

Original Research Article

Prevalence of Tobacco Use in an Urban Slum Population in Kochi, Kerala

Teena M Joy¹, Sreelakshmi M², Nimitha P³, K Leelamoni⁴

Date of Submission: 02.03.2017

Date of Acceptance: 29.04.2017

Abstract

Background: Tobacco consumption is the primary cause of preventable morbidity and mortality in developing countries. **Objectives:** To determine the prevalence of tobacco smoking and to assess the knowledge and attitude of tobacco usage among a selected urban slum population of Kochi, Kerala. **Materials and Methods:** A community based cross sectional study done was done in a selected urban adult population of Kochi city. 212 individuals were interviewed. Data were collected using a pretested semi-structured questionnaire adapted from Global Adult Tobacco Survey (GATS). Data was tabulated using Microsoft Excel and analyzed using SPSS version 20. **Results:** Of the 212 people interviewed, 61.3% were males; the prevalence of smoking in the general population was found to be 16.5%. Among the smokers, 77% of had the interest to quit smoking. Awareness regarding tobacco use and its ill effects was 78.8% in the study population. Among the factors associated with tobacco use, education below higher secondary was associated with smoking status [OR 2.56 (1.24-5.26), p 0.01]. **Conclusion:** Despite a reasonable awareness among the study participants, 16.5% of the people were smokers. Constant support through cessation clinics and programmes to 77% of the current smokers who were interested to quit smoking, might bring down the rates further. Efforts are needed at the same time, to prevent people from initiating smoking.

Keywords: Tobacco smoking, prevalence, urban slum, awareness

Authors:

¹Assistant Professor, ²MD Resident, ³Biostatistics Lecturer, ⁴HOD and Professor, Department of Community Medicine, Amrita Institute of Medical Sciences, Amrita University, Kochi

Corresponding Author:

Dr.Teena M Joy, Assistant Professor, Department of Community Medicine, Amrita Institute of Medical Sciences, Amrita University, Ponekara, Kochi, Kerala, India. Pin: 682041. Email: teenatixon@gmail.com

INTRODUCTION:

Tobacco consumption is the primary cause of preventable morbidity and mortality in developing countries. World Health Organization (WHO) reports that the point estimate for tobacco smoking among persons aged 15 years and above would be 9.3% by the year 2020 in India.¹ In India tobacco use continues to grow steadily at 2-3% per year and it is predicted that by 2020 tobacco use will be responsible for 13% of all deaths in the country.¹⁻³

Each year in India, tobacco use results in about 160,000 cases of cancer, 4.5million heart diseases and 3.5million chronic obstructive lung diseases.^{3,4} Smoking is responsible for a large number of premature deaths in India and majority of these occur in the prime working age group of 15–59 years.³⁻⁵

Estimated prevalence of tobacco use in Kerala, the southern Indian state in 2005 was 4 million while the 2009-'10 GATS report shows the prevalence as 21.4% (7 million).^{6,7} The cost for tobacco related cardiovascular diseases, cancer, tuberculosis and

respiratory diseases amounted to Rs 5.4 trillion in Kerala in 2011.⁶

The Government of India has become increasingly engaged with the country's tobacco problem over recent years.^{7,8} The more comprehensive Cigarette and Other Tobacco Products Act (addressing tobacco use in public places, tobacco advertising, and sale and packaging regulations) was introduced in 2003, and the Framework Convention on Tobacco Control brought into force in 2005.⁹ In 2008, Government of India adopted legislations for banning smoking in public places.¹⁰ The Government of Kerala has also incorporated tobacco control in its non communicable disease control program. State government kept on increasing the value added tax on cigarettes every year.¹¹ In all developing countries including India, people living in slum areas have poor standard of living, low levels of education and high levels of poverty. Poverty itself is a risk factor for poor health status. Studies published have shown the slum dwelling people to have higher rates of tobacco usage¹². Since the poor and uneducated have higher chances of tobacco usage, the current study was undertaken to assess the prevalence of tobacco smoking in an urban slum population of Kochi, Kerala and to study the knowledge and attitude of tobacco usage among them. Findings from this study may help policymakers and program managers to know the effects of recent tobacco control interventions and to plan further strategies.

MATERIALS AND METHODS:

The Corporation of Cochin is the largest municipal corporation in Kerala both in area and population. This is the second most important port city in the western coast of India and is the commercial capital of the State. There are 231 slums in Kochi city. The number of households in each slums ranged between 30 to 200. The total households in all the slums were estimated as 12,949 with a total population of 60678 which constitutes nearly 11% of population of the City. More than one third of the slum dwellers were below poverty line. Community medicine department of Amrita Institute of Medical Sciences is providing primary care to an urban population of around 25,000 including a slum through its urban health centre.

A community based cross sectional study was conducted in May 2015 among the residents of an urban slum, Manappattiparambu. All residents who have been staying in the area for more than 6 months, and aged above 18 years were included. Sample size was calculated based on the prevalence of tobacco use in Kerala according to the District Level Household Survey¹³ which was 37.6%. With 95% confidence and 20% allowable error the sample size was estimated to be 212. ¹²Manappaattiparambu area had 8 avenues; first house was randomly selected from each avenue, then by Systematic random sampling every 5th house was visited.

The structured interviewer administered questionnaire had questions adapted from Global Adult Tobacco Survey (GATS). Never smoker was defined as those who never smoked a cigarette in his / her entire life; Former/ ex- smoker was defined as those who had smoked cigarettes before, but had quit smoking & Current smoker was defined as those who were currently smoking. The definitions used were similar to those used in GATS.¹

Data were tabulated using Microsoft Excel and analyzed by Statistical Package for Social Sciences Version 20. Descriptive statistics including frequency and percentages were done. Association of the various factors with the tobacco usage behavior was checked using Chi – square test.

RESULTS

Of the 212 study participants, 61% were males and 39% were females; with mean age of 42.9± 16years. The socio demographic features of the study population have been described in Table 1.

The prevalence of tobacco use in the study population was found to be 16.5% (95% CI 11.8-22.1). All the persons identified as tobacco users in the study were tobacco smokers. No person using smokeless tobacco were found in the present study. The prevalence of current tobacco use among males was 27%. 96% of the ever users used cigarettes and 38% of them started using tobacco products before the age of 18years. Among the current tobacco users, 40% used 2-5cigarettes/day, 57% smoked at workplace, 71% had smoked daily in the last week. Among the current smokers, 37% of them spent more than Rs 1000 in the previous month to

purchase tobacco products and 77% of them had the interest to quit smoking, while 48% of ever users had been advised to quit smoking by health workers.(Table 2)

Table1. Socio demographic Characteristics of the study population (N=212)

Characteristics	Categories	Frequency (%)
Age Group	<20 years	10 (4.7)
	21-40 years	100 (47.2)
	41-60 years	72 (34)
	>60 years	30 (14.2)
Gender	Male	130 (61.3)
	Female	82 (38.7)
Educational Status	Illiterate	5 (2.4)
	Primary (1-4 standard)	10 (4.7)
	Upper Primary (5-7 standard)	24 (11.3)
	High school (8-10 standard)	58 (27.4)
	Higher secondary	46 (21.7)
	Degree/higher	69 (32.5)
Occupation	Unemployed	16 (7.5)
	Homemaker	60 (28.3)
	Unskilled	24 (11.3)
	Semi skilled	20 (9.4)
	Skilled	47 (22.2)
	Professional	27 (12.7)
	Retired	18 (8.5)

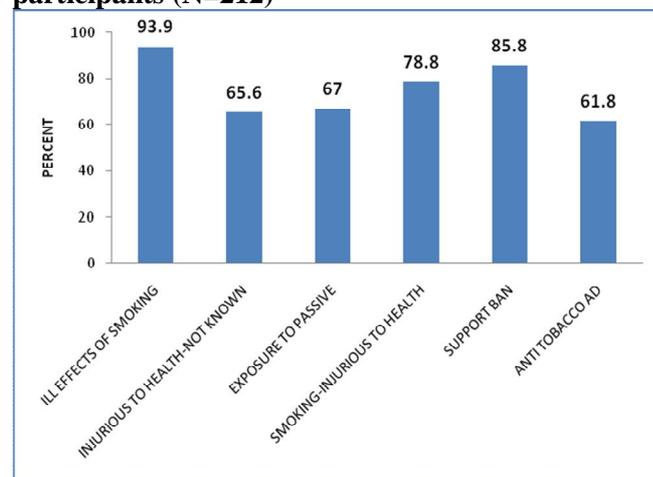
Table 2. Details of smoking habits among the study participants

Characteristics	Categories	Frequency (%)
Smoking status(N=212)	Never smoked	160 (75.5)
	Ex Smoker	17 (8)
	Current Smoker	35 (16.5)
Type of tobacco products used(N=52)	Bidi	2 (3.8)
	Cigarettes	50 (96.2)
Age of Onset of smoking(N=52)	< 12 years	2 (3.8)
	13-15 years	7 (13.5)
	16-18 years	11 (21.2)
	>18 years	32 (61.5)
Factors responsible for initiation(N=52)	For happiness	21 (40.4)
	Difficulties in Life	2 (3.8)
	Peer Pressure	11 (21.2)
	To imitate others	3 (5.7)
	Others	15 (28.8)
Number of cigarettes smoked in last 7 days (N=52)	0	2 (5.7)
	<7 per week	2 (5.7)
	1-5 cigarettes daily	21 (60)
	5-10 cigarettes daily	5 (11.4)
	>10 cigarettes daily	6 (17.1)
Money spent on cigarettes/bidis In last 30 days (N=52)	Nil	2 (5.7)
	< Rs 100	3 (8.6)
	Rs 101-1000	17 (48.5)
	Rs 1001-3000	5 (14.3)
	>Rs 3000	8 (22.8)

The findings related to knowledge and attitude of participants are presented in figure 2. Among the

study participants 95% were aware that sale of tobacco products near a school is illegal; 97% had knowledge that the sale of tobacco products to a child less than 18years was illegal and 80% of them have noticed the warning signs on the packet of tobacco products. Bivariate analysis was done between tobacco use and demographic factors such as age categories, religion,educational status and occupational status.Among the factors associated with tobacco use, education below higher secondary was associated with smoking status [OR 2.56 (1.24-5.26), p 0.01].

Fig 1. Knowledge and attitude of study participants (N=212)



DISCUSSION:

Despite rising advertisements and commercials to spread public awareness about adverse effects of Tobacco, 2015 saw over 1.1 billion people smoke tobacco and among the tobacco users, staggering 121 million live in India.¹

The current study was done among 212 residents of an urban slum in Kochi and the prevalence of tobacco use was 16.5%. The finding was lower than that reported in Kerala, as well as a study done by Chockalingam et al in Chennai.¹⁴ In the GATS survey, the prevalence of tobacco use in any form among adults was 34.6% and among them 14% were current tobacco smokers.⁴ There were no smokeless tobacco users in the present study. The prevalence of tobacco use among males in an urban slum of Hyderabad by Gupta et al was 48.3%, slightly higher than the findings from the current study.¹⁵ The prevalence of tobacco use among males in the current study was found to be 40% which is similar to the findings from the Centre for Cardio metabolic

Risk Reduction in South Asia (CARRS Delhi) study,¹⁶ while the GATS survey noted that 47.9% of the tobacco users were males. The study done by Jindal et al in Bangalore, Chandigarh, Delhi and Kanpur showed a lower prevalence of ever smokers than the current study where the prevalence of ever smokers among the study participants was 24.5%.¹⁷

Cigarette was the most common tobacco product used in the current study, 96%; which is higher than the studies done in urban, semi urban and rural areas of Chennai (77%) by Chockalingam et al and studies done in Karachi (21%).^{14,16} The exposure to passive smoking in this study was found to be 67%, which is lower than the findings of WHO in India while higher than the findings by Chockalingam et al in Chennai^{4,14} The GATS survey found the exposure to second hand smoke to be 52.3% at home and 29% at public places which is lower when compared to the present study⁴. In our study population, 61.2% had noticed an anti tobacco advertisement in the radio, television, newspaper or movies which is slightly less when compared to the 72% urban adults who noticed the same according to GATS⁴. The current study showed a significant association between lower education and male tobacco use which is similar to the findings from the CARRS study.¹⁶ A study done by Thankappan⁶ et al in Kerala also revealed higher tobacco use among less educated people.¹⁸

Studies done in Thiruvananthapuram district of Kerala reports a major improvement in the awareness regarding health effects of tobacco.^{19,20} Our findings on a reasonable awareness about harmful effects of tobacco are consistent with findings from other studies done in the state.^{19,20}

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 diseases.²¹ Therefore, tobacco control and cessation are an important public health priority in the State. Since tobacco use has been reported to be higher among the poor and less educated people, both disease burden as well as economic burden due to tobacco use will disproportionately affect them.

The current study points out that despite these efforts and in spite of its high literacy and better health-care systems, tobacco problem still exists in the community. The study was conducted in one slum of the district and therefore cannot be generalized. The study relied on self-reporting by the subjects, and hence, both underreporting and over reporting might be possible. Despite these limitations, the study findings underscore the urgent need for increased efforts to implement the strategies to reduce smoking and thereby to prevent its harmful health effects.

CONCLUSION:

Awareness regarding tobacco use and its ill effects was reasonable in the study population. However, the high awareness has not stopped 16.5% of the population from smoking. Constant support through cessation clinics and programmes to 77% of the current smokers who were interested to quit smoking, might bring down the rates further. Efforts are needed at the same time, to prevent people from initiating smoking.

ACKNOWLEDGEMENTS

The authors wish to thank the R₂ A batch of 2012 MBBS students and the field staff who helped in data collection.

DECLARATIONS

Funding: no funding received.

Conflict of interest: the authors have no conflict of interest to declare.

Ethical approval: the study was done in accordance with the guidelines by the declaration of Helsinki.

REFERENCES:

1. WHO, CDC, World Lung Foundation. The GATS Atlas. Geneva. World Health Organization, 2015. Available from: http://www.gatsatlas.org/#section_read
2. World Health Organisation. Global Health Observatory Data. Prevalence of Tobacco use.[Internet]. WHO. Available from:

- <http://www.who.int/gho/tobacco/use/en/>
[accessed on 14 Feb, 2017]
- World Health Organisation. Global report on trends in prevalence of tobacco smoking. WHO. Geneva. 2015. Available from:
http://apps.who.int/iris/bitstream/10665/156262/1/9789241564922_eng.pdf
 - Ministry of Health and Family Welfare. Global Adult Tobacco Survey Fact Sheet. India: 2009-2010. Available from:
http://www.who.int/tobacco/surveillance/en_tfi_india_gats_fact_sheet.pdf
 - Rani M. Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross sectional household survey. *Tobacco Control*. 2003;12(4):4e-4. Available from:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1747786/pdf/v012p000e4.pdf>
 - Thankappan K. R., Thresia C. U. Tobacco use and social status in Kerala. *Indian Journal of Medical Research*. 2007;126(4):300–308.
 - Ministry of Health and Family Welfare. Global Adult Tobacco Survey Fact Sheet. Kerala, India: 2009-2010.
 - Kaur J, Jain DC. Tobacco control policies in India: Implementation and challenges. *Indian J Public Health* 2011;55:220-7. 7.
 - McKay AJ, Patel RK, Majeed A. Strategies for tobacco control in India: A systematic review. *PLoS One* 2015;10:e0122610.
 - Ministry of Law and Justice. The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act; 2003. Available from:
<http://www.who.int/fctc/reporting/Annexthreeindia.pdf>.
 - Office of the Commissioner of Commercial Taxes, Circular No. 09/2015, Salient Features of Kerala Finance Bill; 2015. Available from:
 - <http://www.keralataxes.gov.in/circular/CIR.9.15.pdf>.
 - Pearce J, Hiscock R, Moon G, Barnett R. The neighbourhood effects of geographical access to tobacco retailers on individual smoking behaviour. *J Epidemiol Community Health* 2008;63:69-77.
 - International institute for population sciences. District Level Household survey. Fact Sheet 2013 [cited 5 October 2016]. Available from:
<http://rchiips.org/pdf/dlhs4/report/KE.pdf>
 - Chockalingam K, Vedhachalam C, Rangasamy S, Sekar G, Adinarayanan S, Swaminathan S, et al. Prevalence of tobacco use in urban, semi urban and rural areas in and around Chennai City, India. *PLoS One*(2013) 8(10):e76005.10.1371/journal.pone.0076005
 - Gupta V, Yadav K, Anand K. Patterns of tobacco use across rural, urban, and urban-slum populations in a north Indian community. *Indian J Community Med*. 2010;35:245–51
 - Berg C, Ajay V, Ali M. A cross-sectional study of the prevalence and correlates of tobacco Use in Chennai, Delhi, and Karachi: data from the CARRS study. *BMC Public Health*. 2015;15(1).
 - Jindal Sk, Aggarwal AN, Chaudhry K, Chhabra SK, D'Souza GA, Gupta D, et al. Asthma Epidemiology Study Group. Tobacco Smoking in India: Prevalence, Quit-rates and Respiratory Morbidity. *Indian J Chest Dis Allied Sci*. 2006;48:37–42.
 - Thankappan KR, Soman B, Srinivas G, Daivadanam M, Mini GK. Report of the step-wise approach of NCD risk factor surveillance in the sentinel health monitoring centre Trivandrum (unpublished). Thiruvananthapuram: Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology; 2006 p. 23-30.

19. Pradeepkumar AS, Mohan S, Gopalakrishnan P, Sarma PS, Thankappan KR, Nichter M. Tobacco use in Kerala: findings from three recent studies. Natl Med J India 2005; 18 : 148-53.
20. Tiwari R, Deb P, Debbarma A, Chaudhuri R, Chakraborty A, Lepcha M, et al. Tobacco use and cardiovascular disease: A knowledge, attitude, and practice study in rural Kerala. Indian J Med Sci 2006; 60 : 271-6
21. Yach D, Hawkes C, Gould CL, Hofman KJ. The global burden of chronic diseases: overcoming impediments to prevention and control. JAMA 2004; 291 : 2616-2

