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Tobacco use & social status in Kerala

Thankappan, K R

Health indicators of Kerala State such as infant mortality rate (14/ 1000 live births) and life expectancy at birth (71 yr for men and 76 yr for women) are far ahead of the Indian averages (IMR 58, life expectancy men 62 and women 63) and closer to the developed countries. However, tobacco use prevalence is similar to the national average.

Smoking is the commonest form of tobacco usage among men in the State whereas chewing tobacco is more common among women and children. Tobacco chewing among men is increasing in Kerala probably due to the smoking ban and industry strategy to focus on smokeless tobacco. Tobacco use is significantly more among the low socio-economic (SE) groups compared to the high SE group. Mortality and morbidity attributed to tobacco is higher among the poorest people in the State. Age adjusted cancer rate of oral cavity and lung cancer has been increasing in the State in recent years. Heart diseases among the young people are increasing in the State. Cancer and heart diseases are chronic illnesses which may pull the individual and the entire family below the poverty line.

Tobacco control therefore should be a top priority not only as a health issue but as a poverty reduction issue. Poverty alleviation is one of the major goals of developing economies. No poverty alleviation programme can ignore the potential impoverishment associated with tobacco use. Kerala with a very strong decentralized government has a very good opportunity to address tobacco control as a priority at the grass root level and reduce the impoverishment due to tobacco use.

Key words Chewing - health effects - Kerala - smoking - social status - tobacco

Introduction

Tobacco use is responsible for five million deaths in the world every year and 50 per cent of these deaths occur in the middle age (35-69 yr) population. Mortality attributable to tobacco has been estimated to be one million every year in India1, projected to 1.5 million by 20202. Deaths due to tobacco use in Kerala have not been estimated. However, considering the similarity of tobacco use prevalence in Kerala and other parts of India, the proportional mortality due to tobacco use in the State will be close to that of India. Based on available data, the annual deaths due to tobacco use in Kerala can be estimated to be close to 24,000.

Kerala is an advanced State in terms of epidemiological transition leading to increasing chronic diseases such as cardiovascular diseases, various forms of cancer, diabetes and chronic obstructive pulmonary disease. Tobacco use is considered to be the major modifiable risk factor for such chronic diseases3. Therefore, tobacco control and cessation are an important public health priority in the State. The Framework Convention on Tobacco Control (FCTC) provides a unique window of opportunity for all countries to minimize and avert this alarming public health disaster and protect their citizens from the devastating health, social, environmental, economic consequences of tobacco use and exposure to tobacco smoke4. For a State like Kerala, which has been a model for health and development with low cost5 and with a very strong decentralized government, it should be relatively easy to implement the FCTC to reduce the adverse health impacts of tobacco.

Since tobacco use has been reported to be higher among the poor and less educated people6, both disease burden as well as economic burden due to tobacco use will disproportionately affect them. The major objective of this paper is to address various aspects of tobacco use, awareness of harmful effects of tobacco and its implications for the poor in Kerala.

Health indicators of Kerala and India

Compared to rest of India, the health status of Kerala is characterized by high levels of education, particularly female education, lower levels of fertility, infant and child mortality and higher levels of life expectancy at birth. Total literacy rate was 90.9 per cent in Kerala compared to 75.6 per cent for India. The difference in literacy levels between Kerala and India was more among women; 87.9 and 54.0 per cent respectively than among men; 94.2 and 75.6 per cent respectively7. In 2005, Kerala's infant mortality rate (IMR) of 14 per 1000 live births was less than one fourth of the Indian average of 588. Life expectancy at birth in Kerala was 71 yr for men and 76 yr for women; the corresponding Indian figures were 62 and 63 yr, a difference of nine years for men and 13 yr for women9. These indicators of Kerala are closer to the developed nations than its counterparts in India.

However, there are problems for Kerala in some indicators. For example, among the major States of India, Kerala reported the highest rate of suicides in 2005; 27.7/100,000 population compared to the national average of 10.310. Similarly, reported morbidity was also highest in Kerala. In rural area 25.5 per cent of individuals reported some ailment in the previous two weeks of the survey compared to 8.8 per cent for India as a whole. In urban areas the figures were 24 and 9.9 per cent respectively11.

History of tobacco use in Kerala

Tobacco use in various forms including smoking and chewing has been an integral part of the community life in Kerala for centuries. Historically, in India, tobacco was introduced in Karnataka, the neighbouring State of Kerala, by the Portuguese during AD 160012. A couple of centuries later, the British introduced commercially produced cigarettes and established tobacco production in the country13. Traditionally, chewing betel quid with tobacco was more common among the Kerala population irrespective of social class and caste. Among upper caste Hindus of Kerala, Thamboola charvanam (betel leaf chewing) was a custom, especially associated with marriage party. Initially betel leaves and pieces of areca nut were the major ingredients of this quid and tobacco was added subsequently. This practice was believed to remove bad breath. Areca nut, though considered not harmful earlier, was later reported to be the fourth psychoactive substance in the world after caffeine, alcohol and nicotine14.

Beedi (0.2-0.3g of tobacco wrapped in a temburni leaf and tied with a small string) smoking was reported as early as 1711 in India12. During 1920s and 30s, beedi was exported from Kerala to Ceylon (Sri Lanka) and Burma (Myanmar) and to other parts of India such as Mysore and Kudaku in Karnataka State. Local consumption of beedi also increased during this period15. One of the reasons for increased beedi consumption was the call for boycott of imported cigarettes as part of Swadeshi movement (movement to boycott foreign goods) that enhanced a shift from cigarettes to beedies16.

Changing use patterns

In Kerala, smoking and use of snuff is predominantly a male habit while chewing is more or less similar among men and women. In recent years there is an indication that chewing among men is increasing and that of women is decreasing, and smoking among men is showing a tendency to decrease while that in women to increase, although the proportion of women smokers is still very small17. The use of beedi accounts for the largest proportion (nearly 40%) of tobacco consumption in India13 and Kerala is not different. Historically, smoking cigarettes was more among people of the high socioeconomic class, due to the higher cost of cigarettes compared to beedi.

There is a wide variation in ingredients of betel quid, and the most commonly used ingredients in Kerala were betel leaves, areca nut, tobacco and slaked lime. There has been a change in chewing patterns from the traditional betel quid with the introduction of newer products such as panmasala, khaini (sun dried tobacco and slaked lime) and gutka (a generic name for a product that contains tobacco, areca nut and several other substances sold in powdered or granulated form in small sachets). This may be linked with the popular perceptions on tobacco use that smokeless tobacco products are relatively less harmful.

Prevalence of tobacco use among various groups

Adults: Among men in the age group of 15 yr and above the prevalence of current smoking in Kerala was 28 per cent compared to 29 per cent in India as a whole. Among women, current smoking prevalence was 0.4 per cent in Kerala compared to 2.5 per cent in India. With regard to tobacco chewing, 9.5 per cent of Kerala men reported chewing compared to 28.3 per cent in the entire country. The figures for women were 10.5 per cent in Kerala and 12.4 per cent for India as a whole6,18.

Children and adolescents: In a study among school children aged 12-19 yr, current use of any form of tobacco was reported by 11 per cent of them. The proportion of school students experimented with some form of tobacco was 35 per cent (24% smoking and 11% using smokeless tobacco). The prevalence of current smoking among these children was 8.1 per cent and use of smokeless tobacco was 3.2 per cent. Tobacco use was four times higher among the students who received pocket money, three times higher among those with lower academic performance and three times higher among those whose friends used tobacco compared to their counterparts19. A similar finding was reported in a recent study from Delhi and Chennai schools where tobacco use among students in sixth grade was two to four times higher compared to eighth grade students20.

The prevalence of current tobacco use among male college students in Kerala was 13.6 per cent and overall prevalence of current smoking was 11.7 per cent21. More than 37 per cent of the students experimented with some form of tobacco.

Health professionals: The health professionals have a key role in tobacco control, though they have not yet been effectively brought into this area22. Recognizing the pertinent role of physicians in promoting reduction of tobacco consumption and enhancing tobacco control in the public health agenda at regional, national and global level, World Health Organization brought out a code of practice to encourage physicians to be role models by quitting and promoting a tobacco free culture23. However, 13 per cent of male health service physicians, 15 per cent of male medical college faculty and 14 per cent male medical students in Kerala were reported to be current smokers24. As expected, none of the female health service physicians and nursing students reported smoking in the above study. The smoking prevalence among the health professionals and medical students, indeed, was less than the current smoking prevalence of male population in Kerala but significantly higher when compared to the current smoking prevalence among the physicians in the developed world including UK (5%) and the US (3%)2425.

Trends in tobacco use in Kerala

There is growing evidence that, globally, over the past two decades the overall smoking prevalence has increased in low and middle income countries while it declined in the high-income countries. The linkages of increasing tobacco consumption and free trade are more explicit as the negotiations on liberalization policies between the US and several Asian countries during the 1980s resulted in an overall increase in demand for tobacco with highest increase in poor countries26. Along with the increase in smoking prevalence, over the last three decades of 1970s to 2000, tobacco production also increased by more than double in the developing world compared to the 36 per cent decrease in developed world27. Today, India is the third largest country in the world in both tobacco production and consumption. Of the 1.1 billion smokers worldwide, 182 million live in India. Based on the tobacco use prevalence in 200517 we have estimated that Kerala had at least four million smokers in that year.

Data on tobacco use prevalence based on a State representative sample at different points in time are limited and not focused entirely on tobacco use. The National Sample Survey Organization (NSS) 1987-1988, and 1993-1994, Kerala Sastra Sahitya Parishad (KSSP) 1987 (rural only) and National Family Health Survey (NFHS 2) (1998-99) provided some information on tobacco use. The NSS 1987-1988 survey reported a tobacco use prevalence of 44.6 per cent among men and 13.4 per cent among women in rural Kerala and 19931994 survey reported a tobacco use prevalence of 34.6 per cent among men and 6.7 per cent among women showing a decrease in overall tobacco use28. The KSSP study in 1987 reported a smoking prevalence of 43 per cent among men aged 15 yr and above29. Smoking among women was negligible in this sample although chewing was similar among men (12.47%) and women (12.56%). The NFHS- 2 figures on tobacco use have been already given.

Most of these large studies have limitations because one of the members in the household provided information on all. Therefore, it was reported that in the NFHS-2 study the tobacco use prevalence was underestimated by at least five per cent for smoking among men and 0.5 per cent among women and for chewing by 11 per cent for men and 1.5 per cent for women30. Since smoking has some taboo attached to it, there is a possibility of under-reporting by younger men and women of all age groups, even when data were collected from the participants individually. Community based studies, where data collection was done from each of the participants at different points in time, will be a better source of information, to understand trends in tobacco use. Major limitations in comparing tobacco use over different time points include different definitions for current tobacco use, ever tobacco use, not asking about smokeless tobacco, information collected by a single respondent for all members of the household and inclusion of different age groups in the sample.

There are some good community based studies which provided reasonably good data on trends in tobacco use. One of the earlier community based studies from Kerala was reported from Ernakulam district which was part of a multi-centric study. Smoking prevalence in this study was reported to be 22 per cent among men aged 15 yr and above and 0.7 per cent among women. Chewing was reported to be 17 per cent for men and 20 per cent for women. Another 10.3 per cent among men and 0.3 per cent among women reported mixed habit of smoking and chewing31.During a 10-year follow up of this study a 5 per cent increase was found in tobacco use32. Another study in rural Thiruvananthapuram district in 1990, reported a smoking prevalence of 50 per cent among men33. In a large sample study in 1995 consisting of over 110,000 individuals in rural Thiruvananthapuram district reported a current smoking prevalence of 50.1 per cent among men in the age group of 35 yr and above34. Chewing was 23.8 per cent among males and 22.2 per cent among females in this study. There is consistency in the findings of these two studies although the later study included individuals above the age of 65 yr also.

The most recent community based study from Thiruvananthapuram district in 2005 reported a current smoking prevalence of 35 per cent among men in the age group of 15-64 yr17. In the age group of 35-64 yr the current smoking prevalence was 43.7 per cent. Prevalence of current chewing was 26.2 per cent among men and 6.7 per cent among women. In urban slum prevalence of current chewing was as high as 42 per cent among men and 12.2 per cent among women17.

In order to understand trends in tobacco use better, one of the methods is the WHO STEPs method of surveillance en risk factors collecting information from 15 to 64 yr with sufficient numbers of males and females in all the 10 yr age groups. In the integrated disease surveillance project of the Government of India, the Indian Council of Medical Research (ICMR) has been given the responsibility of addressing this issue. This is likely to provide useful information on all the major risk factors including tobacco use over a period of time in all the States of India.

Factors associated with tobacco use

In Kerala, tobacco consumption was part of the social relations where, traditionally, tobacco was offered during celebrations including marriage. Raw tobacco was offered as a present when children visit the elderly in many communities in Kerala. However, recently, the trend is changing. Like in many other parts of India, the factors associated with tobacco use are closely linked with age, sex, social class, education and professional status. Although limited, some of the available studies indicate a variety of socio-cultural influences attributable to tobacco use. School going boys, whose fathers were current tobacco users, were two times more likely to use tobacco compared to their counterparts. Boys having friends who were current tobacco users were 2.9 times more likely to use tobacco compared to those whose friends were not using tobacco21. Among the college students, those having a tobacco user in the household. This was consistent with the findings from the study among the south Indian college students in which 'for friendship' was the most common reason cited for smoking35.

The factors associated with continuation of smoking among the currently smoking male medical college faculty members and health service physicians and medical students of Kerala were largely attributed to enjoyment, 'no need to quit' as they smoked so little according to them which was perceived to be harmless, and to reduce stress. For 29 per cent of the medical college faculty and health service physicians it was psycho-social reason such as 'feeling uncomfortable' if they could not smoke. Only 5.4 per cent of the medical students reported the same 24.

Importantly, there is enough evidence on the linkages of tobacco use and socio-economic factors where both beedi smoking and chewing were reported to be higher among low social class compared to high social class. In Kerala this has been reported in a couple of studies. In the KSSP study of 1987 it was reported that among the poor 51 per cent smoked beedi compared to 19 per cent in the better off group. With regard to chewing, 21 per cent among the poor group chewed compared to 7 per cent in the better off group. In the NFHS-2 survey among males who had a low standard of linving (SLI) index 43.5 per cent smoked compared to 18 per cent who had a high (SLI) index. Similarly 20.4 per cent of women in low SLI group chewed compared to 5.3 per cent among the high SLI group.

A similar trend with higher rates of tobacco use among the disadvantaged sections has been consistently reported from the high, middle and low income countries27. As a consequence, tobacco related morbidity and mortality are expected to be much higher among lower social strata.

Awareness on harmful effects of tobacco

Although, people of Kerala are aware that tobacco use endangers health, awareness was mostly on the linkages between tobacco use and various cancers. In a study in Thiruvananthapuram district, 46 per cent knew that smoking causes lung cancer while 32 per cent reported that smoking causes or may exacerbate asthma21. Only 10 per cent was aware of the relationship between tobacco use and cardiovascular diseases21. In a recent study from the same district, the awareness on the associations between tobacco and cardiovascular diseases was 22.5 per cent, an increase of more than double in about eight years36. Awareness on tobacco and cancer was 66 per cent, an increase from 46 per cent36. Surprisingly, those who reported a linkage between tuberculosis and tobacco use in this study was only 7.3 per cent. In our own study (unpublished data), 64 per cent of diabetes patients reported that smoking will not affect the disease and only 10 per cent reported that smoking causes a lot of aggravation of diabetes. In short, the awareness regarding adverse health effects of tobacco use was largely limited to cancers and hence there is a need for information dissemination focusing on tobacco related diseases of death from smoking apart from lung cancer37. In addition, the message that tobacco affects almost all organs in the body should be effectively communicated to the entire population.

Health effects of tobacco

The epidemiological studies in recent years have confirmed the harmful effects of tobacco. Tobacco use and exposure are associated with a wide range of debilitating diseases including various types of cancers, coronary heart disease, obstructive pulmonary diseases, peripheral vascular disease, stroke and acid peptic disease38. In 2000, globally, the leading causes of death from smoking included cardiovascular diseases (1.69 million deaths), chronic obstructive pulmonary disease (0.97 million deaths) and lung cancer (0.85 million deaths)37. The latest US Surgeon General's Report (2004) indicates that smoking harms almost every organ of the body39. By 2030, tobacco is projected to be the single biggest cause of death worldwide40.

Worldwide, tobacco causes nearly five million deaths annually (one in ten adults) with 2.41 million deaths in developing and 2.43 million in developed countries37. The death toll is projected to rise to 10 million by 2030 with seven out of ten deaths in the developing world41.

Tobacco related morbidity and mortality

It has been reported that cigarettes are the cause of death of half of its persistent users and 8 per cent of the world's population will eventually be killed by tobacco42. However, beedi smoking, which is very common in Kerala, is no less hazardous than cigarettes and smokeless products are also associated with higher morbidity and mortality43.

According to ICMR, in India in each year tobacco use results in about 160,000 cases of cancer, 4.5 million heart disease 3.9 million chronic obstructive lung diseases44. The proportion of cardiovascular disease is rising in the country with a prevalence of 3-4 per cent in the rural areas and 8-10 per cent in urban areas45. The cardiovascular diseases in people aged 35-64 yr results in the highest loss in potentially productive years of life in India45. India has the highest number of people with diabetes in the world. It was predicted to increase from 31.7 million in 2000 to 79.4 million in 2030(46).

In Kerala, number of patients with cardiovascular diseases is increasing47. The diabetes prevalence in the State was as high as 12 per cent48. Major tobacco related chronic diseases such as cancers, coronary heart disease, diabetes and COPD in the State are on the rise. The linkages between smoking and TB have been overlooked for a long time49. The current burden of chronic non-communicable diseases reflects past exposure to risk factors and the future burden will be determined by the current exposures3.

Smoking causes half of all male deaths from tuberculosis in India and a quarter of all male deaths from any disease in middle age. A quarter of the cigarette or beedi smokers in India would be killed by tobacco at the ages of 25-69 yr losing 20 yr of life expectancy50. Similarly, between 1990 and 2000, deaths from coronary heart disease in the country increased from 1.17 to 1.59 million and it was predicted to rise to 2.03 by 201051. Globally, the disability-adjusted life years (DALYs) attributed to tobacco are predicted to rise from under 40 million in 1990 to 120 million by 2020 and the massive increase in overall tobacco consumption in developing countries may cause an increase in the DALYs in these nations52. The tobacco related DALYs in India during 1990 was 1.7 million13. In terms of overall global burden of disease, India had the second largest proportion of 20.9 per cent after sub-Saharan Africa, but a very small proportion (1.0%) of public health expenditure52.

In Kerala, data related to morbidity attributable to tobacco are available mostly on cancers. One of the earlier studies on tobacco related morbidity found that Ernakulam district in Kerala, where chewing habit was very high, accounted for nearly half (12) of the total (26) oral cancer cases. The prevalence of leukoplakia and pre-leukoplakia was 1.7 and 2.4 per cent respectively. In the anatomical location of leukoplakia, 64.8 per cent accounted for buccal mucosa31. It is important to note that in Kerala chewing practices are more related to placing the tobacco quid in the lower buccal groove. A prospective study by the same team in the 1980s in the same district reported that the annual incidence rate of leukoplakia among 1000 adults was 2.1 for males and 1.5 for females and the rate was highest in the mixed tobacco habits group while lowest in the no tobacco habit group53.

In a case control study in Kerala it was reported that individuals chewing tobacco ten or more times a day were 15 times more likely to get cancer gingiva compared to non-chewers. Men smoking more than 20 beedies per day were 3.2 times more likely and those used snuff were 3.9 times more likely to get gingival cancer54. Another study indicated higher risk for cancer of the esophagus for those smoking beedi and cigarette55. Those who smoked beedi for 20 yr had seven times more risk of getting cancer larynx and those who smoked cigarettes for the same duration had five times higher risk compared to non smokers56.

The findings of a study in three areas of south India including Kerala, reported that chewing and poor oral hygiene explained 95 per cent of oral cancer of the women. Among men, 35 per cent of oral cancer was attributed to a combination of smoking and alcohol and 49 per cent to tobacco chewing57.

According to the population-based cancer registry in Thiruvananthapuram district, the age adjusted incidence rate of cancers of oral cavity increased from 11.8 per 100,000 males in the year 2000 to 14.1 in 2002 in urban areas. Figures for lung cancer were 7.6 and 8.1 respectively58.

Studies on tobacco related mortality in rural areas of Kerala and Andhra Pradesh revealed that the age adjusted relative risk for overall mortality for tobacco use by men and women ranged between 1.3 and 1.9 with smokers having higher risks59.

Implications for the poor

The widespread use of all forms of tobacco during the past couple of centuries indicated that after the advent of tobacco in the early 17th century, the aggressive marketing strategies by the tobacco industry have succeeded in creating a mass market through engineered addiction all over India12 including Kerala.

The high prevalence of tobacco use among children and adolescents of Kerala and India assumes greater importance to public health, since teens are at a greater risk of nicotine addiction even with low levels of tobacco consumption60. This would result in long time use and consequent long-term sufferings from tobacco related diseases and disability.

Once a member of the family is affected by a chronic disease such as cancer, the entire family is likely to be pulled below the poverty line since the cost of health care in Kerala is extremely high and increasing over the years47. It has already been reported that tobacco use contributes to impoverishment from hospitalization cost61. A large proportion of heart attacks among the young adults is due to tobacco use62. Such diseases are destroying the productive lives of poor people. In addition to the direct hospitalization cost due to tobacco related morbidity and mortality, many families loose their major earning member in early life pushing all of the family members into poverty. Since the awareness on the linkages between tobacco and heart diseases and other tobacco related diseases is low particularly among the poor, this needs to be addressed as a priority in the State.

In terms of employment opportunities, beedi industry has been one of the agro-based traditional labour intensive industries in Kerala which provided employment for 1,15,546 workers during 199163. The employment opportunities in this industry are coming down drastically. For example, the Kerala Dinesh Beedi Co-operative Society (KDBCS) of Kannur district was one of the important successful victory models for cooperativisation in the employment sector within the State, the country as a whole and possibly for the world64. However, the last decade showed a decline in the trends in beedi industrial growth in the State. KDBCS, the major employment provider in beedi industry in Kerala, was able to provide employment to only 31431 persons in 1994(65) and it declined to 25020 persons in 1999(66).

Today, KDBCS has diversified its production into other areas including food processing. The decline in Dinesh beedi sales was mainly due to health education messages, market competition with cigarettes and chewing products, and the ban of smoking in public places by the High Court in Kerala67. The goal of KDBCS was to transfer 25 per cent of the workforce within 10 years from tobacco to other products mainly food products60. Wages for the workers in the food production section (Kerala Dinesh Foods) equals with those of the beedi workers, though the food workers produce less surplus value to the company. The high quality of food products, solidarity from union households and support of the sympathizers in the community give Kerala Dinesh Foods marketing advantages other companies cannot easily undermine64. This is a good example which could be emulated in other parts of India and elsewhere.

Costs of tobacco use

Tobacco use induced morbidity and mortality cause considerable economic loss both directly and indirectly. The direct cost is related to the health care and the indirect cost is related to loss of productivity. Although we do not have separate cost calculations for Kerala, it has been argued that, in India, the direct cost of tobacco use including smoking and nonsmoking products excluding the cost of accessories like lighters, matchsticks, etc., to the consumer was between 2 and 3 per cent of the total private final consumption expenditure (PFCE) and between 4 and 6 per cent of the amount spent on food12. The total average cost of three major tobacco related diseases in India during the period of 1999 was Rs 277.61 billion. While the total average cost including the loss of income due to absenteeism, institutional service charge and loss due to premature death of a tobacco related cancer case diagnosed in 1990-1991 was Rs. 134,449 and in 1999 it was Rs. 350,00012. However, the cost of treating tobacco related disease was more than double than the revenue the government gets from the tobacco industry68. Apart from economic cost, the sufferings, physical and emotional distress and the loss due to death of the smokers to their families and society are enormous.

Control initiatives

Kerala has a pioneering role in tobacco control initiatives at various levels including judiciary, academia and non

government organizations (NGOs). During 1999, the Kerala High Court brought out a landmark judgment which banned smoking in public places including highways and parks. This was later upheld by the Supreme Court of the country. There are a few tobacco cessation clinics attached to two major hospitals in Thiruvananthapuram.

Conclusion

Tobacco use in Kerala is almost at the same level as rest of India but significantly higher among the poor. Smoking is comparatively low among women compared to men. Tobacco chewing is increasing among men, children and adolescents possibly due to the smoking ban in public places and also tobacco industry strategies to shift their focus to smokeless tobacco products which is not affected by current tobacco control policies. Tobacco use leads to many chronic non-communicable diseases, treatment of which puts economic burden on the people pulling them below the poverty line. Tobacco control therefore should be a top priority not only as a health issue but as a poverty reduction issue. Any poverty alleviation programme cannot ignore the potential impoverishment associated with tobacco use. Kerala with a very strong decentralized government has a very good opportunity to address tobacco control as a priority at the grass root level.

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K. R. Thankappan & C. U. Thresia

Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram, India

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Reprint requests: Dr K.R. Thankappan, Professor & Head, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram 695011, India

e-mail: thank@sctimst.ac.in

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