

RESEARCH ARTICLE

Evaluation of the Knowledge and Perceptions with Regards to Pictorial Health Warnings on Tobacco Products among Tobacco Users Diagnosed with Head and Neck Carcinoma: a Study from the Kumaon Hills of India

Nirdosh Kumar Pant¹, Kailash Chandra Pandey¹, Irappa Madabhavi², Vinod Pandey^{1*}, Swaroop Revannasiddaiah¹

Abstract

Background: Tobacco products continue to be used in large quantities in India despite the mandatory inclusion of pictorial health warnings (PHWs) on all tobacco packaging. The circumstances as to how people could continue the use of tobacco to the point of developing head and neck cancer despite enhanced awareness about the ill effects of tobacco is the main focus of this study. **Materials and Methods:** This study concerned patients with least 5-years history of tobacco use, having been diagnosed with histopathologically proven malignancies of the hypopharynx, larynx, oropharynx and oral cavity presenting at the Government Medical College-Haldwani, Nainital, India. A total of 183 patients were eligible for inclusion during July 1 2013- June 30 2014. Of these, 59 patients used smoked tobacco exclusively, 22 patients used smokeless tobacco exclusively, and 102 patients used both forms of tobacco. Among users of smoked forms, 75.2% (n=121) were beedi users, and 24.8% (n=40) were cigarette users. Patients were asked direct questions as to whether they had noticed the presence of PHWs upon tobacco products. The reasons as to why PHWs were not effective in stopping the patients from tobacco use were investigated. **Results:** Of the 183 patients, 146 reported being aware about the presence of PHWs, and when they were asked reasons as to why they continued tobacco despite being aware of ill-effects, the commonest reason chosen (by 53.4%) was that patients had not regarded themselves as using tobacco heavy enough to cause cancer. Among the 36 patients who reported as being oblivious to the presence of PHWs on tobacco products, 63.9% reported that the products they used never displayed any PHWs, and 36.1% reported never having paid attention to the packaging. The awareness about PHWs was higher among cigarette smokers in comparison to beedi smokers (100% vs 76.1%, p=0.0002). **Conclusions:** Locally produced and marketed tobacco products such as beedis and oral tobacco often fail to display PHWs. The presence of PHWs without doubt enhances awareness about the carcinogenic risks of tobacco. However, enhanced awareness alone may not be enough, and as elucidated by this study, some persons continue to use tobacco to the point of developing malignancies. The need of the hour is the implementation of legal and economic sanctions discouraging the use of tobacco products.

Keywords: Pictorial health warnings - health warning labels - smoking health warning - head and neck cancer

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Introduction

The use of tobacco is a major cause of mortality and morbidity in this era. Tobacco use is widespread and ubiquitous in the world, with it being used both in smoked forms (cigarettes, beedis, etc) and non-smoked forms (guthka, pan-masala etc). Tobacco users have a proven higher risk of malignancies, as well as non-malignant serious disorders such as cardiovascular and pulmonary disorders (Zarocostas, 2011; Bhawna, 2013).

In an attempt to reduce the magnitude of tobacco use, various nations have adopted compulsory inclusion

of pictorial health warnings (PHWs) upon all tobacco products. The same have been implemented in India, and since 2009, have been mandated by law as compulsory by the Cigarettes and other tobacco products act (COTPA) (Tripathy et al., 2013). Warning pictures on tobacco products have two primary intentions - to encourage current tobacco users to quit using, and to discourage non-users from initiating tobacco use (Cantrell et al., 2013; Volchan et al., 2013).

Despite the implementation of pictorial warnings, there happens to be a persistent high prevalence of tobacco use. This study was one among the series of tobacco related

¹Department of Radiotherapy, Government Medical College-Haldwani, Haldwani, ²Department of Medical Oncology, Gujarat Cancer Research Institute, Ahmedabad, India *For correspondence: swarooptheone@gmail.com

studies conducted at the Swami Rama Cancer Hospital and Research institute during 2013-14. The hospital runs as part of the Government Medical College-Haldwani, Nainital and serves the patients from the Kumaon Hills of India. This study was designed with the intention to assess the perceptions and knowledge with regards to the pictorial health warnings in a specific population- that is a population of tobacco-users who are diagnosed with squamous cell carcinoma of the head and neck (SCCHN).

This study was conducted to assess the perceptions and knowledge with regards to the pictorial health warnings upon tobacco products in a specific population confined to tobacco-user patients diagnosed with squamous cell carcinoma of the head and neck (SCCHN). We expected to learn the impact of PHWs upon the perceptions regarding tobacco use and also the reasons as to how and why the patients continued tobacco use to the point of developing malignancy.

Materials and Methods

The study design employed was observational and cross-sectional in approach, in that the analysis was confined to a specific population, i.e. of patients diagnosed with SCCHN and having had a positive history of chronic tobacco use. For the time span between 1 July 2013- 30 June 2014, a total of 206 patients of SCCHN (with a positive history of tobacco use for more than 5-years) were registered at the Department of Radiotherapy, Swami Rama Cancer Hospital and Research Institute, Haldwani, Nainital, in India. After excluding patients with carcinoma of the nasopharynx, maxillary antrum, nasal cavity and also those patients with secondary in a neck node with unknown primary, a total of 183 patients of SCCHN were included for the study.

Of these 183 patients, male patients numbered 167 (91.3%) and female patients numbered 16 (8.7%). With regards to the subsite of SCCHN, the number of patients with carcinoma of the oral cavity, larynx, oropharynx and hypopharynx were 71 (38.8%), 49 (26.8%), 41 (22.4%) and 22 (12.1%), respectively. With regards to the form of tobacco use- 59 patients responded as being exclusive users of smoked tobacco, 22 patients responded as being exclusive users of smokeless tobacco, while 102 patients responded as being users of both smoked and smokeless forms of tobacco. Among the 161 users of smoked forms of tobacco, 121 (75.2%) responded as being beedi users, while 40 (24.8%) were cigarette users.

All the patients were asked a direct question as to whether they had noticed the presence of pictorial health warnings (PHW) over the tobacco products they have been using. Patients responding as having had noticed PHWs were further asked questions listed in 'questionnaire-A' (Table 1). Patients who responded as not having knowledge about the PHWs were asked questions listed in 'questionnaire-B' (Table 2).

Results

Of the 183 patients, 146 (79.8%) reported as being aware about the presence of PHWs, while 36 (20.2%)

reported as being oblivious to the presence of PHWs on tobacco products. Among patients reporting as having had noticed the presence of PHWs, 137 did report that PHWs were effective at educating people about the carcinogenic ability of tobacco products (Figure 1). Despite being aware of the ill effects of tobacco, patients were asked as to how they could continue tobacco use to the point of developing head and neck cancer. Majority (53.4%) reported as not having regarded themselves as using tobacco in quantities enough to cause cancer. A reason chosen by 15 patients (10.3%) was that they initiated use of tobacco before PHWs were being displayed upon the products. Also, nine patients (6.2%) did confess that they had not perceived the warnings seriously (Figure 2).

Majority of the respondents (56.2%; n=82) who did declare as having been aware of PHWs were of the opinion that they were unsure as to whether PHWs will be useful in reducing burden of tobacco induced cancers in the society. Only 28 patients (19.2%) felt that PHWs had the potential to reduce burden of tobacco induced cancers, and 36 (24.7%) of these patients were of the opinion that PHWs had no potential to reduce burden of tobacco induced cancers (Figure 3).

Among the 36 patients who declared as not having knowledge about PHWs, majority (n=29, 80.6%) were beedi users and the remaining were oral tobacco users (n=7, 19.4%). It was noteworthy that none among the 36

Table 1. Questionnaire Asked for Patients Responding as Having Noticed the Presence of PHWs Upon Tobacco Products they have Been using

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|--|
| 1. Were the pictorial warnings effectively educative of the carcinogenic ability of tobacco products in a serious manner? |
| Yes |
| No |
| 2. Why did you continue using tobacco despite being made aware of the ill effects via the pictorial warnings? Choose the most appropriate answer |
| Did not perceive the warnings seriously |
| Did not regard myself as a heavy tobacco user to get cancer |
| Had already used tobacco for years before PHWs began appearing |
| Did try to quit, but had not been successful |
| 3. Do you think pictorial warnings will be useful in reducing burden of tobacco induced cancers in the society to any measurable extent? |
| Yes |
| No |
| May be/ Don't know |

Table 2. Questionnaire Asked for Patients Responding as Having no Knowledge about PHWs

| |
|---|
| 1. What is the predominant form of tobacco you use? |
| Beedis |
| Cigarettes |
| Oral tobacco: Guthka/masala |
| 2. Pictorial health warnings are mandated by law upon all tobacco products, and are designed to be communicable to those with no literacy too. What is the most appropriate reason for you not having knowledge about them? |
| The products that I've been using have not displayed PHWs |
| Never paid attention to the packaging, and hence oblivious to their presence or absence |
| 3. Had there been the presence of pictorial health warnings upon the products that you've been using, would you be likely to have quit the use of tobacco? |
| Yes as it would have sensitized me to the risks |
| No I would not give up tobacco out of fear of cancer |
| Don't know |

patients were cigarette smokers (Figure 4). Among those 36 patients, 63.9% (n=23) reported that their products did not contain PHWs, while 36.1% (n=13) reported that they never paid attention to packaging and were hence oblivious to their presence or absence upon the tobacco products (Figure 5).

When patients who reported not having seen PHW asked as to whether they would have quit the use of tobacco in case they had seen PHWs, 66.7% (n=24) responded that they would not have given up tobacco just out of the fear of cancer.

Among the 161 users of smoked forms of tobacco, 121 (75.2%) responded as being beedi users, while 40 (24.8%) responded as being cigarette users. The awareness about PHWs was higher among cigarette smokers in comparison to beedi smokers. While 100% of cigarette smokers (n=40 of 40) were aware about PHWs, only 76.1% (n=92 of 121). This difference was statistically significant by the Fisher Exact Test (p=0.0002).

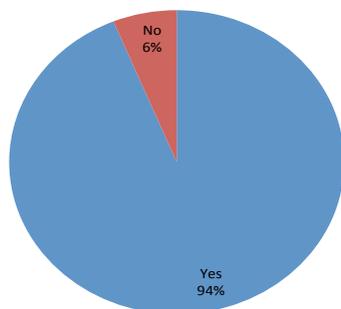


Figure 1. Opinion Regarding Whether Pictorial Warnings are Effectively Educative of the Carcinogenic Ability of Tobacco Products in a Serious Manner

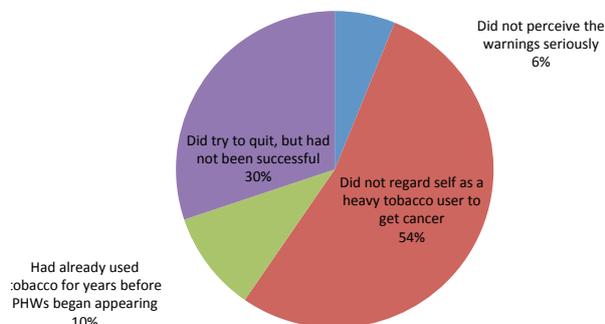


Figure 2. Reason for Continuing using Tobacco Despite Being Made Aware of the Ill Effects Via the Pictorial Warnings

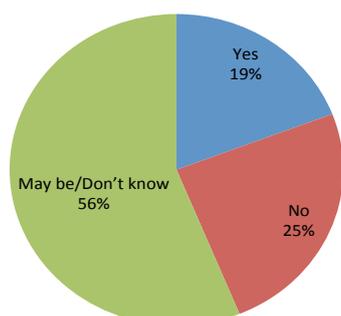


Figure 3. Opinion about Whether Pictorial Warnings will be Useful in Reducing Burden of Tobacco Induced Cancers in the Society?

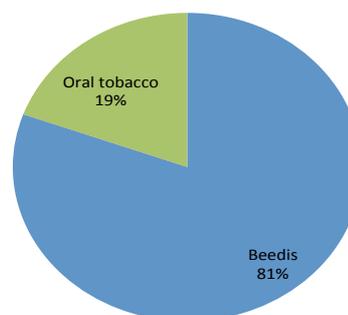


Figure 4. Predominant form of Tobacco use Among those with no Knowledge of PHWs?

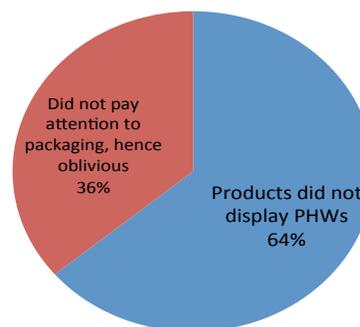


Figure 5. The Most Appropriate Reason for not having Knowledge about PHWs?

Discussion

Tobacco products are among the commonest form of substance abuse worldwide. Owing to the presence of the psychoactive substance nicotine, addiction ensues as a result of psychological and physical dependence. The problem of worldwide tobacco use is rather colossal, with an estimate of over a billion active tobacco users worldwide. About 1/3rd of the world adult population uses tobacco, and in India, 30% of the populations above 15 years of age are tobacco users (Rani et al., 2003; Balagopal et al., 2012).

The world health organization (WHO) estimates that tobacco causes 5.4 million deaths per year worldwide, and hence, is considered as the single most significant preventable cause of mortality and morbidity worldwide (WHO report, 2008). Tobacco is not only associated with malignancies, but also with serious non-cancerous illnesses which are life-threatening and life-limiting in their own rights. The causal and contributory association of tobacco towards serious conditions such as coronary heart disease, atherosclerosis, peripheral vascular diseases, chronic bronchitis, emphysema, etc is established beyond doubt (Apslund, 2003; Henley et al., 2004; Sharma et al., 2011; Talikka et al., 2012; Al-Attas et al., 2014).

Given the alarming risks associated with tobacco owing to direct health implications upon individuals' family and society at large, there have been various efforts by governmental and non-governmental agencies so as to reduce, or discourage the use of tobacco. It was, and continues to be often assumed that lack of awareness about the ill-effects of tobacco is an important cause behind the extensive prevalence of tobacco use in the society. One of the most visible, and presumably a very effective means of enhancing awareness about the ill effects of tobacco

has been the inclusion of PHWs upon tobacco products' packaging. In fact, PHWs are one of the six MPOWER strategies devised by the WHO in order to combat tobacco use (Kaleta et al., 2009; Spires et al., 2014).

The WHO adopted the Framework Convention on Tobacco Control (FCTC) in the year 2003, and this provides a set of guidelines for controlling the demand and supply of tobacco. The 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" (WHO, 2003; Collishaw, 2010; Ullrich et al., 2014). In India, the FCTC was accepted and ratified in 2004. In India, earlier, the Cigarettes and other tobacco products - Prohibition of advertisement and regulation of trade and commerce, production, supply and distribution act (COTPA) was formulated by the ministry of law and justice in 2003, and came into force from May 1 2004. However, undue delays ensued and PHWs upon tobacco products' packaging were mandated that from 1 June 2009 onwards, all tobacco products which are being retailed in India, including those being imported, have to display PHWs on their packages (Hammond et al., 2006; Aruna et al., 2010).

PHWs serve as a vivid and memorable way to educate users, and potential users about the devastating potential of tobacco. They are by their pictorial design able to communicate irrespective of language barrier or irrespective of the educational status of the intended audience (Süssensbach et al., 2013). The effectiveness of the PHWs increases with factors such as size of the PHW, percentage of the packaging displaying the PHW, position of the PHW upon the packaging, and the color of the PHW. Given the importance of the PHW size, various countries have made it mandatory that at least a pre-defined percentage of the packaging must be covered by the PHW (Bansal-Travers et al., 2011; Mays et al., 2014). In Australia, tobacco products' packaging must contain PHW which covers 90% of the front, and 30% of the reverse side of the packaging. Canada and Thailand have made it mandatory that 50% of the front and reverse side of the packaging must display PHW. Brazil as a matter of fact has made it mandatory that 100% of the front, as well as the reverse side of the packaging must be covered by the PHW (Cunningham, 2009; Fong et al., 2009; Gigliotti et al., 2014).

The effectiveness of the PHWs in terms of making smokers feel smoking as 'less glamorous and attractive' has been proven in many studies. In a study from Canada, 90% of the participants agreed that PHWs were effective means of making smokers feel smoking as a less attractive habit (Hitchman et al., 2011). This was reflected in the results of our study too, where in 94% of cancer patients did report that PHWs were effective in educating about the ill-effects of tobacco.

However, there are two main reasons as to why tobacco products continue to be used despite all above legislations. Firstly, there are many locally produced and marketed items, such as beedis often operate in ignorance or defiance of the requirements of PHWs. Cigarette users were more likely to be aware of the presence of PHWs in comparison to those using beedis. This is likely due to the

fact that cigarettes are produced by licensed factories and are regulated by law. Beedis on the other hand are more likely to be prepared in small scale/home based industries which may act outside of the legal requirements (Yen et al., 2000; Sharma et al., 2013).

The other major reason is that mere enhancement of awareness about risks with tobacco use will not be enough to deter patients with strong addictions to quit using tobacco. This is possible because of ego defense mechanisms within the psychological makeup of the patients. Ego defense mechanisms are psychological reactions within the thought flow process that people use to subconsciously avoid experiencing the reality of their situations. They serve the purpose of maintaining a self-image despite obvious cause for emotional/psychological distress. Though defense mechanisms serve to help individuals to cope up with routine situations they are pathological if they are used to ignore the warning signs of something known to be harmful, or wrong (Bell, 1965; Abrams, 1968; Kessels et al., 2014).

There are various defense mechanisms described- namely rationalization, intellectualization, minimization, denial, suppression, hostility, avoidance, etc. These are known to operate outside of the conscious awareness of a person (Sherman et al., 2000; Wilson, 2002). The above constitutes what could be called as a 'psychological immune system', which helps in maintaining a positive self-image despite negative reactions (C Ruiter, 2005).

Thus, these defense mechanisms serve mainly to get rid of fear, and not of the threat. In presence of strong defense mechanisms, mere awareness programs such as PHWs cannot be expected to be of major significance. More stringent measures- political, legal, and economic measures must be taken.

In conclusion, PHWs are in general present upon factory manufactured tobacco products, and occasional local made tobacco products do not contain PHWs. PHWs are generally effective in educating tobacco users regarding the associated risks of malignancies. However, PHWs are in themselves not enough to curtail the tobacco use in the society, since tobacco users' psychological defense mechanisms operate to negate the effects of the PHWs. is a dire need for effective anti-tobacco legislations, and for the placement of legal restrictions against the use of, and the sale of tobacco products. Strict laws discouraging the use of tobacco, and imposing heavy taxation upon tobacco products may help reduce the use of tobacco products in the society. It has after-all been observed that (WHO report, 1997) for every 10% increase in the cost of tobacco will reduce the consumption by 2-8%.

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