

**Tobacco use and health: Case control study in rural Kerala****Anant T. Pawar<sup>1</sup>, Shankar Bhosale<sup>2</sup>, Durgesh Kumar<sup>3</sup>**

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**Abstract**

**Context:** Tobacco is the foremost cause of preventable death in the world. Tobacco use causes a wide range of major diseases which impact nearly every organ of the body. Tobacco is not only causing cancers, heart diseases and lung diseases but also responsible for overall ill-health increasing visits to health centres. Kerala even though has better health indicator values than rest of country. Tobacco use is highly prevalent in the state of Kerala. **Aim:** To study association between tobacco use and ill-health (visit to health services for treatment of any illness). **Material and Methods:** Case control study was conducted in rural area of Kerala. Fifty patients visiting Community health centre for medical care for any illness other than accidents and injuries formed cases and 150 apparently healthy age, sex, etc. matched individuals from general population in field practice area formed controls. Cases and controls were interviewed using predesigned questionnaire to know tobacco consumption practices among them. **Statistical analysis used:** Data was analysed using SPSS 16. Percentages, t test, chi-square test and odds ratio were used. **Results:** In the present study 80% cases were tobacco users; while 64% controls were tobacco users. In the present study use of tobacco was significant risk factor for overall ill-health (odds ratio 2.25 [1.04-4.85]). Ill health was significantly associated with number of cigarettes smoked and mean years of smoking. **Conclusions:** Tobacco use is responsible for overall ill-health increasing visits to health centre. It also causes economic loss.

**Key-words:** Tobacco, smoking, ill-health, health services, Kerala

**Introduction**

Tobacco use is one of the most alarming health problems in the world today. Tobacco is a marketed malady and its use is an engineered addiction which is the foremost cause of preventable death in the world. Tobacco use causes a wide range of major diseases which impact nearly every organ of the body. These include several types of cancers, heart diseases and lung diseases.<sup>[1]</sup> Tobacco use currently accounts for 4.83 million deaths annually, which is estimated to double to 10 million deaths every year by 2030, with about 7 million of the deaths taking place in developing countries. This will make tobacco largest cause of death in the world.<sup>[2]</sup>

India is the second-largest producer and consumer of tobacco in the world.<sup>[3]</sup> The tobacco kills almost 1 million Indians every year and by the year 2020, the number of tobacco-related deaths is projected to be 1.5 million annually.<sup>[4]</sup> According to the Indian Council of Medical Research (ICMR), in India each year nearly

160000 people develop cancer, 4.5 million develop heart disease and 3.9 million develop chronic obstructive lung disease as a result of tobacco consumption.<sup>[5]</sup>

Health problems related to tobacco use are a major drain on the resources of developing countries. ICMR in its study observed that the Government spent Rs 277.6 billion (US\$ 6.5 billion) in 1999 as cost of treatment of 3 major tobacco-related diseases (cancer, heart disease and chronic obstructive pulmonary disease). The nationwide sale value of all tobacco products during same period was only Rs 244 billion with government getting fraction of it in the form of taxes.<sup>[5]</sup> Thus, it may be said that tobacco is of no economic benefit to the nation while being a major health hazard.

Tobacco use is always studied in relation to morbidity and mortality due to major chronic diseases caused by it and huge economic loss due to these diseases. But tobacco consumption also leads to many immediate and serious respiratory and non-respiratory illnesses. Tobacco

consumption increase frequency of utilisation of health services by individuals.<sup>[1]</sup> Almost all studies in the past tried to explore association of tobacco with chronic non-communicable diseases. None of the study tried to explore relation of tobacco with impaired health status making individual susceptible to illness.

The existing literature on tobacco use in India suggests that there are major differences in regional trends of tobacco use, both with respect to types of tobacco products used and prevalence rates among specific populations groups. The state of Kerala representing 3% of total population of India is known for better health indicator values than other states of India. However 'Tobacco control' is one area where the state is on par with other states in India.<sup>[6,7]</sup> A 1987 study covering the entire rural area of the state found that 53% of men >15 years of age were current smokers, 13% were chewers of some form of tobacco (or tobacco and betel quid), and 2% used snuff.<sup>[8]</sup>

With this background study was done to study relationship between tobacco use and overall ill health leading to use of health services.

### Material and Methods

The case control study (hospital and community based) was conducted in the Mukkam Panchayat of Kozhikode district, Kerala, India. All Male patients above age of 20 years attending evening OPD of Community Health Centre, Mukkam for treatment of any condition excluding accident and injury formed cases while healthy males above 20 years of age from field practice area of Medical College formed controls. A structured questionnaire was prepared to understand the tobacco habit among cases and controls including socio demographic profile of subjects. A total of 50 patients attending OPD on selected date fulfilling inclusion criteria and giving consent to participate in study were interviewed by trained house-surgeon posted for Community Medicine posting in CHC. A total of 150 healthy matched controls from field practice area of Medical College who gave consent to participate in study were interviewed by trained students. The data was entered in M.S. Excel and analysed using SPSS 16 version. Mean, percentage, Chi- square, risk ratio and student t test were used for statistical analysis. P value less than 0.05% was considered as significant.

### Results

The present study included 50 cases (patients with any disease attending CHC for treatment) and 150 healthy controls from general population. Forty cases and 96 controls were using tobacco in the form of either smoking or chewing or both. Comparison of some socio-demographic characters among cases and controls is shown in Table 1. It is evident that cases and controls are comparable in characters such as age, income, marital status and family type.

**Table 1: Comparison of socio-demographic characters among cases and controls**

Variable	Cases	Controls	t value/ value	p value	
Age	44.98±1 4.54	45.95±14. 43	0.412	0.681	
Income	5559 ± 7032	5413 ± 8159	0.113	0.91	
Marital status	Married Unmarried	48 2	141 9	0.289	0.591
Family type	Nuclear Joint	39 11	114 36	0.83	0.773

**Table 2: Association of tobacco use and health**

Variable	Cases	Controls	Odds ratio	p value
Smoking	34	84	1.67 (0.84-3.28)	0.135
Chewing	9	16	1.83 (0.75-4.47)	0.175
Any form of tobacco	40	96	2.25 (1.04-4.85)	0.036
Years of smoking	25.5±14.25	18.17±12.27	- NA -	0.005
No. Of cigarettes smoked	14.3±7.98	9.8±8.43	- NA-	0.008

Table 2 shows relation of tobacco addiction with ill health. In the present study it was observed that overall use of tobacco was significant risk factor for ill health. Tobacco users have 125% more chances of getting ill than nonusers. Even though, independent association of smoking with ill health could-not be established in this study; mean years of smoking and number of cigarettes smoked were significantly high among cases (p value 0.005 and 0.008 respectively).

### Discussion

Tobacco use is very rampant in Kerala. Study done by Sankaranarayan<sup>[9]</sup> in Thiruvananthapuram district in 1995 reported smoking in 50.1% men above 35 years of age and tobacco chewing in 23.8% of men. A 1987 study covering the entire rural area of Kerala found that 53% of men >15 years of age were current smokers and 13% were chewers of some form of tobacco<sup>[8]</sup>. The National Sample Survey (NSS) done in Kerala reported 44.6% prevalence of any form of tobacco use among all men >15 years of age.<sup>[10]</sup>

Smoking is estimated to increase the risk for coronary heart disease by 2 to 4 times, for stroke by 2 to 4 times, for lung cancer by 25 times.<sup>[1]</sup> Smoking causes

diminished overall health, such as self-reported poor health, increased absenteeism from work, and increased health care utilization and cost.<sup>[1,3]</sup> Unfortunately there is very limited work done to study effect of tobacco consumption on overall health. In the present study we could establish relationship between tobacco consumption and diminished overall health making it necessary for person to utilise health services. In the present study ill health was significantly associated with number of cigarettes smoked and years of smoking. It is well documented that tobacco (smoking) harms nearly every organ of the body in general and respiratory and cardiovascular system in particular leading to many diseases and premature death.<sup>[1]</sup>

**Conclusions:** Tobacco use is responsible for overall ill-health among cases increasing their visits to health centre. It also causes economic loss.

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