

Pictorial Health Warnings on Tobacco Packs - A Knowledge, Attitude and Practice Survey among Indian Engineering Students

Dr Avinash Kumar¹, Dr Manjunath P Puranik²

¹MDS, Command Military Dental Centre, Lucknow, Uttar Pradesh

²MDS, Prof & Head, Department of Public Health Dentistry, Government Dental College & Research Institute, Bangalore, Karnataka,

Corresponding Author: Dr Avinash Kumar

ABSTRACT

Objectives: To assess the knowledge, attitude and practice about the Pictorial health warnings on tobacco packs among engineering students and identify the areas that need consideration

Methods: Four Hundred engineering students were recruited from various Engineering colleges in Bangalore city, India. A self-administered questionnaire was used to collect the demographic data as well as knowledge, attitude and practices regarding Pictorial health warnings on tobacco packs.

Results: The majority of the Engineering students (89.5%) were aware about the presence of Pictorial warning labels on the Tobacco packs. About 81.5% were able to understand these Warnings. Majority (90.7%) agreed that Pictorial warnings must be present on tobacco pack. Two third of the students agreed that a tobacco user avoids looking at these Pictorial Warnings. About 42% of the students agreed that this warning encourages one to quit the habit of tobacco usage. Around 37.1% never made an attempt to quit in last one year, inspite of seeing Pictorial warning label on the tobacco packs. Half of the Engineering students (55.5%) opined that there is a need for more gory images.

Conclusions: The Engineering students had knowledge and positive attitudes about the Pictorial warnings on Tobacco packs. But they lacked the motivation to quit the habit in spite of the presence of warnings. Hence, there is a need to motivate them and also make the warnings impactful.

Keywords: Pictorial health warnings, tobacco, students, India

INTRODUCTION

Tobacco is the only legal consumer product that can harm everyone exposed to it – and it kills up to half of those who use it as intended. Yet, tobacco use is common throughout the world due to low prices, aggressive and widespread marketing, lack of awareness about its dangers, and inconsistent public policies against its use.

^[1] Nearly 80% of the more than one billion smokers worldwide live in low- and middle-income countries, where the burden of tobacco-related illness and death is heaviest.

^[2] As per the WHO Global Report on “Tobacco Attributable Mortality” 2012, 7% of all deaths (for ages 30 and over) in India are attributable to tobacco. ^[3]

Tobacco manufacturers have always used packaging as a platform to reinforce brand loyalty and users' perceived self-image, particularly among young people. Today's teenager is tomorrow's potential regular customer, and the overwhelming majority of smokers first begin to smoke while still in their teens. Pack warnings reduce this marketing effect. [1] Pictorial Health Warnings on cigarette packages have been identified as important and cost effective health communication strategies. [4] Tobacco packs also serve as portable advertisements with high levels of exposure among non-smokers: unlike many other consumer products, cigarette packs are displayed each time the product is used and are often left in public view between uses. [5]

As a signatory to the World Health Organization (WHO) treaty on Framework Convention on Tobacco Control (FCTC), the Indian Government has been pursuing a proactive and bold strategy for tobacco control. [6] Government of India enacted "Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act" (COTPA) in 2003. The Section 7 of the Act is dedicated to the Mandatory depiction of statutory warnings (including Pictorial Warnings on tobacco packs) and specified the details for the Pictorial Warnings. [3]

In Indian scenario, the Pictorial Warnings have changed periodically. Although stronger than the previous warnings, they are yet to prove their effectiveness. Pictorial Health Warnings on tobacco packaging should be thought of as a mass media campaign virtually guaranteed to be seen by almost all users of tobacco and thus increasing the public awareness of the serious health risks of tobacco use. But its effectiveness of reaching its users has hardly been explored in India.

Studies about the tobacco use among the youth have been carried out among the college students, health professions students and among the general public comprising

illiterates. [7-11] However a search of the literature revealed that no studies have been carried about the perception of Pictorial Health Warnings on tobacco packs among the professional students (Engineering etc.) as this group is vulnerable to fall prey to tobacco habits. Hence this study was taken up with the aim to assess the knowledge, attitude and practice about the Pictorial Health Warnings on tobacco packs among the Engineering students in Bangalore city, India and to identify the areas that need consideration among this group.

MATERIALS AND METHODS

A cross-sectional questionnaire survey was conducted among the Engineering students in Bangalore city, India. A self-administered questionnaire based on previous literature [4,8,11,12] was designed to assess the knowledge, attitude and practice about the Pictorial Health Warnings on tobacco packs. Prior to the commencement of the main study, a pilot study was conducted to assess the feasibility, validity and reliability of the questionnaire and was revised accordingly.

The study population included the students of engineering colleges in Bangalore city. The list of engineering colleges was obtained from the website of *Visvesvaraya Technological University*. [13] The sample size calculated for the study was four hundred. Using the two stage sampling technique the Engineering colleges were selected. The students studying in the Engineering colleges present on the day of study were included in the study.

The identity of the participants was kept confidential and the informed written consent was obtained prior to the study. The study was approved by the Institutional Ethics Committee of the Government Dental College and Research Institute, Bangalore, India, and was conducted in full accordance with the World Medical Association Declaration of Helsinki. The necessary permission to conduct the study was obtained from the Institutional

authorities of all the selected engineering colleges.

A structured proforma was designed to collect the data on socio-demographic information like the age, sex, level of education, status of tobacco usage habit. The self-administered questionnaire comprised of 28 questions; 15 questions related to knowledge, 10 questions to attitude and 03 were related to practices among the Engineering students regarding the pictorial health warnings on tobacco packs.

The data was analyzed using SPSS Version 16.0(SPSS, Inc., Chicago, IL, USA). A *P*-value of <0.05 was considered to indicate statistical significance (with confidence interval of 95%). Descriptive statistics, Student's *t* test and Pearson's correlation test were used.

RESULTS

Out of the 400 Engineering students, the majority (58.8%) were in the age group of 21-25 years. About 68% students were males and 32% were females. A majority of the Engineering students (71%) were non-

users of tobacco. Out of 116 tobacco users, a majority (78.5%) was smokers; 17.2% were tobacco chewers and 4.3% used the snuff forms of tobacco. More than half of the tobacco users (53.5%) were using tobacco for 1-5 years. A majority of the Engineering students (96%) were aware that the tobacco use is harmful to general health.

Around 89.5% knew that smoking leads to lung cancer. Around half of the Engineering students were aware that the smokeless tobacco form leads to problems in pregnancy and impotence. (Table 1)

About 72.5% were aware that tobacco use in any form causes oral cancer. Around 68.7% had awareness about the ill effects of tobacco consumption on oral health. A large majority of the Engineering students (89.5%) were aware and a similar proportion (89.2%) had noticed the presence of Pictorial warning labels on the Tobacco packs. About 81.5% were able to understand these Pictorial warnings. Three fourth of the engineering students (75%) were aware about the implementation of Government legislation on Pictorial Health Warnings. (Table 2)

Table 1 Knowledge about consequences of Tobacco use on general health among Engineering students

Tobacco habit	Heart attack	Lung cancer	Impotence	Problems in pregnancy
Smoking	314(78.5)	358(89.5)	287(71.7)	297(74.2)
Smokeless	242(60.5)	259(64.7)	222(55.5)	225(56.2)

Figures in parenthesis indicates percentages

Table 2 Distribution of Engineering students according to knowledge about consequences of tobacco use on oral health and Pictorial warnings

Knowledge items	N(%)
Tobacco use in any form causes oral cancer	290(72.5)
Ill effects of tobacco consumption on oral health like gum diseases and dental caries/decay	275(68.7)
Presence of Pictorial warning labels	358(89.5)
Implementation of Govt. legislation on Pictorial health warnings	300(75.0)
Presence of Pictorial warning labels	357(89.2)
Understanding of the Pictorial warning labels	326(81.5)

Table 3 Attitude about consequences of Tobacco use on general health and the Pictorial Warnings on Tobacco packets among engineering students

Attitude items	Disagree N(%)	Uncertain N(%)	Agree N(%)
Smoking causes serious illness.	3(0.7)	32(8)	365(91.2)
Smokeless tobacco causes serious illness.	19(4.7)	87(21.7)	294(73.4)
Pictorial warning must be present on the tobacco packs	13(3.2)	24(6)	363(90.7)
Pictorial warnings on tobacco products create awareness about hazards on oral health.	46(5.2)	53(13.2)	301(75.2)
Pictorial warnings on tobacco products stop a tobacco user from using tobacco.	169(42.2)	82(20.5)	149(37.2)
A tobacco user, avoids looking at the pictorial warnings on tobacco products.	71(17.7)	73(18.2)	256(63.9)
Pictorial warning encourages one to quit the habit of tobacco usage.	132(33)	100(25)	168(42)
After seeing pictorial health warnings on tobacco packs a non-tobacco user, prefers to stay as nonuser.	233(58.2)	91(22.7)	76(18.9)
Pictorial Warning is more impactful than statutory warning alone.	46(11.4)	91(22.7)	263(65.7)
Pictorial warning in present form is more impactful.	75(18.7)	109(27.2)	216(54)

Table 4 Practice attributed to Pictorial Warnings on Tobacco packets among Engineering students

Practice items	Never N (%)	Sometimes N (%)	Always N(%)
Thought of quitting tobacco habit (Tobacco users)	34(29.3)	68(58.6)	14(12.1)
Attempt to quit in last 1 year (Tobacco users)	43(37.1)	51(43.9)	22(19)
Advised a tobacco user to quit the habit showing the pictorial warning labels	81(20.3)	191(47.7)	128(32)

Table 5 Suggestions for strengthening the Pictorial warning from its present form

Suggestions	Total N (%)
Need More Gory images	222(55.5)
Images should be more clearer	145(36.2)
Images should be larger in size	91(22.7)
Language of statutory warning	89(22.2)
Other	26(6.5)

Table 6 Overall Correlation coefficient (r) between Knowledge, Attitude and Practice scores

Variables	Knowledge	Attitude	Practice
Knowledge	-	0.1694*	0.0252
Attitude	0.1694*	-	0.0938*
Practice	0.0252	0.0938*	-

*P<0.05

Most of the Engineering students agreed that smoking and smokeless tobacco causes serious illness. Majority (90.7%) of them agreed that Pictorial Warning must be present on the tobacco packs. About 75.2% opined that Pictorial Warnings create awareness about hazards on oral health. Whether a Pictorial Warning stops a tobacco user from using tobacco was disagreed upon by (42.2%) of the students. The majority (63.9%) agreed that a tobacco user avoids looking at the Pictorial Warnings. This study also found an agreement among 42% of the students regarding Pictorial Warning encouraging them to quit the habit of tobacco usage. Around 58.2% of the students disagreed that after seeing Pictorial Health Warnings on tobacco packs a non-tobacco user, prefers to stay as nonuser. A majority (65.7%) of the students agreed that the Pictorial Warning is more impactful than statutory warning. Half of the students agreed that the Pictorial Warning in present form is more impactful. (Table 3)

About 29.3% of the tobacco users never thought of quitting and 37.1% never made an attempt to quit the tobacco habit in last one year, because of the Pictorial warning label on the tobacco package. Almost half of the Engineering students (47.7%) had sometimes and one in three students (32%) had always advised a tobacco user to quit the habit after showing

the pictorial warning labels on tobacco packets. (Table 4) Suggestions of engineering students for strengthening the Pictorial warning from its present form are shown in Table 5.

Statistically significant correlation was found between overall attitude and knowledge scores ($P<0.05$) and also between overall attitude and practice scores ($P<0.05$). However there were no statistically significant correlations between the overall knowledge and the practice scores. (Table 6)

DISCUSSION

Health warnings on tobacco product packaging increase the public awareness of the serious health risks of tobacco use and help to ensure that the packaging tells the truth about the deadly product within. Yet tobacco product packaging in most countries provides little or no information to warn consumers of the risks. This is of concern because greater specific knowledge and appreciation of the type, magnitude and consequences of risk are more likely to motivate tobacco users to try to quit. Young people respond to information about the health risks of tobacco use, if the information is presented meaningfully.

The present study was undertaken to explore the knowledge, attitude and practices regarding Pictorial Health Warnings on tobacco packs among the Engineering students. Previous studies have considered different study population; hence comparison is done wherever possible.

In our study one third of the engineering students were tobacco users which are in line with the previous studies. [7,12,14]

Participating engineering students' knowledge regarding the tobacco use and its effects on health was high when compared to previous studies. [8,9,12] It may be attributed to the fact that the study participants were professional group of

students with better educational background.

Present study findings was in agreement with that of previous studies with respect to the awareness of the engineering students about the presence of Pictorial warning labels [7,8] and also noticing its presence on the Tobacco packets. [10,12] Majority (81.5%) were able to understand this Pictorial Warning which was similar to a previous study. [8] But our study finding is in contrast to an earlier study in Bellary, India wherein around 25.5% of the respondents had interpreted the Pictorial Warnings correctly. [10]

Three fourth of the engineering students (75%) in the present study were aware about the implementation of Government legislation on Pictorial health warnings. So these findings give positive indications that the students knew about the warnings, noticed and understood the Pictorial health warnings on tobacco products.

Participating engineering students' attitude regarding consequences of tobacco use on general health was appreciable as most of them agreed to the fact that smoking causes serious illness but the proportions were less for the smokeless form of tobacco.

Our data indicates that a majority agreed that Pictorial warning must be present on the tobacco packs which may be considered as a positive sign. The students opinion whether the Pictorial warnings on tobacco products create awareness about hazards on oral health exceeded for the participants in the agreement group as compared to the previous studies. [8,9]

Regarding the responses to the question whether the Pictorial warnings on tobacco products stops a tobacco user from using tobacco, the proportion in the uncertainty group is large enough to tilt the balance. Thus a change in their attitude is required for a favorable result. Most of the students surveyed agreed that tobacco user, avoids looking at the Pictorial warnings on tobacco products which indicates that there

was some impact of the Pictorial warnings on the tobacco users.

About 42% of the students agreed that the Pictorial warning encourages one to quit the habit of tobacco usage in our study, which fell in line with the findings of previous studies. [10,11] where the impact of pictures on reducing or quitting tobacco consumption was low. Disagreement may arise out of their disbelief about the impact of Pictorial Warning in stopping the tobacco habit. But our study reported lesser proportion than the previous study wherein 73.9% revealed that pictorial warnings help them to quit the habit. [8]

The present data revealed that only one in five engineering students agreed that after seeing the Pictorial Health Warnings on tobacco packs a non-tobacco user, prefers to stay as nonuser. Therefore for some of them who want to start the tobacco usage, this warning acts as a deterrent. But the problem of uncertainty again needs to be observed and the engineering students be persuaded upon to change their attitude.

Most of the students agreed that Pictorial warning is more impactful than statutory warning and this fell in line with the previous studies. [7,8] Around half of the students surveyed agreed that the Pictorial warning in present form is more impactful this was consistent with the findings of earlier studies [7,11] advocating the need for more impactful Pictorial Health Warnings on tobacco packs.

The proportions of the students who thought of quitting the habit because of the Pictorial warning label were higher than the findings in the previous studies. [7,10,12]

A sizeable proportion of the students never made an attempt to quit the habit in last one year because of the Pictorial warning label, indicating their lack of motivation. It also questions the robustness of these Pictorial warnings. A few students never advised a tobacco user to quit after showing the Pictorial warning labels. This is a matter of concern.

The students in this study felt need for more gory images on tobacco packs as

confirmed to previous study findings which in turn might reduce the demand for tobacco. [14,15] The proportions of the students in our study who opined that the images on tobacco packs should be of larger size and that the language of statutory warning be in local language was proportionately less as compared to a previous study. [14]

In the present study statistically significant but weak correlation was found between overall attitude and overall knowledge scores and also between overall attitude and practice scores. However there were no statistically significant correlations between the overall knowledge and the practice scores.

The findings from this study among the Engineering students signify acquisition of knowledge about the consequences of tobacco use on general and oral health and also about the Pictorial Health Warnings; the students also possessed a positive attitude and which in turn influenced their practice in this direction. But simply by acquiring the knowledge the change in the practice cannot be expected.

Limitations

In this study a random sample of the Engineering students from the colleges located in the Bangalore city was considered. Although the study was conducted among the professional students, representing a part of the community their views may not correspond to that of the general population and should be extrapolated with caution. Hence for increased generalizability the future studies should encompass larger samples spread across the country.

Recommendations

The study findings indicate a need to motivate the Engineering students in quitting the habit. There is a need for well-planned training programmes, augmented with good motivation for improvement of their attitude so that their practice improves automatically. Group discussions, debates, poster competitions, role play and walkathons can be organized by the

professional dental associations periodically. Establishment of a tobacco cessation counseling center in the engineering college campus may be considered. Also in order to combat the ever growing tobacco menace the government should be more stringent in implementation of COTPA guidelines and focus its attention on compliance of packaging and labelling rules of the act as specified.

CONCLUSION

The results of the present study shows that majority of the Engineering students were aware that the tobacco use is harmful to general health. Most were aware and noticed the presence of Pictorial warning labels on the Tobacco packets. The students also had a positive attitude regarding the presence of Pictorial Warning. But they lacked the motivation to quit the habit in spite of the presence of warnings, probably because the Pictorial warnings lacked the impetus to influence them in quitting the tobacco habit. Therefore the present study threw light on some of the aspects of the young professional Engineering students towards the Pictorial Health Warnings on tobacco packs. The finding also highlights to improve the quality of the Pictorial Warnings and make them more robust and impactful.

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