International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Review Article

Health Warning Labels on Tobacco Products: A Review

Bhavna Sabbarwal[1], Manjunath P Puranik[2], Sowmya KR[3]

[1]Post Graduate student, [2]Professor and Head of the Department, [3]Assistant professor,
Department of Public Health Dentistry, Government Dental College and Research Institute

Corresponding Author: Bhavna Sabbarwal

Received: 14/12/2016 *Revised: 23/12/2016* *Accepted: 27/12/2016*

ABSTRACT

Tobacco is the most common cause of preventable death in the world. Majority of people are unaware of, misunderstand or underestimate the health risks due to tobacco and tobacco smoke. Health warnings were first introduced on cigarette packages in the USA in 1965. Ten years later in 1975, the Government of India passed similar legislation. In 2003 WHO framework convention on tobacco control (FCTC) provides guidelines for effective packaging and labeling of tobacco product. Since then there has been a transition from text only to pictorial and graphic form of health warnings with plain packaging emerging as a new trend. Studies have favored pictorial health warning labels over text messages. Messages on these packs would generate exposure far outweighing than from other ant tobacco communications. Tobacco product packaging is a key part of marketing efforts to make tobacco use appealing and how the same packaging can be used to communicate the health risks to consumers is the challenge faced by the regulators. Studies have favoured the inclusion of health warning labels especially pictorial health warning labels over text and graphic images over pictures to increase the impact of health warning labels irrespective of age, gender, race, education and socioeconomic status. More research in the area is recommended to counter the opposition of tobacco industry against health warning labels and to make them more effective.

Keywords: graphic warnings, health warning labels, packaging and labeling, pictorial health warnings, smoking, tobacco.

INTRODUCTION

Tobacco is a serious threat to global health, killing nearly 6 million people each year and causing hundreds of billions of dollars of economic harm annually in the form of excess health-care costs and lost productivity**.** [1] Both smoked and smokeless forms are considered as a risk factor for various cardiovascular and respiratory disorders, oral cancer and its recurrence, adult periodontal diseases, birth defects, retards healing following oral surgical and accidental wounds, promotes periodontal degeneration in diabetics. [2] Cigarettes cause about 1.5 million deaths from lung cancer annually, a number that may rise to nearly 2 million per year by the 2020s or 2030s, even if consumption rates decline in the interim. [3]

Globally, many people are not aware of, misunderstand or underestimate the risks for morbidity and premature mortality due to tobacco use and exposure to tobacco smoke. [4] While tobacco product packaging is a key part of marketing efforts to promote tobacco use, regulators can use the same to communicate the health risks to consumers. Messages on these packs would generate

exposure far outweighing compared to other ant tobacco communications, such as mass media campaigns. [5]

This review focuses on evolution of health warning labels on tobacco products, World Health Organization Framework Convention on Tobacco Control (WHO FCTC) guidelines and its implementation, International and Indian scenario and future perspectives.

TOBACCO

Tobacco is a green, leafy plant that is grown in warm climates. The burning of tobacco generates approximately 4000 compounds. [6] The smoke can be separated into gas and particulate phases. Among the gaseous phase carbon monoxide, carbon dioxide, nitrogen oxides, ammonia, hydrogen cyanide and volatile compounds like nitrosamines, sulfur containing compounds, hydrocarbons, alcohols, aldehydes and ketones are main components. Particulate phase include tar, formaldehyde and cyanide mainly. Tar is the compound in tobacco that remains after the moisture and nicotine are subtracted and consists of polycyclic aromatic hydrocarbons, which are carcinogens. The actual content of nicotine in tobacco can vary from 0.2% to 5%. [7]

Nicotine is the most abundant of the volatile alkaloids in the tobacco leaf. It is a colorless, volatile liquid alkaloid found in smoking and smokeless tobacco which turns brown and acquires the odor of tobacco upon exposure to air. The alkaloid is water-soluble and forms water-soluble salts. It is the chemical that makes tobacco addictive or habit forming. Nicotine goes into bloodstream and the body wants more. Nicotine is a stimulant which speeds up the nervous system, makes the heart beat faster and raises the blood pressure. Hence nicotine makes tobacco a drug. [6]

HISTORY OF TOBACCO

History of tobacco use dates back to 600 to 900 A.D. Tobacco was first grown by American Indians before Europeans took over. Native Americans used to smoke tobacco for religious and medicinal purposes but not daily. In 1612 settlers of first American colony grew tobacco as a cash crop because it became their main source of money. By 1800's people had begun using tobacco either in a pipe, hand-rolled cigarettes or cigar or in chewable form. Mechanization and mass marketing towards the end of the 19th century popularized the cigarette habit. First commercial cigarette were made in 1865 by Washington Duke in North Carolina. [6]

TOBACCO AND HEALTH WARNING LABELS (HWLs)

Globally there has been a diffusion of HWL sever since they were introduced in 1966 in USA. Since then HWLs have undergone many changes over a period of time. There are five generations of HWLs. Following section describes these generations in terms of evolution of HWLs from text messages to pictorial warnings with graphic images delivering strong and specific messages. [8]

First-generation HWLs: Vague health message on the side of pack

First time legislation requiring health warnings labels was proposed in 1957 in USA. Efforts accelerated in 1964 following the US surgeon general's report on smoking and health, when the US Federal Trade Commission (FTC) proposed that cigarettes packages will carry HWLs. [8]

In 1965 The Federal Cigarette Labeling and Advertising Act required the warning 'Caution: Cigarette smoking may be hazardous to your health' be printed in small font on the side of cigarette packs. [8] In 1967 the Federal Trade Commission (FTC) issued its first report recommending that the warning label be modified to 'Warning: Cigarette smoking is dangerous to health and may cause death from cancer and other diseases.' [9] In 1969 Public Health Cigarette Smoking Act prohibited cigarette advertising on television and radio and required each cigarette pack to contain the label 'Warning: The Surgeon General has determined that cigarette smoking is dangerous to your health.' [8]

In 1971 UK became the first government to reach a voluntary agreement with the industry to add the first-generation HWL 'Cigarettes can damage your health' to the package sides. [8]

Second-generation HWL: Specific health message on the pack side

Second generation HWLs were stronger and more specific. In 1969 Iceland became the second country to implement HWLs with clear health message 'Cigarette smoking could cause lung cancer and heart diseases.' The strong language was maintained. But in 1971 tobacco industry in Iceland convinced the parliament to abandon the HWLs. [8]

Third-generation HWLs: Specific health message on the front of the pack

Norway was the first country to implement third generation HWLs which were printed on pack front with a specific warning. In 1975 law required HWLs to be on pack side because of opposition of tobacco industry. In 1987 The Arab Gulf health ministers passed resolution for HWLs on the pack front in all Gulf Cooperation Council countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates). In 1988 The Middle East Tobacco Association (META), representing the major international cigarette manufacturers in the Gulf, mounted 'intensive lobbying efforts' that led all countries but Saudi Arabia to move the warning to the side panel, making Saudi Arabia the first country to require a clear health message on the front of the pack (without rotation). [8]

Fourth-generation HWLs: Rotating messages on the front of the pack

In 1976 The National Swedish Board of Health and Welfare proposed the rotation of HWLs covering 20% of front of cigarette packs. Despite industry opposition, Sweden implemented the rotating HWLs. On the other hand in 1978 tobacco industry successfully used Iceland's retreat from compulsory HWLs to block a US Senate proposal to introduce rotating HWLs. Rotating HWLs on the pack front were introduced in Ireland (1979), Iceland (1985), Australia (1987), Cyprus (1988) and New Zealand (1988). [8]

Fifth generation HWLs: Graphic images

Iceland approved the Tobacco Act that required Graphic Health Warning Labels (GHWLs) in 1985. In 1989 revision of the Swedish Tobacco Act included fifth-generation GHWLs covering almost 70% of the pack front, including skull and crossbones, crosses and cancer symbols. During 1990s Canadian government health agencies, non-governmental organisations, and health professionals began campaigning to increase the size of warning labels and include strong images depicting the damage caused by tobacco. [8]

In 2001 Canada became the first country to use graphic photographs. While in India, the industry blocked the use of the skull and crossbones symbol by claiming that the skull symbol would be offensive to some religious groups. Till 2012 Forty nine countries implemented GHWLs. [8]

WHO Framework Convention on Tobacco Control

Member States of the World Health Organization (WHO) took concerted action in May 1996, in the development of a "Framework Convention on Tobacco Control" (FCTC). An intergovernmental negotiating body comprised all WHO member states was established in 1999 and the treaty-the WHO FCTC-was adopted in 2003. [4]

Among all the provisions provided under FCTC, Article 11 deals with the packing and labeling of tobacco products. Guidelines under Article 11 are intended to assist Parties in meeting their obligations and to propose measures that they can use to increase the effectiveness of their packaging and labeling measures. Article 11 stipulates that each Party shall adopt and implement effective packaging and labelling measures within a period of three years after entry into force of the Convention for that Party**.** [4]

Also for future it proposes 'comprehensive ban actions' for the

advertisement, sales promotion and support of tobacco and improvement of health warning labels based on socio cultural context and smoking characteristic of each country. [4]

GLOBAL PROGRESS REPORT 2014 (IMPLEMENTATION OF FCTC ARTICLE 11)

This report provides a global overview of the status of implementation of the Convention; it also identifies strong achievements, innovative approaches and good practices used by the parties to comply with the requirements of the Convention. [10]

It was found that Artilcle 11 holds the third place in overall analysis with average implementation rate of 70%. The report shows compliance for health warnings in 90% of parties. There is increase in compliance in 2014 when compared to 2012 for other characterizing features of warnings. [10]

Several Parties, such as the European Union, Fiji, Mauritius, Nepal, Sri Lanka, Thailand and Uruguay, legislated for or introduced very large pictorial warnings, covering more than 60% of principal display areas. The introduction of a new round of pictorial warnings was reported by a few Parties, such as Brunei Darussalam, Ecuador and Panama. [10]

INDIAN SCENARIO

India is the third largest producer of tobacco in the world. Tobacco was introduced by Portuguese traders during AD 1600. Although Indian system of Ayurveda, never formally recommended the medicinal use of tobacco still the belief that smokeless tobacco has a protective effect on teeth and is a pain killer is widely prevalent in many parts of rural India. Use of tobacco products as a dentifrice among adolescents in India has recently been reported, highlighting the continuation of the misconception till date. [11]

Tobacco use is responsible for causing 8-9 lakh deaths annually in India with 7% of all deaths (for ages 30 and over) attributable to tobacco**.** Tobacco has been attributed as a risk factor for cardiovascular diseases, lung disorders, lower respiratory tract infections and severity of asthma attacks. Nearly 50% of cancers in males and 25% in females and more than 80% of all the oral cancers are attributable to tobacco use**.** [12]

TOBACCO CONTROL IN INDIA

According to Article 47 of the Constitution: State shall endeavour to bring about prohibition of the consumption, except for medicinal purposes, of intoxicating drinks, tobacco and drugs which are injurious to health. [11]

The Cigarettes Act 1975 was passed by Government of India with the intent for restrictions in relation to trade and commerce in, and production, supply and distribution of, cigarettes. The first statutory warning, "Cigarette smoking is injurious to health", was stipulated under Section 2 (m) and Section 3 of the Cigarettes Act, 1975. Other tobacco products notably bidi, gutka etc. were not covered by this act. [13]

In 2003India enacted "Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, (COTPA).The Act is applicable to all products containing tobacco in any form as detailed in the Schedule to the Act. Provisions under COTPA include specifications pertaining to prohibition of direct and indirect advertisement, promotion and sponsorship of cigarette and other tobacco products, bearing of the specified warning on each pack that should appear on not less than one of largest panel of package and nicotine and tar content should be mentioned on each package. [14]

Government of India ratified the WHO FCTC in February; 2004.The treaty entered into force next year and established a framework for an integrated multi-sectorial response to a grave public health problem. [12]

In 2006India's health warnings policy was drafted. [15] In 2008 final set of health warnings were released and were implemented on all cigarette packages on

May 31, 2009. Two warnings were rotated on cigarette packages and a separate warning was rotated on all smokeless tobacco products. [15]

India's Ministry of Health and Family Welfare proposed an amendment to the rules in 2011 which included four additional pictorial warnings to be used on tobacco and bidi packages, and 4 additional pictorial warnings for smokeless packages. On September 27, 2012 India proposed picture warnings that were required to cover 40% of the front of all cigarette packages. To match the international standards on October 15, 2014 Government proposed the use of larger warnings that cover 85% of the front and back of the pack. [15]

GLOBAL STATUS ON HEALTH WARNING LABELS

International status report 2014 provided ranking of 198 countries based on size of HWLs. Thailand is ranked number one with largest warnings (85%), Australia second with 82.5% size and plain packaging. Nepal (75%), Sri Lanka (60%) and Pakistan (40%) have overcome challenges and notified large pictorial warnings with rankings 4, 13 and 79 respectively. India is placed at 136th position (20%) in comparison to other countries. Countries ranked after 143 do not display pictorial health warnings at all. [16]

All tobacco products manufactured in Australia for domestic consumption were required to be sold in plain packs, effective from 2012. The legislation prohibits tobacco industry logos, brand imagery, colours and promotional text other than brand and product names in a standard colour, position, font style and size on retail packaging. According to this report, Ireland and New Zealand have started the legislation process to introduce plain/standardized packaging, and the United Kingdom is considering the introduction of such a requirement. [17]

IMPACT OF PICTORIAL HEALTH WARNING

Research to date highlights the importance of packaging as a communication medium with smokers and provides strong support for two key precedents set within the last decade: the use of pictures and the increasing size of warnings on the pack. [18] As a result of FCTC implementation, fifth-generation graphic warning labels began to spread, mostly replacing second-generation and fourth-generation HWLs. [8]

GHWLs were found to be effective in Iceland as sales of tobacco products fell by 3.5% and smoking prevalence dropped from 42.9% to 37.2% among men and from 37.0% to 35.2% among women. Similarly in Canada GHWLs, together with tax increases dropped per capita tobacco consumption in Canada by 8.1%. [8] As per the Global Adult Tobacco Survey-India (GATS 2010) covering the age group 15 years and above, about 62 to 71% of the tobacco users (smokers and chewers) have noticed health warnings out of which 29 to 38% thought of quitting because of the warning label. [19]

As per meta-analysis of experimental studies, pictorial health warnings attracted and held the attention better; generated strong cognitive and emotional and fear related reaction; negative attitude towards pack and smoking; generated quit intention. Pictorial health warnings are superior in perceived effectiveness outcomes like motivating not starting, reducing and quitting smoking. Pictorial warnings increased aversiveness. [5] A review suggested that cigarette pack warnings could be effective in promoting smoking cessation when warning are large, full-colour, and use graphic images. [20]

While some studies favors the effect of pictorial health warning labels over text only messages others reported conflicting findings. It was reported that graphic pictorial warnings result in poorer recall than less graphic or non-graphic warnings; do not increase youth's expectations to be non-smokers a year later, have no effect on beliefs about cancer or addiction among non-smoking adolescent boys. [5]

Health warning labels have been developed as a cost effective policy for

inhibiting marketing of tobacco products because all the cost of developing and printing of health warning labels is on tobacco industry itself. [10] The effectiveness is more compared to other consumer goods because packaging is not discarded immediately after it has been opened. [18] Impact of health warning labels tends to wear out with time if they are not changed periodically as the novelty is decreased. So to avoid the wear out of health warning labels there is periodic rotation is recommended. [18,20]

FUTURE PERSPECTIVES

Evolution of plain packaging is one of the effective measures which ensure better attention to health warning and recall among smokers. [17] Labelling policies and research should be focused on message content to a greater extent. To date, content has been relatively 'static' messages focused primarily on health effects. More sophisticated messages are possible, including linkages across individual messages, building narratives, and to link smokers with cessation services. [21]

Further research should analyze effectiveness of Graphic health warning labels with longitudinal studies comparing long-term changes in smoking rates before and after the introduction of GWLs to provide concrete evidence to combat the opposition from tobacco industry. Economic evaluation and cost-benefit analysis must also be conducted. As these regulatory developments unfold, research must keep pace ensuring that the evidence base evolves in parallel with regulatory practice. [21]

SUMMARY AND CONCLUSION

Tobacco use is the leading cause of preventable death and disease in the world. Tobacco product packaging can be used to communicate the health risks to consumers. Over the time there has been a shift from text warnings on side of packs to pictorial warnings on the front of pack in various sizes, colours, graphic etc. Pictorial health warning labels are evidence based policy whose effectiveness has been proved by countries adopting them. The combination of high exposure, nearly universal reach, and very low cost has made pictorial warnings on cigarette packs a core tobacco control strategy globally. Hence there is an urgent need for more effective HWLs to combat the growing menace of tobacco epidemic. More research and coordination from member countries at international level are required.

REFERENCES

1. WHO Report on the Global Tobacco Epidemic, 2013. Available from: www.who.int/tobacco/mpower/en/ [Last accessed: 23rd July 2016].
2. Peterson PE. Tobacco and Oral Health-the Role of the World Health Organization. Oral Health Prev Dent. 2003; 1(4): 309-315.
3. Proctor RN. The history of the discovery of the cigarette lung cancer link: evidentiary raditions, corporate denial, global toll. Tobacco Control 2012; 21:87-91.
4. WHO Framework Convention on Tobacco Control. World Health Organization 2003, updated reprint 2004, 2005. Available from: http://www.who.int/tobacco/framework/WHO_FCTC_english.pdf. [Last accessed: 23rd July 2016].
5. Noar SM, Hall MG, Francis DB et al. Pictorial cigarette pack warnings: a meta-analysis of experimental studies. Tob Control 2015; 0:1-14.
6. Marjorie Jacobs. From the first to the last ash: The History, Economics & Hazards of Tobacco. November 1995. Available from: health literacy. worlded.org/ docs/ tobacco/Tobacco.pdf [Last accessed: 17th April 2016]
7. Tobacco-Composition, effects, nicotine, chemical, health. Available at tobacco.yaia.com/composition.html [Last accessed on 18th August 2016]
8. Hiilamo H, Crosbie E, Glantz SA. The evolution of health warning labels on cigarette packs: the role of precedents, and tobacco industry strategies to block diffusion. Tob Control. 2014 January; 23(1):1-23.
9. The health consequences of smoking-50 years of progress. Available from:

http://www.surgeongeneral.gov/library/reports/50-years-of-progress/exec-summary.pdf. [Last accessed: 16th May 2016].

10. World health organization. WHO report on the global tobacco epidemic, 2014. Available from: www.who.int/tobacco/global_report/2014/en [Last accessed: 20th May 2016].
11. Reddy KS, Gupta PC. Report on tobacco control in India. New Delhi: Ministry of Health and Family Welfare, 2004.
12. National Tobacco Control Cell. Operational guidelines. The National Tobacco Control programme. New Delhi, India - Ministry of Health and Family Welfare. Available from: www.mohfw.nic.in/WriteReadData/l892s/About%20NTCC.pdf. [Last accessed: 23rd July 2016].
13. Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975. Available from: *www.lawzonline.com/bareacts/cigarettes.../cigarettes-regulation-of-production-supply*. [Last accessed: 16th May 2016].
14. The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003. Available from: www.hp.gov.in/dhsrhp/COTPA%20Act-2003.pdf [Last accessed: 16th May 2016].
15. Health Warnings | Tobacco Labelling Regulations. Available from *www.tobaccolabels.ca/healthwarningimages/* [Last accessed: 20th May 2016].
16. Canadian Cancer Society. Cigarette Package Health Warnings: International Status Report Available from: *www.tobaccofreekids.org/content/press_office/2014/2014_10_14_health_labels.pdf [*Last accessed: 14th July 2016].
17. Shankleman M, Sykes C, Mandeville K.L., Di Costa S, and Yarrow K. Standardised (plain) cigarette packaging increases attention to both text-based and graphical health warnings: experimental evidence. Public Health. 2015 Jan; 129(1): 37-42.
18. Hammond D. Health warning messages on tobacco products: a review. Tob Control.2011 Sep; 20(5):327-37.
19. Global Adult Tobacco Survey (GATS) - Ministry of Health & Family. Available from: *mohfw.nic.in/ Write ReadData/l892s/1455618937GATS%20India.pdf*[Last accessed: 14th May 2016].
20. Green AC, Kaai SC, Fong GT, Driezen P, Quah AC, Burhoo P. Investigating the Effectiveness of Pictorial Health Warnings in Mauritius: Findings from the ITC Mauritius Survey. Nicotine Tob Res. 2014 Sep; 16(9):1240-7.
21. Jung M. Implications of Graphic Cigarette Warning Labels on Smoking Behavior: An International Perspective J Cancer Prev. 2016 Mar; 21(1): 21–25.

How to cite this article: Sabbarwal B, Puranik MP, Sowmya KR. Health warning labels on tobacco products: a review. Int J Health Sci Res. 2017; 7(1):264-270.

****