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## Tobacco- a deadly poison

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### ABSTRACT

Tobacco use is harmful to all human biological systems, including the oral cavity. It is a major contributor to oral cancer and periodontal diseases and is a significant risk factor for failed dental implant therapy. If the current trends of tobacco usage continue, by 2030 tobacco will kill more than 8 million people worldwide each year, with 80% of these premature deaths among people living in low and middle-income countries. Nearly 20% of the world's adult population smokes cigarettes. Almost 20% of the world's adult male smokers live in high income countries, while over 80% are in low and middle income countries. The World health Organization has introduced a new measure known as MPOWER measures which are intended to assist in the country-level implementation of effective interventions to reduce the demand for tobacco.

**Keywords:** Tobacco, Smoking, MPOWER, WHO

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### Introduction

Globally, tobacco use remains the leading preventable risk factor for premature morbidity and mortality.[1] Tobacco use is harmful to all human biological systems, including the oral cavity. It is a major contributor to oral cancer and periodontal diseases and is a significant risk factor for failed dental implant therapy[2-4]. Other effects relevant to dentistry are staining and discolouration of teeth and dental restorations, as well as congenital defects such as oral clefts if expectant mothers smoke[4-6].

Conversely, tobacco use cessation has positive immediate and long term effects; smell and taste return to normal within one month after cessation, while the risk for oral cancer, for example, decreases to nearly the same level as for never users during the following years[2,4]. In 2011, tobacco use killed almost 6 million people, with nearly 80% of these deaths occurring in low- and middle-income countries. If current trends continue, by 2030 tobacco will kill more than 8 million people worldwide each year, with 80% of these premature deaths among people living in low- and middle-income countries.[1] Over the course of the 21st century, tobacco use could kill a billion people or more unless urgent action is taken.[1] Tobacco use in any form is dangerous and is the single most preventable cause of death. Tobacco use is a major risk factor for death from heart attacks and strokes. Worldwide, smoking causes almost 80% of male and nearly 50% of female lung cancer deaths. Smoking increases the risk of tuberculosis (TB) infection, and 40 million smokers with TB are expected to die between 2010 and 2050. By the year 2030, eight million people will die annually from tobacco use.

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Tobacco caused 100 million deaths during the twentieth century, and if current trends continue, approximately 1 billion people will die during the twenty-first century because of tobacco use. Smoking during pregnancy is dangerous to the mother and can cause growth retardation, low birth weight, and possibly death of the fetus. The harm caused by today's tobacco use will extend for decades into the future, which is made more tragic by the fact that the negative effects of tobacco are entirely preventable. Quitting tobacco use greatly reduces illness by immediately providing short-term benefits and lowering the risk of all diseases caused by smoking.[1]

Secondhand smoke, or "forced smoking," kills even those people who have consciously chosen not to smoke. Secondhand smoke, also known as environmental tobacco smoke, is a mixture of side stream smoke from the burning tip of a cigarette, cigar, or pipe, and mainstream smoke, which smokers exhale. Side stream smoke is the major component of secondhand smoke, and it contains higher concentrations of carcinogens than mainstream smoke. An estimated 600,000 individuals die annually from exposure to secondhand smoke, and the majority of secondhand smoke deaths are among women and children. Breathing secondhand smoke causes immediate harm to the cardiovascular and respiratory systems. Long-term exposure to secondhand smoke can even cause lung cancer. Expectant mothers, fetuses, and infants exposed to secondhand smoke are at particularly high risk of adverse health consequences. Sudden Infant Death Syndrome (SIDS), respiratory issues, and behavioral and learning problems can result when infants and children are exposed to secondhand smoke. Exposure to secondhand smoke remains one of the world's most critical environmental health hazards, and is more harmful than all other indoor air contaminants.[1]

#### **Global use of Tobacco**

Tobacco is used in many different ways around the world, but the global predominance is the use of manufactured cigarettes, which account for 96% of total worldwide sales, and hence involves big business rather than small, local, rural enterprises. The next largest components are the smoking of bidis in South-East Asia, the chewing of tobacco in India, the smoking of kreteks in Indonesia, and the use of moist snuff, which originated in Sweden but is now becoming global.[7] India is the fourth-largest consumer of tobacco in the world [8] and the third-largest producer of tobacco after China and Brazil.[9,10] There are about 250 million tobacco users in India who account for about 19% of the world's total 1.3 billion tobacco users.[11] India's tobacco problem is more complex than probably that of any other

country in the world, with a large consequential burden of tobacco related disease and death.[12] In India, tobacco is used in a wide variety of ways: smoking, chewing, applying, sucking, gargling, etc. A wide range of tobacco products are available in the market for the different forms of tobacco. Some of these products are industrially manufactured on a large scale, some locally on a small scale, some may be prepared by a vendor and some may be prepared by the user himself or herself. Newer imperishable forms of tobacco with areca nut have become very popular and the industry has grown phenomenally within a few decades. Beedi smoking is the most popular form of smoking, while cigarettes form a major part of the tobacco industry.[13]

Nearly 20% of the world's adult population smokes cigarettes. Smokers consumed nearly 5.9 trillion cigarettes in 2009, representing a 13% increase in cigarette consumption in the past decade. Cigarette consumption historically has been highest in high-income countries, but because of targeted marketing, increased social acceptability, continued economic development, and population increases, consumption is expected to increase in low and middle-income countries. Cigarette consumption in Western Europe dropped by 26% between 1990 and 2009 but increased in the Middle East and Africa by 57% during the same period. This change has occurred as people in high-income countries increasingly understand the dangers of smoking and governments continue to implement tobacco control policy and legislation. Globally, the increase in cigarette consumption in low and middle-income countries is significant enough to offset the decrease in high-income countries. Cigarette consumption is responsible for a significant disease burden. As consumption rates continue to increase in low and middle-income countries, these countries will experience a disproportionate amount of Tobacco-related illness and death-particularly China, as Chinese men smoke a third of the World's cigarettes. While global smoking prevalence is flat or decreasing, the total number of smokers worldwide continues to increase simply due to population growth. While almost 6 trillion cigarettes are consumed annually, the pattern of nicotine consumption may shift in the future as people seek alternative nicotine delivery systems. About 800 million adult men worldwide smoke cigarettes. Almost 20% of the world's adult male smokers live in high income countries, while over 80% are in low and middle income countries. Nearly 200 million adult women worldwide smoke cigarettes.[1]

Smokeless tobacco accounts for a significant and growing portion of global tobacco use, especially in South Asia. Over 25 distinct types of smokeless

tobacco products are used worldwide, including both commercialized and local or homegrown products, used orally and nasally. Some products combine tobacco with substantial amounts of chemical additives and other plant material that may confer additional risk to the user. Moreover, smokeless tobacco products contain many of the toxins and carcinogens found in cigarettes, and thus result in many of the same diseases caused by smoking. In addition, smokeless tobacco use increases periodontal disease, tooth loss, and precancerous mouth lesions. Global patterns of smokeless tobacco use vary widely. The import and sale of smokeless tobacco Products are banned in 40 countries and areas. In some countries, like Finland and Egypt, men use smokeless tobacco products in much greater numbers than women because such products are perceived as masculine; in countries like South Africa, Thailand, and Bangladesh, women use smokeless tobacco products more than men because they are seen as a discreet way to consume tobacco. Women from most parts of India report smokeless tobacco use and the prevalence varies between 15% and 60%.[14] In South India especially in Kerala and Tamil Nadu the common forms of chewing tobacco are Vadakka, Japponam and Vasana Pukayila. In Karnataka, Nipponi tobacco which has been used for manufacturing bidis is chewed by men and the powdered tobacco stem of Virginia tobacco is used by women. Khaini(Roasted tobacco with slaked lime) is commonly used by people in Central India. Mishri(Burnt tobacco ash) is used for cleaning teeth and for chewing in the states of Maharashtra and Goa. In North West parts of India, snuff is mixed with cotton seed oil, rolled into a ball and kept in the floor of the mouth or undersurface of the tongue. All these different types of smokeless tobacco are well known in producing lesions in various sites of the oral cavity. [15]

There are two main ways to reduce tobacco use: prevent youth from starting to use tobacco and encourage and help users to quit. To make a significant reduction in global tobacco related deaths, Current smokers must quit. Unless they do, tobacco deaths will rise dramatically over the next 40 years, irrespective of whether youth uptake is reduced. Some improvement of health is seen soon after quitting, and much of the harm can be eliminated over time, even for lifelong smokers. General tobacco control policies, such as disseminating health information, mandating smoke-free areas, and implementing tax increases, can encourage smokers to quit. Most ex-smokers quit successfully on their own (“cold turkey”), but an increasing number of programs and aids are available to help smokers stop, some more effective than others. Nicotine replacement therapies (gum, patch, and

inhaler) and pharmacologic agents such as bupropion, varenicline, and newer agents such as cystisine are now available in many countries. Some jurisdictions, such as Hong Kong, have even introduced quitting services for teens. Many people change their health behaviors easily, while others struggle through a difficult cycle of addiction.

Communication technologies—such as telephone quit lines, text messaging, online counseling, and social media—offer support. Psychological and behavioral therapies, particularly behavior modification, but also less-tested modalities such as hypnosis, meditation, and acupuncture, also have been employed.[7]

### WHO- GLOBAL MEASURE TO CURB TOBACCO USE

The WHO Framework Convention on Tobacco Control (WHO FCTC) and its guidelines provide the foundation for countries to implement and manage tobacco control. To help make this a reality, WHO introduced the MPOWER measures. These measures are intended to assist in the country-level implementation of effective interventions to reduce the demand for tobacco, contained in the WHO FCTC.

#### 1. Monitor tobacco use and prevention policies

Population-based national and international monitoring data are necessary to effectively plan and implement the WHO Framework Convention on Tobacco Control (WHO FCTC). Only through accurate measurement can problems caused by tobacco be understood and interventions be effectively managed and improved. Monitoring can provide policy-makers and public health authorities with essential information on:

- The extent of the tobacco epidemic in a country
- Subgroups in need of tailored policies and programmes
- Public awareness of the epidemic and attitudes towards tobacco control
- Changes in tobacco use following implementation of policies and programmes
- Government enforcement and societal compliance with tobacco control policies, including tax collection and tax evasion, smoke-free places, and advertising and marketing bans
- Tobacco industry practices that may increase tobacco use or hinder implementation of tobacco control policies and programmes

Monitoring is also essential to evaluate the effectiveness of MPOWER implementation. Currently, monitoring systems are weak in many low- and middle-income countries, where tobacco use is rising fastest.

## 2. Protect people from exposure to second-hand tobacco smoke

The elimination of indoor smoking through the creation of 100% smoke-free environments is the only effective science-based measure to protect the population from the harmful effects of exposure to SHS, according to Article 8 of the WHO Framework Convention on Tobacco Control (WHO FCTC) and its guidelines.

### Underlying considerations - international human rights instruments

Given the dangers of SHS, the duty to protect from tobacco smoke is grounded in fundamental human rights as outlined in the following international legal instruments:

- Constitution of the World Health Organization
- Convention on the Rights of the Child
- Convention on the Elimination of all Forms of Discrimination Against Women

The right to life and the right to the highest attainable standard of health is also incorporated into the preamble of the WHO FCTC and recognized in the constitutions of many nations.

Implementation of Article 8 of the WHO FCTC should be guided by the following principles, which are contained in the WHO FCTC Article 8 guidelines:

- Effective protection is through the elimination of tobacco smoke. Ventilation has been shown to be ineffective.
- Protection should be universal.
- Protection needs to be legislated.
- Adequate resources for protection need to be planned.
- Support of civil society is important.
- Monitoring and evaluation are critical.
- Protection measures need to be updated regularly.

### Benefits and outcomes of creating 100% smoke-free environments

- Implementation of smoke-free policies leads to a substantial decline in SHS exposure.
- Implementation of smoke-free legislation causes a decline in heart disease morbidity.

- Implementation of smoke-free legislation decreases respiratory symptoms in workers.
- Smoke-free workplaces reduce cigarette consumption among continuing smokers and lead to increased successful cessation among workers.
- Smoke-free policies do not cause a decline in business activity of the restaurant or bar industry.
- Smoke-free policies reduce tobacco youth among youth.

There is extensive evidence from a number of countries that comprehensive smoke-free laws prompt people – and particularly parents – to make their homes smoke-free. In New Zealand, reported exposure to second-hand smoke in the home nearly halved in the three years after smoke-free legislation was introduced, and in Scotland, children's exposure to second-hand smoke fell by nearly 40% after smoke-free legislation came into force.[16]

### 3. Offer help to quit tobacco use

Various tobacco control policies formulated has created an environment to help the users in quitting. Treatment of tobacco dependence is a key component of any comprehensive tobacco control strategy as indicated in Article 14 of the WHO Framework Convention on Tobacco Control (WHO FCTC). Cessation support and medication can increase the likelihood that a smoker will quit successfully.

Treatment includes various methods, but programmes should include:

- Tobacco cessation advice incorporated into primary and routine health-care services
- Easily accessible and free telephone help lines
- Access to free or low-cost cessation medicines [1]

### 4. Warn about the dangers of tobacco Tobacco Health Warnings

It is proven that warnings on packaging are an inexpensive and powerful way to show the truth about tobacco use. Warnings that include images of the harm that tobacco causes are particularly effective at communicating risk and motivating behavioural changes, such as quitting or reducing tobacco consumption. Picture warnings convey a clear and immediate message, even to people who cannot read.

They reduce the overall attractiveness of tobacco packages. This is an important function for a product whose new users are typically young and image-and brand-conscious.

Health warnings on tobacco packages that combine text and pictures are one of the most cost-effective ways to increase public awareness of the serious health risks of tobacco use and to reduce tobacco consumption.

Tobacco package health warnings that include images are an essential part of any effective tobacco control strategy because:

- when combined with text they have been shown to be particularly effective in communicating risk and motivating behavioural change
- they are critical in communicating health risks to the large number of people worldwide who cannot read
- they detract from the overall attractiveness of tobacco packaging and thus act as a deterrent to new users, who are often young and image-and brand-conscious
- the cost to governments is minimal

Best practice health warning labels should:

- Describe the harmful effect of tobacco use
- Be large, clear, visible, and legible, covering 50% or more of principal pack display areas (both front and back) and in no case less than 30%
- Rotate periodically so that they continue to attract the attention of the public
- Appear in the country's principal language(s)
- Include graphic pictures
- Be approved by the competent national authority

The evidence for potential impact of pictorial warnings have come from focus groups and interview studies, experimental exposure studies [17] and population-based surveys among Canadian smokers, [18-20] Australian youth,[17] Dutch smokers [17] and from several countries of the 20-country ITC Project: prospective cohort surveys of adult smokers in Australia, Canada and the United States of America (USA),[18,20-23] smokers in New Zealand,[24] smokers in Canada and Mexico,[25] smokers [26] and youth [27] in Malaysia and Thailand. In addition to the ITC

surveys, there are other research studies that support the use of pictorial warnings, notably in the European Union. In a study conducted in India it was found that people could hardly understand the pictorial warnings on cigarette packs.[28]

Taken as a whole, the research on pictorial warnings show that they are: (i) more likely to be noticed than text-only warning labels;[18,19,21–23,25–27] (ii) more effective for educating smokers about the health risks of smoking and for increasing smokers' thoughts about the health risks;[22,25] and (iii) associated with increased motivation to quit smoking.[18,21–24]

### Media Campaigns

There a number of strategies that can be used to educate the public about the harms of tobacco. Among these are campaigns to counter the pro-tobacco messages put forth by the tobacco industry. Often known as "counter-advertising", these campaigns are typically disseminated via mass media, including print and broadcast media, billboards and other means to reach large groups within a population. Mass-media counter-advertising campaigns have been consistently found to reduce overall tobacco consumption. Mass-media campaigns are a cost-effective way to educate large population groups about the full extent of the risks of tobacco use and exposure to second-hand smoke. Media campaigns can also motivate and inform people on how to quit. Well-executed campaigns can also increase public support for key policy changes such as smoke-free public places.[16]

The government of India began screening two anti-tobacco advertisements, tagged "Sponge" and "Mukesh", in movie theatres and on television from 2nd October 2012 onwards.[29] As per the COTPA rules, the anti-tobacco health spots and disclaimers are being provided by the Ministry of Health and Family Welfare.[30] The ads were shown at the beginning and during the interval of films in theatres.[31] It is also mandatory for theatres to display a disclaimer that at the bottom right-hand corner of the screen, whenever smoking scenes are depicted in the movie.[32] The ads were aimed at creating awareness about the amount of tobacco tar produced by cigarettes and beedis and to feature a case study on ill effects of tobacco-use. The ads have been screened in 16 different languages.[31] The "Sponge" and "Mukesh" ads were replaced by new ads, titled "Child" and "Dhuan", from 2 October 2013.

The ads were developed by the World Lung Foundation (WLF) to warn smokers about the health costs of smoking and of the penalties to be faced by violating the smoke free law. "Child" focuses on the health risks of smoking and secondhand smoke, while "Dhuan" especially models the behavior expected of business managers, advocates, enforcement officials, smokers and non-smokers.[33-35]

### 5. Enforce bans on tobacco advertising, promotion and sponsorship

The tobacco industry spends tens of billions of US dollars worldwide each year on marketing through advertising, promotion and sponsorship. Advertising, promotion and sponsorship normalize tobacco, making it seem like any other consumer product. This increases its social acceptability and hampers efforts to educate people about the hazards of tobacco use. Marketing falsely associates tobacco with desirable qualities such as energy, glamour and sex appeal. It also strengthens the tobacco industry's influence over media, sporting and entertainment businesses. In countries where partial bans prohibit direct advertising and promotion of tobacco products in traditional media, tobacco companies frequently employ indirect marketing tactics to circumvent the restrictions. Tactics include:

- sport and music event sponsorship
- pack designs and displays
- branded merchandise
- product placement
- alleged corporate-social responsibility activities
- new media technology campaigns

Comprehensive bans on direct and indirect advertising, promotion and sponsorship protect people – particularly youth – from industry marketing tactics and can substantially reduce tobacco consumption. Comprehensive bans significantly reduce the industry's ability to market to young people who have not started using tobacco and to adult tobacco users who want to quit.

Comprehensive bans can be achieved by following the international best practice standards outlined in the Guidelines for implementation of Article 13 of the WHO Framework Convention on Tobacco Control (WHO FCTC). A comprehensive ban on all advertising and promotion reduces tobacco consumption by about 7%, independent of other interventions. Some countries have seen consumption drop by as much as 16%. In developing countries like India, the Cable television network (Regulation) Amendment Bill which came into force in 8th September 2000 completely prohibits cigarette and alcohol advertisements.[36]

### 6. Raise taxes on tobacco

Increasing the retail price of tobacco products through higher taxes is the single most effective way to decrease consumption and encourage tobacco users to quit.

When tobacco prices increase:

- Fewer people use tobacco
- People who continue to use tobacco, consume less
- People who have quit are less likely to start again
- The young are less likely to start using tobacco

Tobacco taxes are generally well accepted and even supported by many tobacco users – because most people understand that tobacco is harmful. In high-income countries, a 10% increase in tobacco prices will reduce consumption by about 4%. The effect of higher prices on reducing consumption is likely to be greater in low and middle-income countries. Tobacco taxes are particularly effective in preventing or reducing tobacco use among the young and the poor. People in these groups are more affected by price increases. Tax increases help the poor to stop using tobacco. This allows tobacco users who quit to reallocate their money to essential goods, including food, shelter, education and health-care. Higher taxes also help poor families improve productivity and wage-earning capacity by decreasing tobacco-related illness and death.[16]

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