

## ORIGINAL ARTICLE

# Impact of anti-tobacco warning labels on behaviour of tobacco users in one of the cities of Gujarat, India

V.R. SHAH, V.R. DAVE, K.N. SONALIYA

Department of Community Medicine, GCS Medical College, Hospital &amp; Research Center, Ahmedabad, Gujarat, India

## Key words

Awareness • Impact • Tobacco users • Warning labels

## Summary

**Background.** Tobacco use continues to be the leading global cause of preventable deaths, killing nearly 6 million people worldwide each year. Tobacco control must be given the high priority by scaling up tobacco control measures. In India under Control of Tobacco Product Act, it is mandatory to keep the warning labels over all kind of tobacco products in order to minimise the use of tobacco.

**Objectives.** Review of the knowledge regarding warning labels printed on tobacco products among its users and to evaluate the impact of them on addicting behaviour.

**Methodology.** A Cross Sectional study was carried out among the group of people using tobacco in any form. Total 776 tobacco users were enrolled in the study.

**Results.** Mean age of tobacco user was 41.4 years. Out of total 776 tobacco users, 561(72.3 %) had ever noticed warning signals over the tobacco products. Among those who have noticed warning labels, 64.4 % became aware about health effects and 66% have thought to quit tobacco. Tobacco users of young age group (15-45) were more aware regarding warning labels. Females were less aware. As level of education increases number of tobacco users who tried to quit or reduced the daily quantity of tobacco intake were also increases.

**Conclusions.** Positive impact of warning labels has been seen among the tobacco users who have noticed them. Not all the tobacco users were aware regarding the presence of warning labels as per the findings of present study.

## Introduction

Tobacco is the prime and most perilous killer of humanity probably since its discovery. From all its care-takers in farms to stakeholders and mainly its users are suppose to suffer from multiple health hazards – the ultimate outcome of which is premature miserable death. Almost one million annual deaths from tobacco-related diseases occur in India, the world's second largest consumer of tobacco, where about one-third of adults use some form of tobacco [1-3]. According to the Million Death Study, Smoking alone causes 10% of all deaths. One in five of all adult male deaths and one in twenty of all adult female deaths in middle age are due to smoking.

In India, around 34.3% of youth are exposed to passive smoking at home. Among Daily tobacco users, 60.2% consumed tobacco within half an hour of waking up [4]. In India, beedi smoking is most popular form of tobacco smoking, followed by cigarette smoking. Paan with tobacco is the major chewing form of tobacco. Dry tobacco-areca nut preparations such as paan masala, gutka and mawa are also popular and highly addictive.

Indian Parliament passed the Cigarette and Other Tobacco Products (prohibition of Advertisement and Regulation of Trade and Commerce, production, supply and Distribution) Bill, 2003. One of the key provisions under this act is health warnings in both written and pictorial

form. Health warnings on tobacco packages are among the most widespread policy initiatives implemented to raise awareness of the health risks of tobacco as well as to encourage consumers to quit. Communicating the health hazards of tobacco use is a primary goal for tobacco control Policy.

Despite such efforts to inform consumers about the dangers of tobacco products, little is known to them about the content of or even the existence of warning messages. Little is known about the impact of pictorial warnings or health messages on tobacco products on people's behavior. An analysis of the awareness of the presence of warning messages among tobacco users is important. Present study was conducted to know about the level of awareness about anti tobacco warning labels, among the current tobacco users residing in the urban slums of Ahmedabad City in Gujarat province of India.

## Objectives

1. To study the pattern of use of tobacco among the tobacco users.
2. Review of the knowledge regarding warning labels printed on tobacco products among tobacco users.
3. To evaluate the impact of the existing textual and pictorial warnings.

## Materials and methods

A Cross Sectional study was carried out among the group of people using tobacco in any form. A Questionnaire used for data collection was pre-designed. Questionnaire was designed so as to collect information regarding socio demographic profile of tobacco users, pattern of tobacco use and any kind of awareness about warning labels either in written form or in pictorial form. It was pre-tested by carrying out pilot study. Modifications were made in the questionnaire based on the findings of pilot study. Type of questionnaire was close ended, that require yes or no answer. Data we collected were of qualitative type.

Sample size was calculated by using following formulae [5]:

**Sample size =  $4pq/L^2$  (for 95% confidence)**

where,

p is the prevalence of tobacco users (Which was kept as 34% as per the recent "Global Adult Tobacco Survey (GATS) India" report [1])

q = 1-p ,

L= Allowable error, which was kept as 10% of p for present study. So it was 10% of 34 i.e. 3.4.

So the calculated sample size was 776.4, to round about the figure it was taken as 776.

Thus, total 776 tobacco users residing in the field practice area covered under Urban Health Training Center of one of the teaching institutes in Ahmedabad city of Gujarat Province of India were selected. Personal interview technique was used for the data collection. Investigators visited each tobacco users and interviewed them personally. Informed verbal consent was taken prior to data collection. Those who refuse to give consent were excluded from the study. Study was carried out between March-May 2012. Data analysis was done by using SPSS software. Chi- square test was used as a test of significance considering the data as qualitative.

## Results

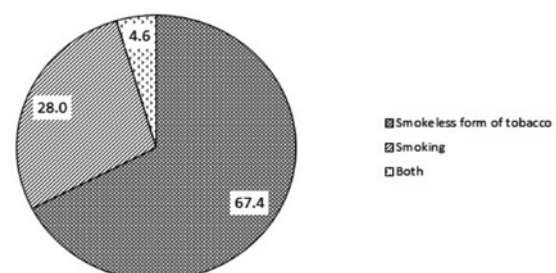
Total 776 tobacco users have participated in the study. Maximum numbers of tobacco users (43.2%) were between 35 and 55 years. Mean age of tobacco user was 41.4 years with standard deviation of 14.6 years. 592 (76.3%) were males while 184 (23.7%) were females. Out of 776, 639 (82.3%) were married and 181(23.3%) were illiterate. 554 (71.4%) were currently employed and 11 (1.4%) were students yet (Tab. I). Out of 776, 523 (67.4%) were using smokeless form of tobacco, while 217 (28%) were consuming tobacco by smoking. 36 (4.6%) were consuming tobacco in both forms. Smokeless forms of tobacco included Gutkha, Masala and Snuff where as smoking included bidi and cigarette (Fig 1). 426 (54.9%) were using tobacco in any form since more than 10 years. 168 (21.6%) had started using tobacco since < 1 year (Fig 2). Out of total 776 tobacco users, 561 (72.3%) had ever noticed warning signals over the tobacco products. On doing analysis, it was

Tab. I. Socio demographic profile of study population (n = 776).

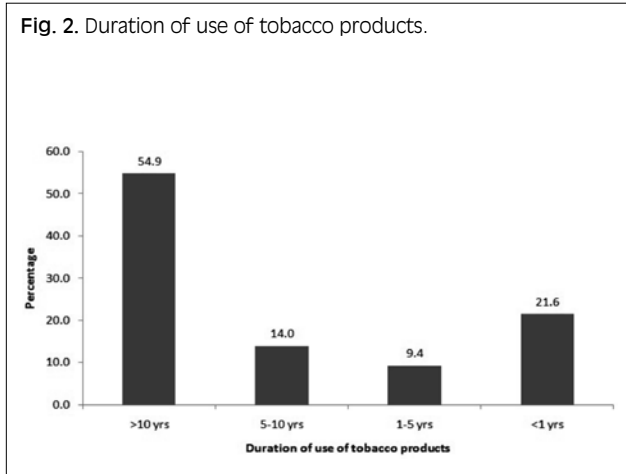
Socio Demographic Variables	Frequency	Percent
<b>Age group</b>		
<15	5	0.6
15-24	99	12.8
25-34	154	19.8
35-44	170	21.9
45-55	165	21.3
56-64	129	16.6
>65	54	7.0
<b>Gender</b>		
Female	184	23.7
Male	592	76.3
<b>Marital Status</b>		
Married	639	82.3
Un married	94	12.1
Widow/Widower	43	5.5
<b>Education</b>		
Illiterate	181	23.3
Primary	225	29.0
Secondary	238	30.7
Higher secondary	71	9.1
Graduate and Above	61	7.9
<b>Employment</b>		
Non working	211	27.2
Working	554	71.4
Students	11	1.4

found that tobacco users of young age group (15-45) were more aware regarding warning labels whereas tobacco users from extremes of age were less aware about the same. Gender difference regarding awareness about warning message was also statistically significant – females were less aware than males. Education wise comparison showed that literate tobacco users had more awareness towards the warning labels as compared to illiterate. Findings were significant statistically. Tobacco users who were consuming tobacco since less than 5 year were having more awareness regarding warning labels. Thus the level of awareness regarding warning

Fig. 1. Distribution of the study population as per the use of tobacco products in different forms.



**Fig. 2.** Duration of use of tobacco products.



labels was significantly differs among tobacco users with different socio- demographic profile (Tab. II). The positive impact of education was seen in the perception of warning signals. As the level of education increases number of tobacco users who tried to quit the tobacco or reduced the daily quantity of tobacco intake were also increases. They become more aware about health hazards of tobacco (Tab. III). It was found statistically sig-

nificant that the addicts using either smokeless form of tobacco alone or both smokeless and smoking form were more aware about health hazardous message or pictorial warnings than the addicts who use smoking form alone (Tab. IV).

## Discussion

Out of 776, 523 (67%) were using smokeless form of tobacco including gutkha, masala and snuff, while 217 (28%) were using consuming tobacco by smoking. 36 (5%) were consuming tobacco in both forms. Our findings were similar to the findings of Global Adult Tobacco Survey [1] who found that the majority of tobacco users (60%) consume only smokeless tobacco. In present study, 426 (54.9%) were using tobacco in any form since more than 10 years. 168 (21.6%) had started using tobacco since < 1 year. Out of total 776 tobacco users, 561 (72.3%) had ever noticed warning signals over the tobacco products. Results were almost similar to that found in the study of Aravind Karinagannanavar et al. [6] who mentioned that 72.5% of total participants had seen the pictorial warnings.

Warning labels do have the impact on changing behavior of the tobacco users. In present study, among those who

**Tab. II.** Awareness about warning labels among tobacco users.

Variables	Warning signals not seen (%)	Warning signals seen (%)	Total	Chi-Square	p value
Age group					
< 15 (n = 5)	2 (40)	3 (60)	5	42.9	< 0.001
15-24 (n = 99)	16 (16.2)	83 (83.8)	99		
25-34 (n = 154)	28 (18.2)	126 (81.8)	154		
35-44 (n = 170)	40 (23.5)	130 (76.5)	170		
45-55 (n = 165)	49 (29.7)	116 (70.3)	165		
56-64 (n = 129)	51 (39.5)	78 (60.5)	129		
> 65 (n = 54)	29 (53.7)	25 (46.3)	54		
Gender					
Female (n = 184)	104 (56.5)	80 (43.4)	184	98.1	< 0.001
Male (n = 592)	111 (18.7)	481 (81.2)	592		
Education					
Illiterate (n = 181)	97 (53.6)	84 (46.4)	181	98.5	< 0.001
Primary (n = 225)	64 (28.4)	161 (71.6)	225		
Secondary (n = 238)	45 (18.9)	193 (81.1)	238		
Higher secondary (n = 71)	5 (7.0)	66 (93.0)	71		
Graduate and above (n = 61)	4 (6.6)	57 (93.4)	61		
Duration of tobacco use					
> 10 yrs (n = 426)	129 (30.3)	297 (69.7)	426	17.4	< 0.01
5-10 yrs (n = 109)	17 (24.0)	92 (76.0)	109		
< 5 yrs (n = 241)	44 (18.2)	197 (81.7)	241		
Total	215	561	776		

**Tab. III.** Education versus affirmative effect of warning signals on the tobacco users.

Education	Effect of warning signals			Total
	Tried to quit (%)	Reduced the quantity (%)	Aware about health hazards (%)	
Illiterate	48 (57.1)	57 (67.9)	46 (54.8)	84
Primary	85 (52.8)	120 (74.5)	85 (52.8)	161
Secondary	123 (63.7)	149 (77.2)	119 (61.7)	193
Higher secondary	41 (62.1)	52 (78.8)	42 (63.6)	66
Graduate and Above	44 (77.2)	47 (82.5)	42 (73.7)	57

**Tab. IV.** Impact of type of tobacco addiction on awareness regarding warning labels on tobacco products.

Type of Tobacco used	Awareness regarding warning labels		Total
	Absent (%)	Present (%)	
Smokeless form	115 (23.0)	408 (78.0)	523
Smoking	92 (42.4)	125 (57.6)	217
Both	8 (22.2)	28 (77.8)	36
Total	215	561	776

Chi square – 32.4 P &lt; 0.001

were aware about warning signals, 82.2% said that they had reduced the quantity after seeing the warning labels, whereas 64.4% became aware about health effects and 66% have thought to quit tobacco. In India, three in five current tobacco users (61.1%) noticed the health warning on tobacco packages and one in three current tobacco users (31.5%) thought of quitting tobacco because of the warning label [4]. Aravind Karinagannanavar et al. [6] mentioned that among the subjects who had seen the pictorial warning, 111 (25.5%) had interpreted correctly and 63(14.5%) had given a thought/ tried to reduce or quit tobacco consumption. As per the findings of European commission, one fifth of smokers reported that health warnings have been effective in getting them to smoke less and in helping them try to quit [7]. In countries with pictorial health warnings, such as Canada and Australia, impact of warning labels were high. More than 40% of Canadian smokers report that the pictorial warnings have motivated them to quit smoking. While among Australian smokers, 57% reported that the labels made them think about quitting [8, 9].

In our study we found that tobacco users from age group of 15-45, Male, better educational status and who were consuming tobacco since less than 5 year all were more aware regarding warning signals. Results were significant statistically. Findings of present study were similar to those found in study of Aravind Karinagannanavar et al. [6]. They found that younger age group (< 25 years), better educational status, lesser duration (< 5 years) of tobacco usage was found to have significant association with awareness about pictorial warnings on tobacco products.

Impact of Education is there on the perception of warning signals. In present study 53.6% of illiterates were not aware about the warning labels where as in the study

of G N Karibasappa [10] 40.6% of illiterates were not aware about the warning labels. As the level of education increases number of tobacco users with positive impact of warning labels increases. In present study, group of tobacco users who came in the category of graduate and above, 44 (77.2%) had tried to quit, 47 (82.5%) had reduced the quantity while 42 (73.3%) became aware of health hazards. GN Karibasappa in their study mentioned that awareness and impact of pictorial warnings was highest among graduates [10].

## Conclusions

Though being stamped as one of the most common killer, tobacco is still being used passionately by the people especially young ones. Throughout the world almost all governments are making some form of legislations to increase the awareness about health hazards of tobacco products and to decrease the number of deaths directly or indirectly consequence of tobacco addiction in any form. It was accomplished from the findings of present study that pictorial message/photographic material can convey the relevant message to illiterates as well as enhance the impact for those who are literate. Although some of the addicts are so ardent for it that they are overlooking any kind of health warnings or messages but still there are many who have tried to quit or at least reduced the quantity after seeing the warning messages over the tobacco products. It was also concluded that those using only smoking form of tobacco were having more awareness regarding tobacco warning signals. Apparently it shows that tobacco users are presuming smokeless form of tobacco as less hazardous and were not keen to pay attention towards health warnings.

## RECOMMENDATION

The education was found to be a mammoth savior to quit the tobacco or to reduce the daily quantity gradually. The same should be utilized for peer groups or for their cohabitants by means of educating them about health hazards of tobacco. From very initial years of study, i.e. possibly from primary school education, the health hazards of tobacco must be thrust in the brains of young students that they can't think of addiction. Again the duration of addiction was also found posi-

tive factor. The recent users of any tobacco form must be taken care of by health workers and proper planning should be done for their counseling and rehabilitation by proper person. School and colleges should organize such screening camps frequently in good faith of their students – the would be growth engine of the country. In majority regions of India, it can be found that smokeless form of tobacco (i.e. mainly paan-masala, mawa and up to some extent gutkha) are being sold by local shopkeepers which is prepared instantaneously on demand and packed in hand made pouches which do not contains any kind of health warnings and messages. Strict enforcement of law in this regard should be enacted.

## References

- [1] *Global Adult Tobacco Survey (GATS) India report 2009-2010*. Available from: [http://www.searo.who.int/linkfiles/regional\\_tobacco\\_surveillance\\_system\\_gats\\_india.pdf](http://www.searo.who.int/linkfiles/regional_tobacco_surveillance_system_gats_india.pdf) (Last accessed on 2012 August 3).
- [2] Reddy KS, Gupta PC, eds. *Report on Tobacco Control in India. Ministry of Health and Family Welfare. New Delhi, India; 2004*. Available from: [http://mohfw.nic.in/WriteReadData/1892s/911379183TobaccocontroinIndia\\_10Dec04.pdf](http://mohfw.nic.in/WriteReadData/1892s/911379183TobaccocontroinIndia_10Dec04.pdf). [Last accessed on 2012 August 18].
- [3] Jha P, Jacob B, Gajalakshmi V, et al. *A nationally representative case-control study of smoking and death in India*. N Engl J Med 2008;358:1137-47.
- [4] Sunderlal. *Textbook of Community Medicine*. Third edition. New Delhi, India: CBS Publishers & Distributors 2011, pp. 601-602.
- [5] Mahajan BK. *Methods in Biostatistics for medical students and research workers*. Sixth Edition. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd 2006, pp. 92-94.
- [6] Karinagannanavar A, Raghavendra B, Hemagiri K, et al. *Awareness about pictorial warnings on tobacco products and its impact on tobacco consumers in Bellary, India*. Asian Pacific J Cancer Prev 2011;12:2485-89.
- [7] *European Commission. Eurobarometer: Survey on Tobacco (Analytical Report)*. 2009; [ec.europa.eu/public\\_opinion/flash/fl\\_253\\_en.pdf](http://ec.europa.eu/public_opinion/flash/fl_253_en.pdf) (Last accessed on 2012 August 3).
- [8] Hammod D, Fong GT, Borland R, et al. *Text and Graphic Warnings on cigarette packages: findings from the ITC four country survey*. Am J Prev Med 2007; 32:202-9.
- [9] Shanahan P, Elliott D. *Evaluation of the effectiveness of the graphic health warnings on tobacco product packaging*. 2008; Australian Government Department of Health and Ageing, Canberra. <http://www.health.gov.au/internet/main/publishing.nsf/Content/phd-tobacco-eval-graphic-health-warnings-full-report> (Last accessed on 2012 August 3).
- [10] GN Karibasappa, L Nagesh, GV Usha, et al. *Assessment of awareness about pictorial warnings on tobacco products among 15 years and above age in Davangere City, Karnataka, India - a cross sectional survey*. Indian J Stomatol 2011;2:227-32.

■ Received on August 29, 2012. Accepted on May 14, 2013.

■ Correspondence: Venu R Shah, Department of Community Medicine, GCS Medical College, Opp. DRM Office, Naroda Road, Ahmedabad, Gujarat, India. PIN-380025 - E-mail: [venushah@yahoo.co.in](mailto:venushah@yahoo.co.in)