

## Original Research Article

# Knowledge, attitude and practice regarding various tobacco products and their effects on health and COTPA act among $\geq 15$ years age group persons in urban field practice area of a medical college in Telangana

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## ABSTRACT

**Background:** Tobacco use is a major public health problem. The prevalence of tobacco use among men has been reported to be high (generally exceeding 50%) from almost all parts of India. “The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) Act 2003”, which came into effect since 1st May 2004. Information on knowledge, attitudes, and practices of population regarding COTPA is necessary to effectively implement the legislation. Hence the present study was undertaken.

**Methods:** The present study was a cross-sectional community-based survey carried out in urban slums of Nalgonda town. Data was collected using a structured schedule by interviewing 300 participants, aged above 15 years.

**Results:** The current use of any tobacco was reported by 45.7% of the participants. Overall awareness of COTPA was 58.2%. Marital status, type of family, unemployment, Illiterates, lower SES, and age had a significant influence on tobacco use. Television (77.05%) was the major source of awareness regarding COTPA. The majority of smokers were aware of various sections of COTPA (>50%). About 34.8% of the participants had a favorable attitude towards COTPA. The positive attitude was more (53.7%) towards the display of health warnings on tobacco products among smokers. 11.2% had paid penalty for violation of the act and 32.4% have noticed a reduction in their habit to some extent.

**Conclusions:** A concerted effort has to be made to increase the awareness of the act amongst the vulnerable population.

**Keywords:** Awareness, COTPA, Nalgonda, Tobacco

## INTRODUCTION

Tobacco contributes to 5 million deaths per year globally. According to World Health Organization (WHO), tobacco kills more people annually than AIDS, alcohol, other addictions (drugs) and accidents put together and this figure is expected to rise to 10 million tobacco deaths annually by 2025. 500 million die prematurely due to

tobacco use; most of these are children and young adults of today.<sup>1</sup>

One-fifth of all worldwide deaths attributed to tobacco occur in India; more than 8,00,000 people die and 12 million people fall ill due to tobacco use each year.<sup>1</sup> By 2030 it is expected to kill more than 9 million people per year; of aged 35-69. The epidemic is increasingly affecting developing countries, where most of the world's

smokers (84% or 1 billion) live. Close to half of all men in low-income countries smoke daily and this has been increasing. Many deaths and much disease could be prevented by reducing smoking prevalence.

Tobacco addiction is the most widespread addiction in the world. There are nearly 1.3 billion smokers in the world, 80% of them are in the developing countries. India has more than 300 million smokers. Tobacco use is the leading cause of death in the world. On an average, every user of tobacco loses 15 years of life. Total tobacco-attributable deaths from ischemic heart disease, cerebrovascular disease (stroke), chronic obstructive pulmonary disease and other diseases are projected to rise from 5.4 million in 2004 to 8.3 million in 2030, almost 10% of all deaths worldwide.<sup>2</sup>

Tobacco is the only legally available consumer product which kills people when it is used entirely as intended.<sup>3</sup> If we look at the prevalence and mortality of tobacco use in a population over time, we saw the image of a social epidemic. It is highly contagious at various times to various groups and some population groups abandon it. Social norms do not totally explain the phenomenon of tobacco use, nor do nicotine addiction, personality traits, psychological needs, genetics, history and economic structure of the community or the latitude for marketing tactics by the tobacco industry.

Several negotiations later, the World Health Assembly in May 2003 finally adopted the Framework Convention on Tobacco Control (FCTC), which has provisions for members to have comprehensive legislation to curb the tobacco epidemic.<sup>4</sup> India was one of the first few countries that ratified the FCTC. The Government of India formulated “The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) Act (COTPA)” on May 18, 2003. In 2004, the rules regarding COTPA provisions were notified. As per the act, smoking is prohibited in all public places, ban is placed on advertisements of tobacco products, and prohibition of sale of tobacco products to minors and within 100 yards of educational institutions.<sup>5</sup>

The implementation of this law remained largely ineffective in the initial years. The Government of India reviewed the situation and revised the law, with effect from 2<sup>nd</sup> October 2008, making additional provisions to improve the implementation of smoke free law.<sup>6</sup> Not many studies have been done on awareness and attitudes of the general public regarding Cigarettes and Other Tobacco Products Act (COTPA).

For effective implementation of tobacco control knowledge regarding the awareness, attitudes and practices of the population towards tobacco control is necessary. Hence a humble attempt was made to do this study.

Aim and objectives of the study was to assess and study KAP regarding tobacco use and COTPA, 2003 in Urban slums of Nalgonda, to study the proportion of tobacco use among individuals aged more than 15 years age group in urban field practice area of KIMS, to study the association of socio demographic factors and tobacco use among the study group, to assess the awareness towards anti- tobacco measures imposed under cigarettes and other tobacco products act 2003 and to assess the attitude towards anti- tobacco measures imposed under cigarettes and other tobacco products act 2003.

## **METHODS**

The present study was community based cross sectional study conducted between July 2017 and August 2017. The study was conducted in urban field practice area of Kamineni Institute of Medical Sciences, Narketpally. According to pilot study done in the urban slum field practice area, awareness about among men in the age group >15 years was 47.5%. Using this prevalence, we calculated the sample size with the following formula,

$$n = (Z\alpha)^2 pq/L^2$$

where,

n = minimum sample size

p = prevalence in percentage

q = 100-p

L = allowable error in percentage of prevalence.

Z $\alpha$  = Z0.05 = 1.96 (Approximately = 2)

$$(Z\alpha)^2 = (Z0.05)^2 = 4$$

Using the above formula and data,

p = 47.5

q = (100 – 47.5) = 52.5

L = 10% of p = 10% of 47.5 = 4.75

$$\text{Sample size (n)} = 4 \times 47.5 \times 52.5 / 4.75 \times 4.75 = 242$$

Simple random sampling was done, the sample size has been rounded off to 300. Data was collected from all the persons aged more than 15 years who were residents of the study area.

### **Inclusion criteria**

All the persons aged more than 15 years and above who give consent to participate in the study.

### **Exclusion criteria**

Those who are not willing to participate in the study, those who could not be contacted even after three visits were excluded from the study. Pre-tested, semi structured questionnaire was used as study tool and data collection was done by face to face interview. Baseline data was collected on socio-demographic profile of the subjects,

consumption of smoking, type of smoking, their knowledge, attitude and practices regarding antitobacco measures imposed under COTPA 2003.

**Statistical analysis**

Data was entered into Microsoft excel sheet and various variables were coded. It was then analyzed using SPSS version 24. Data is represented as tables; proportions; pie charts. Chi-square test was done wherever appropriate, p<0.05 is taken as statistically significant.

Ethical considerations approval from Institutional ethics committee of KIMS, Narketpally has been obtained before the commencement of the study.

**RESULTS**

In this study, 300 subjects above age 15 yrs. were interviewed but only 293 subjects gave consent to participate. Among them, 54.3% were non-smokers and 45.7% were current smokers (Figure 1).

**Table 1: Distribution and association of socio-demographic factors influencing tobacco use.**

Socio-demographic variables		Smokers (n=134) N (%)	Non-smokers (n=159) N (%)	Total (n=293) N (%)	P value
<b>Age</b>	15-30	48 (35.8)	51 (32.1)	99 (33.8)	<0.05
	31-45	30 (22.4)	39 (24.5)	69 (23.5)	
	46-60	32 (23.9)	43 (27)	75 (25.6)	
	>60	24 (17.9)	26 (16.4)	50 (17.1)	
<b>Gender</b>	Male	112 (83.6)	119 (74.8)	231 (78.8)	0.068
	Female	22 (16.4)	40 (25.2)	62 (21.2)	
<b>Religion</b>	Hindu	126 (94)	147 (92.5)	273 (93.2)	0.594
	Muslim	7 (5.2)	8 (5)	15 (5.1)	
	Christian	1 (0.7)	2 (1.3)	3 (1)	
	Others	0 (0)	2 (1.3)	2 (0.7)	
<b>Marital status</b>	Unmarried and others (Divorced/separated/widower)	31 (23.1)	46 (28.9)	77 (26.3)	0.261
	Married	103 (76.9)	113 (71.1)	216 (73.7)	
<b>Type of Family</b>	Living alone	10 (58.8)	7 (41.2)	17	0.428
	Nuclear	100 (44.2)	126 (55.8)	226	
	Joint/3-Gen	24 (48)	26 (52)	50	
<b>Education</b>	Illiterate	68 (50.7)	48 (30.2)	116 (39.6)	<0.05
	Literate	66 (49.3)	111 (69.8)	177 (60.4)	
<b>Occupation</b>	Employed	33 (24.6)	51 (32.1)	84 (28.7)	0.160
	Un-employed	101 (75.4)	108 (67.9)	209 (71.3)	
<b>S.E.S</b>	Upper	15 (11.2)	14 (8.8)	29 (9.9)	0.386
	Upper middle	25 (18.7)	38 (23.9)	63 (21.5)	
	Lower middle	37 (27.6)	54 (34)	91 (31.1)	
	Upper lower	40 (29.9)	35 (22)	75 (25.6)	
	Lower	17 (12.7)	18 (11.3)	35 (11.9)	

**Table 2: Distribution of study subjects according to Knowledge/awareness about COTPA, 2003.**

Variables		Smokers (n=134) N (%)	Non- smokers (n=159) N (%)	Total (n=293) N (%)
<b>Knowledge/awareness</b>	Yes	72 (53.7)	98 (61.6)	170 (58.02)
	No	62 (46.3)	61 (38.4)	123 (41.98)
<b>Source of awareness</b>	News paper	11 (15.27)	20 (20.40)	31 (18.23)
	Television	55 (76.38)	76 (77.55)	131 (77.05)
	Health personnel	4 (5.55)	1 (1.02)	5 (2.94)
	Others	2 (2.77)	1 (1.02)	3 (1.76)

**Table 3: Distribution of study subjects according to knowledge about various section of COTPA, 2003.**

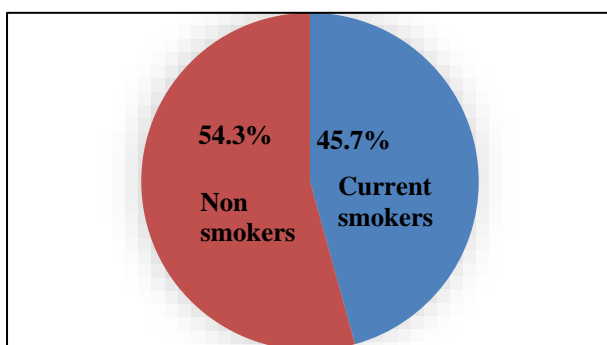
Variables		Smokers (n=134)	Non-smokers (n=159)	Total (n=293)	P value
		N (%)	N (%)	N (%)	
<b>Knowledge about section- 4 (prohibition of tobacco use in public place)</b>	Yes	101 (75.4)	134 (84.3)	235 (80.2)	0.057
	No	33 (24.6)	25 (15.7)	58 (19.8)	
<b>Knowledge about section- 6a (knowledge of age limit below which tobacco products not sold)</b>	Yes	56 (41.8)	90 (56.6)	146 (49.8)	<0.05
	No	78 (58.2)	69 (43.4)	147 (50.2)	
<b>Knowledge about section- 6b (ban on sale of tobacco products near educational institutions)</b>	Yes	70 (52.2)	117 (73.6)	187 (63.8)	<0.05
	No	64 (47.8)	42 (26.4)	106 (36.2)	

**Table 4: Distribution of study subjects according to attitude towards section 7, 8, 9 (pictorial health warning over tobacco products) of COTPA, 2003.**

Pictorial health warning over tobacco products cover reduce the habit of tobacco use	Smoker (n=134)	Non-smoker (n=159)	Total (n=293)	P value
	N (%)	N (%)	N (%)	
Positive attitude	38 (28.4)	64 (40.3)	102 (34.8)	<0.05
Negative attitude	72 (53.7)	60 (37.7)	132 (45.1)	
Neutral	24 (17.9)	35 (22)	59 (20.1)	

**Table 5: Distribution of study subjects according to practices about COTPA act, 2003.**

Variables		Smokers (n=134)	Non smokers (n=159)	Total (n=293)	P value
		N (%)	N (%)	N (%)	
<b>Charged for violation of act</b>	Yes	14 (10.4)	14 (8.8)	28 (9.6)	0.634
	No	120 (89.6)	145 (91.2)	265 (90.4)	
<b>Knowledge about COTPA act, 2003</b>		<b>(n=170)</b>	<b>(n=123)</b>	<b>(n=293)</b>	<0.05
	Yes	19 (11.2)	9 (7.3)	28 (9.6)	
<b>Change in habit of tobacco usage</b>	No	151 (88.8)	114 (92.7)	265 (90.4)	<0.05
	Not at all	94 (55.3)	100 (81.3)	194 (66.2)	
	Reduction to some extent	55 (32.4)	17 (13.8)	72 (24.6)	
	Totally quit tobacco usage	14(8.2)	2 (1.6)	16 (5.5)	
	Quit before commencement of COTPA	7 (4.1)	4 (3.3)	11 (3.8)	



**Figure 1: Distribution of study population according to tobacco use (n=293).**

Among smokers, majority 35.8% belongs to 15-30 years age group, 83.6% were male, 94% were Hindus, 76.9% were married, 58.8% were living alone, 50.7% were

illiterate, 75.4% were un-employed and 29.9% belongs to upper lower class of socioeconomic status according to modified B.G. Prasad classification, 2018. Majority of non-smokers, 32.1% belongs to 15-30 years age group, 25.2% were female, 92.5% were Hindus, 71.1% were married >50% belongs to nuclear and joint families, 69.8% were literate and 32.1% were employed and 34% belongs to lower middle socio-economic status. Statistically significant association was observed between smoking status and age, marital status, education, occupation and socio-economic status (Table 1).

**Awareness about COTPA**

Analysis of the study population showed that 58.02% were aware of the COTPA 2003, awareness regarding anti-tobacco measures showed that 80.2% knew that smoking was prohibited in public place, 49.8% knew that

there was an age limit below which sale of tobacco products was banned and 63.8% knew that there is a ban on sale of tobacco products near educational institutions. Source of information were newspaper (18.23%), television (77.05%), health personnel (2.94%) and others (1.76%) (Tables 2 and 3).

### **Smoking and COTPA**

Majority of smokers (53.7%) were aware about COTPA, 2003, while it was about 61.6% among non-smokers. Television was the major source of information about COTPA, 2003 among smokers (76.38%) while in non-smokers only 77.55%. This was followed by newspaper 15.27% among smokers and 20.4% among non-smokers (Table 2). Among smokers, 24.6% were not aware about section 4 of COTPA, 2003 act, while it was only 15.7% among non-smokers. 58.2% of smokers and 43.4% of non-smokers were not aware about section 6a and 47.8% of smokers and 26.4% of non-smokers were not aware about section 6b of COTPA, 2003. Statistically significant association was observed between knowledge about COTPA, 2003 and smoking status (Table 3). 53.7% of smokers were having negative attitude towards sections 7, 8, 9 of COTPA, while 40.3% of non-smokers were having positive attitude and this association was observed to be statistically significant (Table 4).

Majority of smokers (10.4%) have paid penalty for violating COTPA act, while 8.8% of non-smokers also have paid penalty. Out of 170 subjects who were aware about COTPA, 11.2% of smokers have paid penalty for violation of act, while it was only 7.3% among non-smokers and this association was observed to be statistically significant. When asked about changes in the habits of smoking use after implementation of COTPA, 2003, 55.3% expressed no change in their habits, while 32.4% have noticed reduction in the usage of tobacco to some extent, while 8.2% expressed that they totally quit tobacco usage after implementation of COTPA act, 2003 and this association was observed to be statistically significant (Table 5).

### **DISCUSSION**

In the present study, prevalence of smoking was 45.7%, which was higher than study by Annadurai et al and Harris et al, this showed the depth of the problem.<sup>7,8</sup> According to Rani et al, tobacco usage increases with increase in age.<sup>9</sup> In our study population there was a biphasic trend in smoking pattern i.e., the prevalence of smoking was 35.8% between 15-30 years, decreased to 22.4% in between 31-40 years and increased to 23.9% for those between 46-60 years of age i.e., prevalence was more among younger and older age groups. Similar biphasic trend was observed in study by Annadurai et al.<sup>7</sup>

Prevalence of smoking was more common in illiterates than well-educated. This report was similar to the findings from NFHS-310, Rani et al, Harris et al and

Narayan et al.<sup>8-11</sup> In our study population there was no significant association between smoking and type of family. Smoking status was found to be significantly associated with age group, education, marital status, occupation and socio-economic status. Similar findings were observed in study by Annadurai et al, Rao et al, and Sharma et al.<sup>7,12,13</sup>

### **Awareness about COTPA**

Studies done in Andhra Pradesh and Assam in India have reported awareness of COTPA as 47.5 and 45.7% respectively.<sup>12,13</sup> Our study analysis showed that 58.02% were aware of the COTPA 2003, which is higher than these studies but lower than study by Annadurai et al and Rakesh et al.<sup>7,17</sup> Awareness regarding anti-tobacco measures showed that 80.2% knew that smoking was prohibited in public place, 49.8% knew that there was an age limit below which sale of tobacco products was banned and 63.8% knew that there is a ban on sale of tobacco products near educational institutions. These findings were lower than findings from Annadurai et al study.<sup>7</sup>

### **Smoking and COTPA**

Among smokers 53.7% were aware of the act and most of them, i.e. 75.4% of smokers were aware about the ban on smoking in public places. In addition, 10.4% of smokers were fined for violating the ban on smoking in public places. Regarding quitting, 32.4% of them reported that their smoking habit got reduced because of the anti-tobacco measures under the act. These findings were lower than study by Annadurai et al.<sup>7</sup> In countries with pictorial health warnings, such as Canada and Australia, these numbers were higher: more than 40% of Canadian smokers reported that the pictorial warnings have motivated them to quit smoking; in Australia, picture warnings have supported 62% of former smokers in their efforts to quit.<sup>14</sup> In our study, 8.2% reported that they had totally quit smoking because of fine due to violation but majority of them, i.e. 55.3% reported that act did not have any impact on their smoking habit, which was higher than a study in Tamil Nadu.<sup>7</sup>

In general, there was a positive attitude towards COTPA, despite of having lower awareness regarding the same. 34.8% of them favoured use of pictorial health warnings. These findings of the present study were lower than that of other studies probably due to different study settings.<sup>12,15,16</sup>

### **CONCLUSION**

The study concludes that the prevalence of smoking was higher than the Indian national average. Nearly half the participants had awareness of COTPA and nearly two thirds had an overall positive attitude towards COTPA. Most of the smokers felt that anti-tobacco measures imposed under the act did not have any impact on their

smoking status. Hence a concerted effort has to be made to increase the awareness of the Act amongst the vulnerable population, i.e., younger population, people from lower SES, and less educated people. The policy makers should consider newer options such as starting a help line for quitting tobacco to regulate the use of tobacco with consideration that most of the smokers were reluctant in quitting tobacco even after the implementation of various anti-tobacco measures under COTPA. Apart from these steps, counselling sessions have to be arranged for those tobacco users who are reluctant to quit. To conclude, the steps taken by the government bodies in the future should be strictly followed and it should be continuously monitored.

### Limitations

The present study was a cross-sectional community based undertaken in an urban slum area, hence the findings may not be extrapolative to rural and urban populations.

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