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Short Communication

Tobacco Usage among Males in Rural Tamil Nadu, India: A Cross-sectional Study

Kalaivani Annadurai,[1] Geetha Mani,[1] Raja Dhanasekaran.[1]

Abstract

Background: Knowing the prevalence of tobacco use and the socio-demographic profile of users might prove useful in further strengthening the information, education, communication and regulatory activities, thereby decreasing tobacco use. The objective was to study the prevalence and pattern of tobacco use among men aged 18 years and above in rural area of Tamil Nadu. **Methods:** A cross sectional study was performed among 714 males aged 18 years and above in Vadagarai village of Tamil Nadu during 2010 and interviewed with a pretested questionnaire. Systematic random sampling was used to select the participants. **Results:** Prevalence of smoking was found to be 36.7%. Cigarette smoking was more common than beedi and smokeless tobacco. **Conclusion:** Strict enforcement of anti-tobacco legislation and awareness measures targeting ill-effects of tobacco can be intensified to reduce tobacco related morbidity and mortality.

Keywords: Tobacco, Prevalence, Smoking (Source: MeSH-NLM).

About the Author: *Kalaivani Annadurai is a recently graduated public health physician and currently working as an assistant professor in the department of Community Medicine at Shri Sathya Sai Medical College and Research Institute.*

Introduction

Tobacco is the most important preventable cause of death and disease among adults. According to World Health Organization (WHO), globally about six million people die prematurely every year due to tobacco use, mostly cigarette smoking. More important is the fact that this epidemic of disease and death caused by tobacco is increasing very rapidly. By 2030 it is expected to kill more than eight million people per year, if there is no proper action (WHO. Tobacco-facts sheet. Available from: http://www.who.int/mediacentre/factsheets/fs339/en/, updated 2013 Jul, cited 2014 Jan 28).

The tobacco epidemic is affecting mainly developing countries since 84% of world's smokers live in these countries. In low-income countries, nearly half of all men smoke daily and this trend seem to be increasing (World Bank. Economics of tobacco control. Available from: http://www.worldbank.org/tobacco/, updated 2013 Dec 18, cited 2013 Dec 20). Research has proved that secondhand smoke produces the same effect as first hand smoke including cardiovascular disease, lung cancer, and lung ailments such bronchitis and asthma attacks.[1] Smoking related mortality and morbidity can be prevented by reducing smoking prevalence.

In India, Tobacco consumption continues to grow at 2-3% per annum.[2] People in India consume smoking and smokeless tobacco in the form of cigarettes, non-cigarette items such as hand-rolled beedis, chewing paan etc.[3] The prevalence of tobacco use among males has been high in all parts of India. The tobacco consumption is more in rural than in urban areas. In 2003, The Central Government passed 'The Cigarettes and Other Tobacco Products Act' (COTPA) applicable to all tobacco products.[4] But still, the prevalence of tobacco is a huge public health problem.

Methods

A cross-sectional study was performed among adult males aged 18 years and above in Vadagarai village in Thiruvallur district of Tamil Nadu.

The sample size was calculated on the basis of 35% prevalence rate of smoking in rural area according to NFHS-3 survey with an allowable error of 10%, the sample size came to 714.[5] Vadagarai health sub center was chosen randomly from Naravarikuppam Block Primary Health Centre. In order to get 714 men aged 18 years and above, it was decided to survey 445 households in Vadagarai sub-center, with a total of 1581 households with population of 2539 men above 18 years. The households were sampled by systematic random sampling.

Respondents were interviewed using semi-structured questionnaire. The questionnaire for this study was developed based on Global Adult Tobacco Survey (Global Adult Tobacco Survey (GATS), Core Questionnaire with Optional Questions. Available from: http://www.who.int/tobacco/surveillance/guide/en/, updated 2013, cited 2013 Dec 13). It was translated into local language, pretested and standardized. It consisted of two parts of which Part I consists of questions related to socio-demographic profile and part II consist of questions regarding usage of smoking as well as smokeless tobacco.

Data entry was made in MS Office Excel software in codes and analysis was done by SPSS software®. Descriptive statistical

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[1] Shri Sathya Sai Medical College & Research Institute,Thiruporur,Tamilnadu, India

Correspondence:
Kalaivani A
Address: Shri Sathya Sai Medical College & Research Institute, Ammapettai village-603108, Thiruporur, Kancheepuram district, Tamil Nadu, India.
Email: kalaimedicos11@gmail.com

Table 1: Socio-demographic determinants of tobacco use (n=714)

Socio-demographic variables	Total N=714 (% [95% CI])	Smoker N=262 (%)	Non-Smoker N=452 (%)	p value
Age				
18-30	357 (50.0% [46.33-53.67])	123 (34.45%)	234 (65.55%)	
31-40	112 (15.68% [13.01-18.35])	34 (30.36%)	78 (69.64%)	
41-50	123 (17.2% [14.43-19.97])	46 (37.4%)	77 (62.6%)	0.03
51-60	93 (13.02% [10.55-15.49])	43 (46.24%)	50 (53.76%)	
More than 60	29 (4.1% [2.65-5.55])	16 (55.2%)	13 (44.8%)	
Marital status				
Single	251 (35.2% [31.7-38.7])	95 (37.85%)	156 (62.15%)	
Married	415 (58.10% [54.48-61.72])	141 (33.98%)	274 (66.02%)	0.02
Widower/Divorced/separated	48 (6.72% [4.88-8.56])	26 (54.17%)	22 (45.83%)	
Education				
Illiterate	85 (11.91% [9.53-14.29])	42 (49.40%)	43 (50.60%)	0.01
Literate	629 (88.09% [85.71-90.47])	220 (35.00%)	409 (65.00%)	
Occupation				
Unemployed/student	39 (5.46% [3.79-7.1])	8 (20.5%)	31 (79.5%)	
Daily wagers	288 (40.33% [36.73-43.93])	127 (44.1%)	161 (55.9%)	
Monthly wagers	352 (49.3% [45.63-52.97])	118 (33.52%)	234 (66.48%)	0.002
Semiprofessional/Professional	13 (1.82% [0.84-2.8])	1 (7.7%)	12 (92.3%)	
Retired/old age dependent	22 (3.08% [1.81-4.35])	8 (36.4%)	14 (63.6%)	
Socio-economic status[18]				
3653 and above(Class-I)	13 (1.82% [0.84-2.8])	6 (46.2%)	7 (53.8%)	
1827 -3652(Class-II)	87 (12.18% [9.78-14.58])	26 (29.9%)	61 (70.1%)	
1096-1826(Class-III)	160 (22.4% [19.34-25.46])	53 (33.1%)	107 (66.9%)	0.38
548-1095(Class-IV)	350 (49.01% [43.34-52.68])	137 (39.1%)	213 (60.9%)	
<547(Class-V)	104 (14.56% [11.97-17.15])	40 (38.5%)	64 (61.5%)	

analysis, which included frequency, mean and percentages, was used to characterize the data. 95% Confidence Intervals (95% CI) were calculated. Association with the factors was tested for significance using chi-square test and p <0.05 was considered statistically significant.

Results

The mean age of the sample population was 35.34 years ± 13.98 with range of 18 – 85 years. Half of them were between 18-30 years. Most of them were Hindus (82.5%). Literacy rate of the sample population seems to be high (88.09%). 49.01% of the participants were from upper-middle class socio-economic group and 76.05% were unskilled, semi-skilled and skilled laborers. ***(Table 1)***

Smoking status was found to be statistically significant with age, marital status, education and occupation. But it was not found to be significantly associated with socio-economic status ***(Table 1)***.

Table 2 depicts the prevalence of smoking in men in the study population (95% CI = 33.2 to 40.4), 36.7% of the study group were current smokers. Among smokers the majority of them were using cigarettes (64.5%) (95%CI=58.71 to 70.29) and 24% (95%CI= 18.83 to 29.17) were using beedi. 2.7% were ex-smokers and 60.6% were non smokers. Analysis of the use of smokeless tobacco shows 28.4% (95%CI=25.09 to 31.71) of the study population(n = 714) use smokeless tobacco products. Combined users of both smoking and smokeless tobacco totaled 33(12.6%) (95%CI= 10.17 to 15.03) among the study population.

Analysis of the number of smoking days in the past 30 days shows that the majority of the smoking population (80.2%) (95%CI= 76.16 to 85.68) were smoking for more than two thirds of the months. The mean duration of smoking was 15.93 years and the mean number of cigarettes or beedis smoked per day was 8.5 among smokers ***(Table 2)***.

Discussion

Of the study population of 714 men aged 18 years and above in Vadagarai village of Thiruvallur district, Tamil Nadu, the prevalence of smoking was 36.7%. Similar findings were obtained from NFHS – 3 and Kaur P., et al.[5,6] But it was found to be lower than the findings from Vivek Gupta et al where it was 47.9% and higher than Rani M et al, and Daniel AB et al where it was found to be 29.3% and 17.5% respectively.[7,8,9] The prevalence in our study (36.7%) was found to be higher than in the United States (21.6%-Centers for Disease Control)[10] and lower than in China (52.9%- Harris et al).[11]

Smokeless tobacco users were 28.4% and this was similar to Rani M., et al (28.1%) and higher than that of 6.8% which was reported in Vivek Gupta et al but lower than 36% which was observed from NFHS-3 findings.[5,7,8] Combined users of both smokeless and smoking tobacco were found to be 12.6% in the current study. This was higher than that of 2.1% reported from Vivek Gupta et al and lower than that of 30% which was

Table 2: Smoking tobacco usage pattern (n-262)

Category	Frequencies N=262 (% [95% CI])
Type of smoking	
Cigarette usage	169 (64.5% [58.71-70.29])
Beedi usage	63 (24.0% [18.83-29.17])
Both cigarette and beedi	30 (11.5% [7.64-15.36])
Number of Days of smoking in the past Month	
≤ 10 days	19 (7.25% [4.11-10.39])
11-20 days	31 (11.83% [7.92-15.74])
21-30 days	212 (80.92% [76.16-85.68])
Duration of smoking	
≤ 1 year	23 (8.8% [5.37-12.23])
2-10 years	98 (37.4% [31.54-43.26])
11-20 years	52 (19.8% [14.97-24.63])
21-30 years	47 (18.0% [13.35-22.65])
31-40 years	22 (8.4% [5.04-11.76])
41 years and above	20 (7.6% [4.39-10.81])
Number of cigarettes or beedis used per day	
≤ 1	81 (31.0% [25.4-36.6])
2-5	53 (20.2% [15.34-25.06])
6-10	53 (20.2% [15.34-25.06])
11-20	32 (12.2% [8.24-16.16])
≥ 21	43 (16.4% [11.92-20.88])

observed from Rani M., et al.[7,8]

In the current study, prevalence of smoking was 36.7% and among them 80.92% were smoking for more than two thirds of the month. This was similar to findings from Harris et al. This shows the depth of the problem. Around 64.5% were using cigarettes and 24.0% were using beedi. This was in contrast with Chaudhry K et al report that beedi usage is more common that cigarette smoking in rural areas.[12]

According to Rani M et al, tobacco usage increases with increasing age.[8] In our study population there was a biphasic trend in smoking pattern i.e., the prevalence of smoking was 34.45% between 18-30 years, decreased with 30.36% in between 31-40 years and increased to 55.2% for those with more than 60 years of age i.e., prevalence was more among younger and older age groups.

Prevalence of smoking was more common in illiterates than well-educated. This report was similar to the findings from NFHS-3, Rani M et al, Harris et al and Narayan et al.,[5,8,11,13] In our study population there was no significant association between smoking and socioeconomic status. Smoking status was found to be significantly associated with age group, education, marital status and occupation. But beedi usage was more common in lower socio economic people. Similar findings were seen in the study conducted by Ram B singh et al.[14]

Conclusion

The study concludes that the prevalence of smoking was higher than the Indian national average. Therefore, preventive steps like lifestyle modifications, communication, fiscal measures and further more strong enforcement of the COTPA act 2003 will be needed to decrease the prevalence further.

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