fully tamed by countries acting in isolation. A working Group to FCTC discussed the issues from public health point of view, after which the Intergovernmental Negotiating Body is expected to complete the process of negotiations by May 2003.

Tobacco control and society

The awareness regarding the health hazards of tobacco use seems to have increased during recent times. The indication to this effect comes from discussions on the comprehensive legislation in the Parliament, Litigations by NGOs and their demand for stricter legislation for tobacco control, surveys indicating the will of community for legislative action. This indicates that social environment is conducive for major activities for tobacco control. Decision-makers in different ministries/ departments at centre are aware of the problem, but logistic aspects are still major impediments. Research has been initiated on various economic and employment related aspects and efforts are on to work towards a major reduction in reduction of tobacco use in the country.

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