

## RESEARCH COMMUNICATION

# Insights into Pictorial Health Warnings on Tobacco Product Packages Marketed in Uttar Pradesh, India

Aruna DS<sup>1\*</sup>, G Rajesh<sup>2</sup>, Vikrant Ranjan Mohanty<sup>3</sup>

### Abstract

**Background:** The Government of India issued an undertaking in the Supreme Court mandating pictorial health warnings (PHWs) on packages of tobacco products from 31<sup>st</sup> May, 2009 under “Cigarettes and Other Tobacco Products Act” (COTPA) guidelines. This constitutes a key economic channel for educating people on devastating health impacts of deadly products within in a vivid and memorable way. Few studies have investigated PHWs on tobacco products marketed in India. **Objectives:** To assess met guidelines for pictorial health warnings under packaging and labeling rules on packages of collected tobacco products specified by COTPA. **Materials and Methods:** Snowball/network sampling design was followed to obtain samples of 37 different tobacco brands, 18 in smoking form (12 cigarette, 6 bidi brands) and 19 in smokeless form (4 chewing tobacco, 11 Gutkha and 4 Khaini brands) marketed at retail outlets at Muradnagar. They were analyzed for their compliance with guidelines through checklist by one calibrated examiner. **Results:** PHWs were absent on packages of 5 tobacco brands. Fifteen tobacco brands had PHWs smaller than stipulated 40% of principal display area; 6 brands of bidis had PHWs on deceptive backgrounds, 3 of which were placed on a curved axis. Misleading descriptors and promotional messages were also present. **Conclusion:** Locally marketed tobacco products were not compliant with packaging and labeling rules specified by COTPA. This highlights the need for more stringent implementation of COTPA guidelines to combat the ever-growing tobacco menace.

**Keywords:** Tobacco products - tobacco packages - pictorial health warnings - COTPA

*Asian Pacific J Cancer Prev*, 11, 539-543

### Introduction

On a global basis, tobacco is one of only two causes of death increasing rapidly, the other being HIV/AIDS (Peto, 1999). It is estimated that 100 million deaths were caused by tobacco in the 20th century. If the current trend continues there will be one billion deaths in the 21<sup>st</sup> century. Unchecked tobacco related deaths will increase to more than 8 million a year by 2030 and 80% of those deaths will occur in the developing world (WHO Report, 2008). About half of these deaths will be in middle age (35-69yrs) rather than old age and those killed by tobacco in middle age loose on an average more than 20 years of non-smoker life expectancy. Tobacco poses a major challenge not only to health, but also to social, economic development and to environmental sustainability. Tobacco use is a major drain on the national financial resources.

Tobacco is a major health threat in the Southeast Asian region and India has one of the highest tobacco users. According to the NFHS-3 conducted in 2005-06, one-third (33.3%) of the men and 1.6% of women aged 15-49 yrs smoke, while smokeless tobacco use was found among more than one third (38.1%) of the men and one tenth (9.9%) of the women. In India, over half of all

tobacco consumed is smoked as bidis (54%) and about one-fourth of tobacco consumption is in smokeless form (nearly 27%). In the country as a whole, 7-8 times more bidis are sold than cigarettes (World Tobacco File, 2001). In a large survey in Uttar Pradesh, 10.6% of urban and 7.9% of rural males (>10years) reported using Gutka or pan masala (80% of users <40years), but fewer than 4% of these used pan masala without tobacco (Sushma and Sharang, 2005).

The physical consequences of using smoked or smokeless tobacco on the oral cavity ranges from the initial tobacco stains on tooth, periodontal diseases and tooth loss to life threatening oral cancer preceded by pre-malignant red and white lesions. Tobacco consumption is one of the major preventable causes for life threatening illness like cardiovascular diseases, chronic respiratory tract diseases, cancer of the lung, oral cavity, pharynx, larynx, oesophagus, stomach, pancreas, liver, kidney, ureter, uterine cervix and bone marrow (Lopez et al., 2006). Cancer incidence and survival rates are clearly linked to socioeconomic factors. Low income and disadvantaged groups are generally more exposed to avoidable risk factors as in Southeast Asia and certain African countries to score high on incidence rate for both sexes, the rates

<sup>1</sup>Department of Public Health Dentistry, I.T.S Center for Dental Studies & Research, Muradnagar, District; Ghaziabad, Uttar Pradesh, <sup>2</sup>Department of Public Health Dentistry, SDM College of Dental Sciences & Hospital, Sattur, Dharwad, Karnataka, <sup>3</sup>Maulana Azad Institute of Dental Sciences, Bahadur Shah Zafar Marg, New Delhi, India \*For Correspondence: arunads\_samay@yahoo.com

in these countries relate directly to risk behaviour such as chewing tobacco (e.g, betel nut or miang chewing or use of gat) (Petersen et al, 2005). These groups also have limited access to the health information to empower them in making decisions, protecting themselves from tobacco to improve their own health. This risk factor intervention constitutes a major public health challenge.

In order to tackle the tobacco epidemic, World Health Assembly of the WHO adopted the Framework Convention on Tobacco Control (FCTC) in May 2003 at its 56th session, which provides a set of evidence based guidelines for controlling the demand and supply of tobacco. As its first guiding principle, FCTC states that "every person should be informed of the health consequences, addictive nature and mortal threat posed by tobacco consumption and exposure to tobacco smoke." Pictorial health warning is one among the six MPOWER strategies declared by the WHO to combat tobacco use (WHO. MPOWER a policy package, 2008).

Framing and implementation of guidelines for pictorial health warnings on tobacco products in India took considerable time to see the light of the day. India ratified the FCTC on 5th February, 2004 under packaging and labeling rules (Article 11) with provision for pictorial health warnings on tobacco product packages. India had earlier enacted the "Cigarettes and Other Tobacco Products [Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution] Act" (COTPA) as a multi-measure law in 2003 [Ministry Of Law and Justice, Government of India, 2003]. The law came into force from May 1<sup>st</sup>, 2004. However, the rules notified under it experienced constant delay, deferral and dilution (Thejus, 2009).

Pictorial health warnings on packages of tobacco products were mandated from 31<sup>st</sup> May, 2009 (Government of India, Ministry of Health and Family Welfare, 2009). From 1<sup>st</sup> June, 2009 onwards all tobacco products which are being retailed in India, including those being imported, have to display pictorial health warnings on their packages.

However, vigilance is necessary to ensure that legislation is backed up with implementation and compliance by tobacco manufacturers in showing the truth about health hazards of tobacco through the medium of tobacco packages being universal in reach overcoming the illiteracy and language barriers.

There are very few studies which investigated the pictorial health warnings on tobacco products marketed in India. Given the background, present study was conducted with the objective of analyzing the pictorial health warnings on packages of tobacco products marketed at Muradnagar city and a municipal board in Ghaziabad district in the Indian State of Uttar Pradesh.

## Materials and Methods

The study sample consisted of 37 different tobacco brands of tobacco products, 18 in smoking form (12 brands of cigarette, 6 brands of Bidi) and 19 in smokeless form (4 brands of chewing tobacco, 11 brands of Gutkha & 4 brands of Khaini) marketed at various retail outlets from

August 2009 onwards up to the end of December 2009 at Muradnagar.

Prior to the start of the main study, a pilot study was conducted in the month of July 2009, one month after the implementation of mandated pictorial health warnings on packages of tobacco products manufactured/packaged/imported in India on or after 31<sup>st</sup> May 2009. Data was collected on different tobacco products consumed and their availability from 250 tobacco users who visited I.T.S. Center for Dental Studies & Research, Muradnagar. Popular brands of tobacco products consumed and their point of sale at various retail outlets were enlisted.

Snowball/Network sampling design was followed to obtain representative sample. Different brands of tobacco products were purchased at various retail sale outlets, considering that already existing old stock of products would need two months to get exhausted and to get maximum representation of tobacco brands with pictorial health warnings. On packages of few tobacco brands, neither the date of packaging nor the pictorial health warnings were printed. They were included in the study as they were marketed during the study period.

Visual analysis of pictorial health warnings on packages of Tobacco brands and surface area occupied by the picture/image was calculated with ruler by one calibrated examiner. The packages of 32 different tobacco brands with pictorial health warnings were analyzed through prepared checklist on implemented guidelines for pictorial health warnings like size specification, position, clarity, content & color of the images. Printed language used for text of health warnings, background, misleading descriptors, promotional messages, date of packaging and expiry were also assessed.

Data were entered into a MS Excel spreadsheet (MS Office Excel 2007) and subjected to statistical analysis using Intercooled Stata (Version 9.2).

## Results

Of the 37 different brands of tobacco products included in the study, pictorial health warnings were absent on packages of 5 tobacco brands which included 3 brands of cigarette, two of which were international brands and 2 brands of Gutkha (Figure 1). Date of packaging was printed on 16 tobacco brands with date of expiry printed for 6 tobacco brands only (Table 1).

On further analysis of 32 tobacco brands carrying pictorial health warnings on their packages, 15 tobacco brands occupied smaller than the stipulated size of 40% of the principal display area of the pack (Figure 2). Among 3 brands of Bidi, pictorial health warnings were positioned on the side of packages in curved axis unparallel to the top edge of the pack. One brand of Bidi had blurred image and only one brand of Bidi had colored pictorial health warnings (Table 2).

Text of health warnings were printed in both English and Hindi(local) language on 14 tobacco brands, rest of 7 brands in Hindi and 11 brands in English (Table 3). Written promotional messages were present on 15 brands and 17 brands had picture promotional messages and on 6 brands of Bidi pictorial health warnings were printed on deceptive

**Table 1. Presence of Date of Packaging and Expiry on Packages of Tobacco Products**

Date of Packaging and Expiry	Various brands of Tobacco Products					Total N=32
	Smoking form		Smokeless form			
	Cigarette (12)	Bidi (6)	Chewing tobacco (4)	Gutkha (11)	Khaini (4)	
Date of Packaging	9	-	4	1	2	16
Date of expiry	-	-	4	1	1	6

**Table 2. Position and Color of Images in Pictorial Health Warnings on Packages of Various Tobacco Products**

Position and color of pictorial health warnings	Tobacco Products					Total N=32
	Smoking form		Smokeless form			
	Cigarette (9)	Bidi (6)	Chewing tobacco (4)	Gutkha (9)	Khaini (4)	
Position of images On Front panel	9	3	4	9	4	29
Parallel to top edge of the pack	9	3	4	9	4	29
Color of images	-	1	-	-	-	1
Colored	-	1	-	-	-	1
Black & white	9	5	4	9	-	31

**Table 3. Printed Language for Text of Health Warnings on Packages of Tobacco Products**

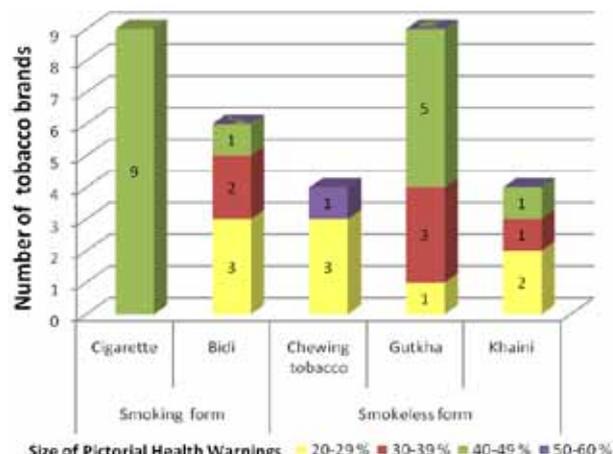
Printed language for text of health warnings	Tobacco Products					Total N=32
	Smoking form		Smokeless form			
	Cigarette (9)	Bidi (6)	Chewing tobacco (4)	Gutkha (9)	Khaini (4)	
Regional (Hindi) only	-	6	-	-	1	7
English only	9	-	-	1	1	11
Both in regional & English	-	-	4	8	2	14

**Table 4. Presence of Misleading Descriptors/Promotional Messages and Deceptive Background on Packages of Tobacco Products\***

Products*	Tobacco Products					Total N=32
	Smoking form		Smokeless form			
	Cigarette (9)	Bidi (6)	Chewing tobacco (4)	Gutkha (9)	Khaini (4)	
Misleading descriptors	1	-	-	-	-	1
Written Promotional messages	4	3	3	3	2	15
Picture promotional messages	5	3	1	6	2	17
Deceptive background	-	6	-	-	-	6



**Figure 1. Various Tobacco Brands in Smoking and Smokeless Form**



**Figure 2. Size of Pictorial Health Warnings on Packages of Various Tobacco Products**

background (Table 4).

**Discussion**

The present study involved the assessment of the compliance of various tobacco manufactures to the COTPA guidelines. It provides an overview of how public health messages reached large audience conveying serious health risks of tobacco use like cancer depicted by pictures on tobacco packages as medium for health communication. Given 22 different official languages in India, Pictorial health warnings depicting health impact would serve to universally communicate the same message to tobacco consumers in all States of India, overcoming the linguistic barrier.

Tobacco products and particularly cigarettes are badge products or products with a high degree of social visibility indicating personality of an individual, displayed each time the product is used and are often left in public view between uses; strong pictorial health warnings on packages of the tobacco products may repel this act of brand imagery posing the threat of killer product irrespective of the brand status.

Since, tobacco consumption in India is inversely related to education, picture warnings will help to reduce disparities in health knowledge than text only warnings by communicating not only with tobacco users but also with prospective quitters and young probable initiators with regular access to health information (Subramanian et al, 2004; Hammond et al, 2006).

In a study conducted among Canadian youths, more than 90% of the participants agreed that picture warnings on Canadian packages had provided them with important information about the health effects of smoking cigarettes. It was also reported that these pictorial health warnings were accurate and made smoking less attractive (Health Canada, 2005).

As tobacco is perishable in nature, date of packaging and expiry should be mentioned on the individual packet. Most manufacturers had not specified the date of packaging of their tobacco products, while others had mentioned the same to see on the outer packets. When the date of packaging is not mentioned, monitoring the implementation of pictorial health warnings will become an arduous task as the manufacturers may claim to have packaged their products before May 31<sup>st</sup>, 2009.

The size and position of health warning are critical to their effectiveness. The pictorial health warnings reported to be effective as in Australia were of size 90% positioned on back plus 30% on front of the tobacco pack, in Brazil it is 100% either of the sides, in Canada and Thailand it is 50% on both sides of tobacco packages (Cunningham, 2009). Large warnings located on the top portion of principal display area are considered to be noticed and recalled. If the pictorial health warnings are large and clear enough, people will see them when packets are displayed for sale, when they are taken out of pockets/purses and when they are discarded. Smokers are more likely to recall larger warnings, and have been found to equate the size of the warning with the magnitude of the risk (Strahan et al, 2002).

In the present study, some Gutkha brands had pictorial health warnings covering 40% area of the pack. Most of the area was used up by white background color, with much less space being allocated to the picture proper. Sizes of the pictures were again reduced on packages of few tobacco brands with two separate pictures corresponding to the text of health warnings in English and Hindi (Figure 2).

Evidence shows that unpleasant, threatening pictures of tobacco related health effects such as cancer of lung or an amputated leg capture attention and induce tobacco avoidance (Nascimento et al, 2008). COTPA (2009) specified two options for pictorial health warning on smoking type of tobacco products - color picture of the diseased lung or black & white X-ray image of the lung depicting chest of a man affected by Cancer (Figure 1) (though understanding the significance of these pictures may require help of radiologist).

For smokeless tobacco products picture of the scorpion (Figure 1) was used though usually Crab symbolizes Cancer. From a population based study in India, public perception of pictures in the present pictorial health warnings failed to communicate the warning and 88.5% of people strongly agreed to strengthen the existing pictures to depict serious disease like cancer caused by tobacco use (Raute et al, 2009). Smaller black and white X-ray images of lung as pictorial health warnings located on curved axis with printed deceptive background of brand name itself fails to repel tobacco user from appealing bigger promotional picture on front panel.

Misleading descriptor lights present on one international brand of cigarette may create false impression that particular tobacco product is less harmful than others. Tobacco industry communicates with its audience through promotional messages like special filter, filter tobacco pouch, status, protection, satisfaction guaranteed, enjoy without tension, etc. Further research is essential to explore the degree to which such promotional messages mislead and their subsequent impact on tobacco use like delay to quit and substitutes for quitting another brand.

COTPA specified that the warnings should appear in two languages one in which the brand name appears & other in any other language (regional) pertaining to the area of sale. Due to its vague specification, most tobacco brands do not have the warnings in local or regional language and they limit supportive text warnings to English literates. Particular care should be taken in the selection of pictures for use in low literate populations. Pictures of smoking without supporting text could inadvertently suggest approval rather than warning of its harm.

Several countries are exploring methods to enhance the effectiveness of pictorial warnings, including warnings that directly inform by research on the neurophysiology of emotions to maximize negative emotional arousal (Brazil), testimonial warnings that depict real people (Chile), strategy to make cessation and supportive information more engaging (through the inclusion of quit line telephone number as in New Zealand). The addition of mass media campaign that synergistically uses themes and images from the set of pictorial health warnings to build strength across different tobacco control efforts as in Australia are in action (Borland et al, 2009).

In the near future, new pictorial health warning that are to be implemented from 1<sup>st</sup> June, 2010 includes a picture of cancerous mouth with written text warning as "tobacco causes mouth cancer", along with "smoking kills" on smoking form and "tobacco kills" on smokeless form of tobacco (Government of India, Ministry of Health and Family Welfare COTPA 2010). They should be cautiously used, if they are designed on shock value with scary pictures persuading to quit tobacco use, as they create anxiety with no information/help to relieve the anxiety.

In conclusion, marketing of tobacco products which were not compliant with COTPA guidelines on pictorial health warnings was unimpeded six months after the notification by the Supreme Court of India. The poor credibility and little comprehensibility of the health messages to show the truth on health effects of tobacco use were revealed in the present study. The right of an individual to maintain a healthy life has to be enabled by the Government using strong pictorial health warnings as evidence based measure to warn the user and thus empower the consumer to save their lives from the growing tobacco menace.

The present study directs further analysis of myriad brands of tobacco products marketed across India. Pictorial health warnings as medium for educating people about cancer risk of tobacco use in prevention of cancer should also be explored. The need of hour demands Government to focus on strict implementation

of compliance with COTPA guidelines for manufacturers, distributors & retailers of tobacco products to fulfill the basic intention with which the provision was notified.

For recommendations, indications of nicotine and tar content also has to be mentioned on the packages, as tobacco is the only lethal product which is legally marketed to consumers around the world that has no safe limit. Information such as quit line phone number and advice for quitting on the packages of tobacco to relieve anxiety are suggested to make them more effective. From dental public health point of view, they would be an integral part for tobacco cessation initiative by dentists utilizing existing infrastructure to combat the oral cancer epidemic. Effective involvement of dentists in tobacco counseling requires training through continuing education programs to enhance their knowledge and skills to promote tobacco control.

## References

- Borland R, Wilson N, Fong GT, et al (2009). Impact of graphics and text warnings on cigarette packs; findings from four countries over five years. *Tob Control*, **18**, 358-64.
- Cunningham R (2009). Cigarette package warning size and use of pictures: international summary. Ottawa: Canadian Cancer Society, 7 July 2009. Available from: <http://www.tobaccolabels.ca/labelima/healthwarn> [accessed on 13 July 2009].
- Government of India, Ministry of Health and Family Welfare (2009). Cigarette and other Tobacco products (packaging and labeling) (Amendment) Rules, 2009. In: The Gazette of India. Extraordinary part II, section 3, Sub-section (i). New Delhi.
- Government of India, Ministry of Health and Family Welfare (2010). Cigarette and other Tobacco products (packaging and labeling) (Amendment) Rules, 2010. In: The Gazette of India. Extraordinary part II, section 3, Sub-section (i). New Delhi.
- Hammond D, Fong GT, McNeill A, et al (2006). Effectiveness of cigarette warnings labels informing smokers about this risk of smoking: finding from the international Tobacco Control (ITC) Four Country Survey. *Tob Control*, **15** (Suppl III), 19-25.
- Health Canada (2005). The health effects of tobacco and health warning messages on cigarette packages – Survey of adults and adult smoker; Wave 9 surveys. Prepared by Environics Research Group. [http://www.whoindia.org/LinkFiles/Tobacco\\_Free\\_Initiative\\_Tobacco\\_Control\\_Act-2003.pdf](http://www.whoindia.org/LinkFiles/Tobacco_Free_Initiative_Tobacco_Control_Act-2003.pdf)
- International Institute for Population Sciences and ORC Macro International (2007). National Family Health Survey (NFHS-3), 2005-06: India, IIPS, Mumbai, **2**, 426-9.
- Jamison DT, Breman JG, Measham AR, et al (2006). Disease control priorities in developing countries. 2nd ed. Washington: The World Bank/Oxford University Press.
- Lopez AD, Mathers CD, Ezzati M, et al (2006). Global burden of disease and risk factors. Washington. The World Bank/Oxford University Press.
- Ministry of Law and Justice, Government of India (2003). The Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003. No. 34 of 2003. [cited 2009 Mar 17].
- Nascimento BEM, Oliveira L, Vieira AS, et al (2008). Avoidance of smoking: the impact of warning labels in Brazil. *Tob Control*, **17**, 405-9.
- Petersen PE, Bourgeois D, Bratthall D and Ogawa H (2005). Oral health information systems towards measuring progress in oral health promotion and disease prevention. *Bull WHO*, **83**, 686-93.
- Peto R, Chen Z-M and Boreham J (1999). Tobacco-the growing epidemic. *Nature Medicine*, **5**, 15-7.
- Raute LJ, Pednekar MS, Gupta PC (2009). Pictorial Health Warnings on Cigarette packs: A Population Based Study Findings from India. *Tobacco Use Insights*, **2**, 11-16. Available from: <http://www.la-press.com>
- Strahan EJ, White K, Fong GT, et al (2002). Enhancing the effectiveness of tobacco package warning labels: a social psychological perspective. *Tob Control*, **11**, 183-90.
- Subramanian SV, Nandy S, Kelly M, Gordan D, Smith GD (2004). Patterns and distribution of tobacco consumption in India: cross sectional multilevel evidence from the 1998-99 national family health survey. *BMJ*, **328**, 801-6.
- Sushma C, Sharang C (2005). Pan masala advertisements are surrogate for tobacco products. *Indian J Cancer*, **42**, 94-8.
- Thejus T, Jayakrishnan T (2009). Pictorial warnings on tobacco products: how delayed and diluted in India? *Indian J Med Ethics*, **6**, 105-6.
- World Health Organization (2008). Programmes and projects, Tobacco Free Initiative (TFI), WHO Report on the Global Tobacco Epidemic -The MPOWER package [[http://www.who.int/tobacco/mpower/tobacco\\_facts/en/index.html](http://www.who.int/tobacco/mpower/tobacco_facts/en/index.html)].