The incontrovertible scientific evidence about tobacco use causing serious health consequences is now accepted even by the tobacco industry. Research continues to enlarge the spectrum of diseases caused by tobacco use among users as well as among nonusers exposed to secondhand tobacco smoke.

This review attempts to illustrate the greater risk to adverse health outcomes among the less educated due to a greater prevalence of tobacco use among them.

Numerous surveys worldwide and in India show a greater prevalence of tobacco use among the less educated and illiterate. In a large population based study in Mumbai, the odds ratios for any kind of tobacco use among the illiterate as compared to the college educated were 7.4 for males and 20.3 for females after adjusting for age and occupation. School-dropouts are more likely to take up tobacco use in childhood and adolescence. Student youth taught about the dangers of tobacco use in school are less likely to initiate tobacco use. High tobacco use among the less educated and underprivileged affects them in multiple ways: (i) Tobacco users in such households, because of their nicotine addiction, prefer spending a disproportionate amount of their meager income on tobacco products, often curtailing essential expenditures for food, healthcare and education for the family. (ii) Because of high tobacco use and other factors of disadvantage connected with low educational status, they suffer more from the diseases and other health impacts caused by tobacco. This higher morbidity results in high health care expenditures, which impoverish the family further. (iii) Premature death caused by tobacco use in this under-privileged section often takes away the major wage earner in the family, plunging it into even more hardship. Tobacco use is a terrible scourge particularly of the less educated, globally and in India. Tobacco use, education and health in a human population are inter-related in ways that make sufferings and deaths caused by tobacco use even more tragic than normally realized. Tobacco use works against social and economic development and should be appropriately addressed through health education and tobacco cessation services particularly in the under privileged, illiterate population.

Key words: Cardiovascular diseases - chronic bronchitis - educational status - health care - India - morbidity - mortality - neoplasms - pregnancy outcome - prevalence - risk - smokeless tobacco - smoking - tobacco use cessation.
Introduction

Scientific evidence of disease caused by tobacco use has been piling up steadily since the mid 1960s. Smoking is a major cause of cancer, especially of the lung, larynx, oral cavity, pharynx and oesophagus, as well as of cardiovascular diseases and chronic obstructive pulmonary diseases1-3. Pregnant women who smoke are more likely to have low birth weight babies or still-births. Smokeless tobacco use in pregnancy also increases the likelihood of such adverse outcomes4,5. Smokeless tobacco use causes oral cancer, oesophageal cancer (if chewed with betel quid), and contributes to cardiovascular diseases3,6. A large body of evidence exists for disease causation due to tobacco smoke in the environment7.

A large follow up study of British doctors led researchers to infer that half of all cigarette smokers eventually die from smoking related diseases, about a quarter of them in middle age8,9. The WHO estimates that approximately 12 per cent of global deaths are due to smoking – about 5 million deaths10. Today even the tobacco industry admits (on its websites) that tobacco smoking is addictive and causes many serious diseases.

Awareness of these dangers of tobacco use is increasing over time in the population worldwide, but faster in more educated in populations11. The illiterate have even less access to these facts, use tobacco and suffer tobacco related disease in larger proportions.

International evidence

Tobacco use is much more common among the less educated and less privileged sections of most societies. This has been documented in many countries the world over, including India, through national surveys and surveys in localised populations12.

As a recent example, a cross-sectional study across 15 European countries in 1999–2000 on men and women heart patients, aged 71 yr and above, showed that the prevalence of current smoking was significantly lower in men with secondary education compared to those with only primary education and lower in men with tertiary education compared to those with secondary education alone13.

Prevalence studies in Nigeria, Malawi and Zambia point to a greater vulnerability of poorer and less educated people to smoking. However, some studies in South Africa and Chad found better educated people had higher smoking rates than the less educated. Thus, available studies in Sub-Saharan African countries do not have consistent results on the relationship between smoking and education. In Africa, cigarette smoking tends to be more of an urban phenomenon, and other forms of tobacco, such as home-made snuff are used more by rural populations14.

With growing awareness of the health risks and declines in smoking prevalence in many countries, these declines are now being measured with reference to educational levels and other socio-economic variables.

Analysis of four cross-sectional national surveys conducted in the United States between 1971 and 2002 revealed that the higher prevalence of smoking among persons with the lower levels of education (less than a high school education or high school graduation only) persisted over the period and the disparity had widened despite declines in smoking in all groups15.

Comparison of national cross-sectional surveys conducted in nine European countries between 1985 and 2000 (a period characterised by intense tobacco control policies) on men and women aged 25-79 yr found that overall, greater declines in smoking were seen among persons with post-secondary education, but country-wise analyses revealed that in Italy and the UK those with elementary education level showed greater declines than the more highly educated, which may be due to specific tobacco control policies16.

In China, a cross-sectional survey representing the entire country conducted in 1996 found that about 37.6 per cent overall smoking prevalence and about 9.4 per cent of 45,995 current smokers had quit. Respondents with a university education were more likely to have made an attempt to quit. About 16 per cent of current smokers said they intended to quit, but had not taken any action, while 72 per cent of current smokers reported not intending to give up smoking. A conclusion was that smokers in China need to be mobilised to quit17.

Declines in smoking are occurring faster in developed countries respect to developing countries. In both it is observed that declines usually occur faster in the more highly educated.

Evidence from India

Tobacco use is much more common among the less educated and less privileged sections of the society: Smoking has been widespread in India for many decades. The National Family Health Survey-2 (NFHS-2) shows a gradient on two general types of
An independent analysis of the NFHS-II data showed that prevalence of tobacco use decreases with increasing years of education, as also shown by odds ratios (OR) of tobacco use for different educational levels (Fig. 1a & b). The gradient is stronger for smoking than for chewing and steeper for women than for men. The inverse trends seen for smoking and chewing by educational level were highly significant for men and women. This survey comprised 334,553 individuals (160,871 men and 154,726 women) 15 yr and older in 91,196 households.

In the large house-to-house baseline survey conducted on for a cohort study in Mumbai during 1992-94 on adults belonging largely to the middle, lower middle, and lower classes, a separate analysis of 81,837 respondents showed an educational gradient for all tobacco use. The odds ratios for any kind of tobacco use among the illiterate compared to the college educated were 7.38 for males and 20.25 for females after adjusting for age and occupation. In this population smokeless tobacco use was more common than smoking.

In this survey, bidi smoking and cigarette smoking were about equally common. The different educational gradients for cigarette smoking, bidi smoking and smokeless tobacco use were calculated. With age adjustment all the gradients showed an inverse relationship of tobacco use with education. Cigarette smoking, practiced almost exclusively by men, had the educational gradient with the smallest incline. The slightly more common bidi smoking, also practiced almost exclusively by males, had the steepest educational gradient, while that for smokeless tobacco use practiced by men had a moderate incline. For women, smokeless tobacco had a steep educational gradient (Fig. 2).

Other studies of tobacco use prevalence in the metropolitan cities of Delhi and Kolkata also found inverse educational gradients for tobacco use, with the highest tobacco use among the illiterates. In Delhi, men with no education were 1.8 times more likely to smoke than men with college education and women were 3.7 times more likely. Among adult smokers, about half of the men (52.6%) and 4.9 per cent of women smokers smoked cigarettes. Compared with cigarette smokers, bidi and chutta smokers tended to be older, married, less educated and to have lower incomes and lower body mass indices and not have a family history of heart disease. In Kolkata just over one fourth of smokers (26%) and just over one tenth (11.5%) of chewers were college graduates and above. Filter cigarettes were the most common products used (47.2%) in Kolkata, followed by bidis (35.6%).

In a cross-sectional sample survey (Sentinel Survey) of the ICMR and WHO on 35,288 persons aged 10 and above in Karnataka and 29,931 in Uttar Pradesh, a negative association between education and tobacco use was observed overall and in most of the age groups. There was a markedly lower prevalence of tobacco use in persons with college education compared to others. This survey did not investigate further the reasons for this phenomenon.

**Interest in quitting appears related to higher levels of education:** In the Sentinel Survey on Tobacco Use, interest in quitting was very low overall, especially in Uttar Pradesh, where 3.5 per cent of men and 1.4 per cent of women using tobacco had ever thought about quitting, but less than half of those were currently
interested and only 5 men and 1 woman (<0.1%) could quit. The situation in Karnataka was considerably better. Here, 18.4 per cent of men and 9.3 per cent of women using tobacco had ever considered tobacco cessation, but only 4.0 per cent of men and 2.2 per cent of women were able to actually quit the use of tobacco. Awareness of disease risks was rather low, except for cancer. It thus appears that the population in general lacks motivation to avoid or quit tobacco use, but it is notable that Karnataka has higher literacy rates (F 44%; M 67%; ≥ 7 yr) than Uttar Pradesh (F 25%; M 56%; ≥ 7 yr)25.

Proportions of past users in the baseline survey of the Mumbai Cohort Study were low, ranging from 3.6 per cent for women users of smokeless tobacco to 12.9 per cent among men who had smoked cigarettes. In between these rates, 4.3 per cent of men who used smokeless tobacco and 5.4 per cent of men who smoked bidis had quit. Quit rates among the more educated group (high school and above) were more than twice those among the less educated for both men and women who were past users of smokeless tobacco and for men who had smoked cigarettes20.

Youth who drop out of school or whose parents have a low educational attainment take up tobacco use earlier than others and/or have a higher prevalence of tobacco use: A handful of available studies on youth indicate an inverse relationship between education and tobacco use in youth26,27.

Studies in rural children with low socio-economic status (indicating low educational level of parents) have found children starting to use tobacco by 10 years in Gujarat, Karnataka and Tamil Nadu28, or even before age five, in Goa, where the most common tobacco products used by children were for brushing teeth (mishri and creamy snuff), as learnt in the family29.

Fishing communities in Kerala have higher school dropout rates and lower levels of literacy compared to the rest of the State, and in these communities there is a higher prevalence of tobacco use among both adults and youth. A small survey of 146 youth aged 5-20 yr found 29 per cent of them chewing pan-tobacco and 2 per cent smoking, whereas surveys in other parts of Kerala had found less than 2 per cent of children below 16 yr using any form of tobacco30.
Child and adolescent workers tend to be influenced by their seniors and employers in taking up smoking, tobacco chewing, other substance abuse and sometimes other risky behaviours. Youth workers aged 15-24 yr tend to have a high prevalence of tobacco use that may reach sixty percent and above.

A study of 1000 school boys in urban Gujarat found that sons of mothers with university education did not smoke, while 6.9 per cent of boys with illiterate mothers and 4.4 per cent of boys with mothers having up to secondary education smoked. An unpublished survey of 300 street children in Mumbai (all non-school going) found they mostly began using tobacco by 8 yr of age.

Surveys conducted in Delhi found that generally children in government schools took up tobacco use in greater proportion than children in private schools (a surrogate for higher educational attainment of parents). A survey of school personnel in Bihar found that indeed state schools were without policies prohibiting tobacco use by students or personnel, but that over half of federal schools (under the Union Government) had such policies.

In an early study of 1278 boys in 10th standard in Mumbai, tobacco use, mainly smoking, was found much higher in private schools than in government schools. However more recent studies in Mumbai, both published and unpublished, have found that a visibly higher proportion of children in municipal schools use tobacco and that gutka is the predominant form. In a recent unpublished study of 30,000 municipal school children in Mumbai, 50 per cent of them consumed 1-2 sachets of gutka every day. In a very small Mumbai study in different types of secondary schools, gutka was found used by 10 per cent of boys. In many school surveys in urban areas, children using tobacco reported initiating its use in the early to mid-teen years.

Student youth taught about the dangers of tobacco use in school are less likely to initiate tobacco use: Although in some developed country scenarios (e.g., in Canada), knowledge about the long-term health consequences of smoking has been found to be only a weak predictor of smoking initiation, in India the opposite seems to be more likely at present.

In India, the Global Youth Tobacco Survey (2001-2005), conducted among students aged 13-15 yr, showed that the prevalence of curricular teaching about the hazards of tobacco use (half of the students had been taught), or a discussion of reasons why people their age smoke (one third had discussed this in class) was strongly and negatively correlated (P<0.001) with a current prevalence of tobacco use.

For example, in Bihar, where only 2.7 per cent of the students in grades 8-10 were taught about the dangers, there were 13.9 per cent current cigarette smokers and 46.7 per cent current users of other tobacco products, while in Punjab, where 75.5 per cent were taught about the dangers, there were 0.5 per cent current cigarette smokers and 2.1 per cent current other tobacco users.

School policies on tobacco use and anti-tobacco curricula that are part of a broad, health promotive and participatory health education curriculum appropriate for age have been effective in preventing tobacco use and promoting activism against tobacco in India.

Tobacco expenditure leads to a crowding out of expenditures devoted to food and education and a rise in health care: In an econometric analysis of household expenditures from National Sample Survey data on Indian households for the year 1999-2000, spending patterns on various groups of commodities were analyzed by the household status of tobacco consumption. It was found that “an increase in the outlay for tobacco led to a fall in the budget share devoted to food, education, and entertainment in rural India, while it led to a rise in the shares devoted to health care, clothing, and fuels”. A similar increase in tobacco expenditure in urban India “led to a decrease in the budget shares for food, education, fuel, and entertainment while leading to a rise in the shares of health care and conveyance”. Higher expenditure on tobacco was also found to be associated with higher expenditures on alcohol and pan (betel quid). The effects of tobacco expenditure on the consumption of other goods “were found to be in the same direction for both low income and high income households”. Further analysis of the implications of reduced food expenditure on the nutrition intake of households revealed that per capita per diem intake of nutrients such as calories, protein and fat are lower among high tobacco spending households. The findings here support the idea that expenditure on tobacco has crowding out effects, as observed in other developing countries. The higher expenditures on health care by families consuming tobacco are likely to be related to diseases and conditions caused by tobacco.
Most tobacco related diseases eventually require hospitalisation. Yet, hospitalisation frequently results in financial catastrophe for Indian families, as only 10 per cent have some form of insurance and most forms are inadequate. A conservative estimate finds that one-fourth of hospitalised Indians were not poor when they entered the hospital but became so because of hospital expenses, often after having borrowed money or having sold off assets.

Premature death caused by tobacco use in the under-privileged section of the society often takes away the major wage earner in the family. Thus plunges families into further hardship, where the educational needs of children are less likely to be met. Hence tobacco use is an indirect risk factor for the destitution of families.

The overall excess risk of death and the specific risks of certain major diseases: In India, most adult deaths involve vascular disease, tuberculosis, or other respiratory disease. A large case-control study of adult deaths in Tamil Nadu showed that vascular diseases are the most predominant, followed by respiratory and neoplastic diseases (cancers).

Overall mortality

In the Mumbai Cohort Study the age and education adjusted relative risk (RR) of death for men who smoked cigarettes was 1.37 (95% CI 1.23-1.53) and for men who smoked bidis was 1.64 (95% CI 1.47-1.81), with a significant dose-response relationship for number of bidis or cigarettes smoked. For women tobacco users, mainly smokeless tobacco users, the adjusted relative risk was 1.25 (95% CI 1.15-1.35). It is notable here that the relative risk of death for bidi smokers, mostly less educated than cigarette smokers, is higher than that for cigarette smokers.

Association with diseases

Cardiovascular disease: In the Mumbai Cohort Study, men who smoked had a relative risk (RR) of 1.54 (95%CI: 1.09-2.19) of dying of other cardiovascular diseases, but only RR=1.17 (95%CI: 0.99-1.39) for dying of ischaemic heart disease. In this study, smokeless tobacco use posed a small significant excess risk of death in women due to ischaemic heart disease, but not for men and not other cardiovascular diseases.

A cross-sectional survey in a cluster of three villages in rural Rajasthan, among 3148 residents aged over 20 yr (1982 men and 1166 women) found a total prevalence of coronary heart disease of 3.5 per cent (111 cases), with 3.4 per cent (68 cases) in men and 3.7 per cent (43 cases) in women. An overall decrease in the prevalence of coronary heart disease with increasing educational status was apparent in both sexes, but the trend was significant only in women (X^2 = 7.25; P = 0.007). The prevalence of coronary heart disease (diagnosed by electrocardiography) was significantly higher among uneducated and less educated people, and showed an inverse relation with education in both sexes. Among uneducated and less educated people there was a higher prevalence of the coronary risk factors smoking and hypertension. Logistic regression analysis with adjustment for age showed that educational level had an inverse relation with prevalence of electrocardiographically diagnosed coronary heart disease (ORs: men 0.82, women 0.53), hypertension (ORs: men 0.88, women 0.56) (P < 0.011 for chi square for men; P < 0.001 for women), and smoking (OR for men 0.73, for women 0.65) (P < 0.001 for chi square for men and women) but not with hypercholesterolaemia and obesity.

In the case-control study in Tamil Nadu, the risk ratio for “ever” to “never” smokers for stroke was 1.6 (95% CI: 1.3-1.9). Twenty per cent of stroke cases were considered smoking associated.

Chronic obstructive pulmonary disease: In the Mumbai Cohort Study, male smokers had a relative risk of 2.1 (1.5-3.1) of dying of COPD, but for women smokers the relative risk did not reach significance.

In an ongoing multi-centric cross-sectional survey of 35,295 adults aged 35 yr and above in both urban and rural areas in or around Bangalore, Chandigarh, Delhi and Kanpur, COPD was diagnosed in 4.1 per cent of individuals. Prevalence among bidi and cigarette smokers was 8.2 and 5.9 per cent, respectively. Significantly elevated odds ratios for COPD were seen for cigarette smokers 1.95 (95% CI: 1.6-2.4), bidi smokers 2.7 (95% CI: 2.3-3.1) and hookah smokers 2.9 (2.0-4.1) compared to nonsmokers (by multivariate logistic regression). Odds ratios for COPD were higher for lower socio-economic status, urban residence and age. Environmental tobacco smoke exposure among nonsmokers had an OR of 1.4 (95% CI: 1.2-1.6).

A cross-sectional study in Delhi of 4141 residents 18 yr and above (56.6% males) interviewing them about chronic respiratory symptoms (chronic cough, chronic
phlegm, breathlessness and wheeze) and smoking history followed by a clinical examination and spirometry found 39.1 per cent smokers and 6.7 per cent ex-smokers among men and 2.6 per cent among women. Analysis was restricted to men due to low smoking prevalence among women. The prevalence of bidi smoking (59.7%) versus cigarette smoking (29.4%) showed a strong educational gradient over 5 educational groups, with bidi smoking more common among the less educated subjects and illiterates (chi square = 364.15, *P* <0.00001). The proportion of symptomatic patients increased with pack-years of smoking and was consistently higher for bidi smokers in each of the four groups of smoking intensity, varying from 13.8 per cent of bidi smokers and 8.3 per cent of cigarette smokers in Group 1 (< 2.5 pack-years) to 67.4 per cent of bidi smokers and 46.8 per cent of cigarette smokers in Group 4 (> 13.5 pack years). Bidi smokers also had significantly lower lung function values compared to cigarette smokers. It was concluded that chronic obstructive respiratory disease was considerably more common in the less educated groups, especially the illiterates.

Tuberculosis: In the Mumbai Cohort Study, men who smoked during the study period had a relative risk of 2.30 (95% CI: 1.68-3.15) for death due to TB.

In a case-control study in Chandigarh with 200 patients of tuberculosis (TB), and two sex and age matched control groups, comprising patients with other respiratory illnesses and apparently healthy volunteers, smoking was significantly associated with the risk of active pulmonary TB. Adjusted odds ratios for smokers versus non-smokers were 5.4 (95% CI: 3.1-9.6) comparing cases with the respiratory illness group, and 4.4 (95% CI: 2.6-7.7) comparing cases with the healthy group. Exposure to patients with TB was also of course an important risk factor both when comparing with the respiratory illness group (OR=2.7; 95% CI: 0.98-7.3) and with the healthy group (OR=5.4; 95% CI: 1.5-19.6). In this study, the proportion of cigarette smoking in all the groups was slightly higher than bidi smoking.

A risk ratio of 4.5 (95% CI: 4.0-5.0) for ever smokers dying of TB was found in a population-based case control study conducted in Tamil Nadu on the smoking habits of 27,000 urban and 16,000 rural men who had died from medical causes. As many as 1127 or 61 per cent of the 1840 tuberculosis deaths in the study population were associated with smoking.

Cancer: In the Mumbai Cohort Study, male smokers had a RR of 2.6 (95% CI: 1.8-3.8) for dying of any cancer, but for dying of oral and pharyngeal cancers the RR was 19.7 (95% CI: 2.7-146.2) and that for respiratory cancers was RR=4.1 (95% CI: 1.5-10.9). The two relative risks for dying of cancer for smokeless tobacco use for men [RR=1.40 (0.95-2.06)] and women [RR=1.6 (95% CI: 1.2-2.1)] were quite comparable.

In a hospital based case-control study with 142 male anterior tongue cancer patients and 635 controls, the illiterate group showed an almost 2-fold significant excess risk (OR=1.8; 95% CI: 1.2-2.7) for anterior tongue cancer compared to the literate group, in a multiple logistic regression. Tobacco chewing was the other predominant risk factor with an odds ratio of 1.7 (95% CI: 1.2-2.6).

In a hospital-based case-control study of men with oropharyngeal (678 cases), hypo-pharyngeal (593 cases) and laryngeal cancer (427 cases), with 635 controls, illiterate men had 50-60 per cent excess risk for pharyngeal cancers compared to literate men, while literacy did not appear to play a role for laryngeal cancer. Bidi smoking was the predominant risk factor for these three cancers, with odds ratios of 4.7 (95% CI: 3.6-6.3) for oropharyngeal cancer, 2.8 (95% CI: 2.1-3.7) for hypopharyngeal cancer and 2.1 (95% CI: 1.6-2.8) for laryngeal cancer.

Risk factors for lung cancer were studied in a case-control study in Chandigarh with 265 patients (235 men, 30 women) and 525 hospital controls (435 men; 90 women) matched on age and sex. Effects of smoking, indoor and outdoor air pollution and occupational exposures were assessed. Smoking cigarettes (OR=5.6; 95% CI: 3.15-10.1) or bidis (OR=5.76; 95% CI: 3.42-9.70) was the main risk factor for causation of lung cancer in men. In women the association with smoking was not so strong, suggesting the operation of other risk factors. Education (versus no schooling) showed a protective effect for lung cancer. For post-graduates the odds ratio of developing lung cancer was 0.69 (95% CI: 0.27-1.76), compared to the no-schooling group and adjusted for tobacco consumption. This effect of education was not attributable to smoking itself as it persisted even after adjustment for smoking.

Occupationally related diseases: Blue collar (hence less educated) workers who smoke are more vulnerable to occupational diseases, e.g., pneumoconiosis, byssinosis, occupationally related asthma, chronic bronchitis and...
emphysema, cancers of the lung, urinary bladder, liver, skin, or stomach and myeloid leukaemia. Some of these risks are additive and others multiplicative. Occupational health services need to be combined with smoking cessation services to protect workers from occupationally and smoking related diseases\textsuperscript{54}.

**Involuntary smoking related diseases and health outcomes:** India has generated evidence on risks due to involuntary tobacco smoke being a cause of lung cancer\textsuperscript{55}, worsening of asthma in children\textsuperscript{56}, adolescents\textsuperscript{57} and women\textsuperscript{58}, respiratory infections in young children\textsuperscript{59}, and low birth weight\textsuperscript{60}.

**Adverse reproductive outcomes of smokeless tobacco use:** In a cohort study of 1217 pregnant women availing of municipal health services in Mumbai for antenatal care, 17 per cent of the women were using smokeless tobacco. Pregnant women who used smokeless tobacco less than five times a day had a 50 per cent higher risk after adjustment for confounding variables [risk ratio = 1.5 (95\% CI: 0.9-2.4)] of having a low birth weight baby while in those using it five or more times daily, the risk was over 100 per cent higher than in non-users [risk ratio = 2.1 (95\% CI:1.1-4.0)]\textsuperscript{5}. In a further analysis of data from the same study, smokeless tobacco users had an adjusted risk ratio for stillbirth of 2.6 (95\% CI: 1.4-4.8)\textsuperscript{61}.

**Discussion**

Tobacco use by the least educated is in large measure practiced in ignorance of the health consequences, with belief in medicinal properties of tobacco (e.g., for cleaning teeth, for relieving toothache, for preventing constipation and relieving gastric complaints like gas and stomach acidity) and a desire for a low cost source of pleasure and satisfaction. If the film hero smokes, a youth may want to emulate him. The illiterate cannot read statutory health warnings. Among the more educated and urban population, tobacco use seems to be more in response to peer pressures and advertising, while some knowledge of possible health consequences is laid aside as irrelevant for the present\textsuperscript{62,63}.

Reasons for tobacco use are fairly clear, but reasons for non-use, also important, have not been studied. It is not useful to assume that all non-users are more aware of or motivated not to use tobacco by knowledge of the health hazards, since tobacco use initiation can take place at any age. Why there is a markedly lower prevalence of tobacco use in persons with college education compared to others is also not known. Researchers have suggested that this phenomenon needs to be studied\textsuperscript{24}. Indeed, such information would be useful for counselling non-tobacco using patients and for designing effective preventive interventions.

It has been argued that increasing the educational level of the population will contribute to their better health and it is seen that with increasing educational levels, tobacco use decreases. Hence better health would follow\textsuperscript{64}.

It has been hypothesized and found that a low level of life satisfaction is a risk factor for smoking. For example, among 2201 Chinese rural migrants aged 18-30 yr who reported more dissatisfaction with their lives or their jobs in the city, smoking was more prevalent among men with less education, but more prevalent among women with more education\textsuperscript{65}. Low levels of life satisfaction correlating with smoking could also conceivably be associated with less education, but life dissatisfaction and higher smoking prevalence has also been found in a subgroup of college students\textsuperscript{66}.

Regardless of the possible reasons for higher prevalence of tobacco use among the less educated, community intervention studies in India have proven that educational interventions on the adverse effects of tobacco combined with personalized support for quitting this addiction receive a positive response and are successful in getting educationally deprived users to quit\textsuperscript{67-69}.

The fact that a large part of the work force of bidi rollers are illiterate or educated only up to the primary level contributes to perpetuating the production of the most popular tobacco product in India\textsuperscript{70}.

Tobacco use and its consequences are clearly an impediment to the development of a healthy and prosperous society. If education were more widespread and the health care system addressed the problem of tobacco use - including prevention and cessation - the population would enjoy both more economic opportunities and better health.

**Conclusions**

Tobacco, education, and health in a human population are inter-related in ways that makes sufferings and deaths caused by tobacco use even more tragic than normally realized as they occur most often among least educated and under-privileged sections of the society.
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Reprint requests: Dr Prakash C, Gupta, Director, Healis - Sekhsaria Institute for Public Health, 601/B Great Eastern Chambers Plot no. 28, Sector 11, CBD Belapur, Navi Mumbai 400614, India e-mail: pcgupta@healis.org