



## **Multifactorial Approach to The Management and Control of Tobacco Usage – A Public Health Policy Update**

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### **ABSTRACT**

*Smoking is estimated to cause about 480,000 deaths each year in the United States of America. Tobacco contains tar, carbon monoxide, and chemicals such as DDT (insecticide), arsenic, and formaldehyde (a gas used to protect dead animals). Tar and carbon monoxide cause serious respiratory problems. Smoking can reduce lifespan by up to 14 years. Exposure to harmful compounds in cigarette smoke determines the potential harm of exposure, and most adult smokers smoke several cigarettes a day for decades. Repeated inhalation of cigarettes can cause short-term and long-term damage to important organs. Possible approaches to reducing smoking contamination are to reduce tobacco consumption and use low-risk products such as drugs, nicotine replacement therapy, and reduced exposure package inserts (PREP) instead of tobacco. Includes doing. In this article, we look into the ill effects of smoking and various ways to prevention.*

Keywords: Cigarette smoking, cancer, COPD, Cardiovascular disease, Nicotine replacement therapy.

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### **INTRODUCTION**

Tobacco smoking is still one of the leading preventable causes of illness and death around the world [1]. Cigarette smoke contains more than 7,000 chemical compounds, inhaling cigarette smoke exposes the cigarette smoker to these numerous toxins, which include the various tobacco constituents and the products of pyrolysis [2].

Smoking has long-term health effects, such as lung cancer, and short-term health problems, such as heart disease. The negative immediate and short-term health consequences of smoking are less fatal than its negative long-term health effects. Smokers may notice the short-term negative health effects of smoking immediately or shortly after they start smoking. As a result, the health effects of smoking begin at or near the age of onset, usually in adolescence. Pregnancy (for mother and fetus) and the months after birth (for infants) are particularly vulnerable times in life; Therefore, this stage of life is treated separately.

Besides cigarettes, there are several other forms of tobacco. Some people smoke tobacco in cigars and water pipes (hookahs). These forms of tobacco also contain harmful chemicals and nicotine. Some cigars contain as much tobacco as an entire pack of cigarettes. Smokeless tobacco, such as chewing tobacco and snuff, is also bad for your health. Smokeless tobacco can cause certain cancers, including oral cancer. It also increases your risk of getting heart disease, gum disease, and oral lesions.

### **IMPACT OF SMOKING ON HEALTH**

Cigarette smoking produces short-term impact & Long-term impacts on health and affects the major organs predominantly.

#### **IMMEDIATE ADVERSE HEALTH EFFECTS**

Immediate adverse health effects include increased oxidative stress; depletion of some bioavailable antioxidants, increased inflammation, altered immune status, altered lipid profile; poorer self-rated health; respiratory symptoms, including cough, sputum production, wheezing, shortness of breath, and nicotine dependence. The impact of smoking on such short-term physiological outcomes alters the general health status of smokers, thereby leaving them vulnerable to various adverse health effects, such as the development of acute illness, respiratory symptoms, and reduced healing. wound.

A single puff of a cigarette exposes the smoker to more than 1015 free radicals in the gas phase and additional radicals and oxidants in the tar phase [3]. The biological impact of oxidative stress caused by smoking cigarettes causes injury to DNA, proteins, and lipids. This oxidative damage, experienced over long periods, is one pathway contributing to smoking-caused disease and death [4].

Cigarette smoking causes depletion of antioxidant micronutrients, leading smokers to have lower circulating concentrations of these antioxidant micronutrients than non-smokers. The direct immediate result of the smoker's lower concentrations of antioxidant micronutrients such as vitamin C is to reduce the smoker's antioxidant defenses, and thus the smoker's cells throughout the body are more prone to the damaging effects of oxidative stress. Oxidative stress is hypothesized to be associated with premature aging and a greater risk of disease (5).

Another measure of smokers' poorer health is the chronically higher level of inflammatory response experienced by smokers compared to non-smokers. Chronic inflammation is hypothesized to play a role in the pathogenesis of numerous chronic diseases (6).

The 2014 Surgeon General's report was the first report of the Surgeon General to review thoroughly the contribution of cigarette smoking to impaired immune status. Cigarette smoking was found to adversely impact the two major immune pathways, innate immunity, and adaptive immunity. The impact of the adverse effects on immune status makes smokers more susceptible to disease, which in turn contributes to the etiology of acute infectious and chronic diseases.

Compared with non-smokers, cigarette smokers have significantly higher serum cholesterol, triglyceride, and low-density lipoprotein (LDL) levels and lower high-density lipoprotein (HDL) levels (7). Thus, it increases the chances of cardiovascular diseases.

#### **INTERMEDIATE EFFECT OF SMOKING**

Tobacco smoking causes a variety of adverse health effects classified as 'moderate', including increased time off work, increased use of health services, subclinical atherosclerosis, impaired function and lung development, increased risk of lung infections, diabetes, periodontitis, asthma exacerbations in adults, subclinical organ damage, and adverse surgical outcomes.

#### **LONG TERM EFFECT OF SMOKING**

Smoking is often associated with a range of long-term adverse health effects causing suffering, impaired quality of life, and death. Smoking is causally associated with 12 different malignancies and is responsible for approximately 30% of all cancer deaths in the United States[8]. Smoking has been known for many years to cause cancers of the lung, oral cavity, larynx, esophagus, bladder, pancreas, kidney, cervix, and stomach, and acute myeloid leukemia. Smoking is associated with many clinical cardiovascular diseases, including coronary heart disease, stroke, and abdominal aortic aneurysm. Coronary heart disease is one of the leading causes of death in the United States and most high-income countries. As with coronary heart disease, the effects of smoking are greater in relatively younger people. The process of inhaling tobacco smoke exposes the respiratory system of smokers directly to high doses of tobacco toxins, which in turn leads to lung cancer. It is estimated that smoking caused 7.5 million cases of common COPD in the United States in 2009 [9]. Smoking increases your chances of having a stroke 24 times [10]. May cause brain damage and sometimes death. According to the NIH (National Institutes of Health), smoking adversely affects bone density and makes bones weaker and more brittle [11]. The incidence of hip fractures is increasing. It also increases the risk of vision problems such as glaucoma, cataracts and also adversely affects bones and joints. Cigarette smoking is associated with a decreased likelihood of pregnancy because of smoking's adverse effects on the female and the male reproductive systems. It leads to erectile dysfunction in males and decreases the quality of sperm.

#### **PREGNANCY COMPLICATIONS**

Maternal smoking during pregnancy reduces the likelihood of a full-term pregnancy with optimal fetal development. Smoking in pregnant women negatively affects pregnancy by increasing the risk of ectopic pregnancy, pregnancy complications such as premature rupture of membranes, placenta previa, placental abruption. In addition, smoking in pregnant women causes premature labor and shortens gestational age. Maternal smoking during pregnancy and second-hand smoke exposure during infancy are causally associated with many adverse health outcomes. This not only leaves exposed infants prone to short- and long-term health risks but also can result in death.

#### **SECOND-HAND SMOKING**

Second-hand smoke exposure is associated with adverse health effects. It has also been found that non-smokers exposed to secondhand smoke have reduced immunity. Children exposed to secondhand smoke

are at increased risk of ear infections, colds, pneumonia, bronchitis, and, worse, asthma. Mothers who breathe secondhand smoke during pregnancy are more likely to give birth prematurely and have low birth weight babies.

### **SMOKELESS TOBACCO**

Smokeless tobacco is better known as spit, chew, chew, and dip tobacco. The user puts the tobacco leaf in his mouth and sucks it instead of holding it in the cigarette (12). Smokeless tobacco in the form of snuff or chew tobacco:

- Snuff is finer-grained tobacco, sometimes packaged in bags that look like teabags.
- Chewing tobacco consists of raw tobacco leaves that are twisted or chopped and divided into paper packets or small cans.

In general, people who snuff or chew get the same amount of nicotine as regular smokers. They were also exposed to more than 25 chemicals known to cause cancer. The most harmful carcinogens in smokeless tobacco are tobacco-specific nitrosamines (TSNAs). TSNA levels vary by product, but the higher the level, the greater the cancer risk (13).

### **LEGISLATION AND ENFORCEMENT**

#### **WHO FRAMEWORK CONVENTION ON TOBACCO CONTROL**

Legislation is recognized as a key driver of significant progress in tobacco control. The WHO Framework Convention on Tobacco Control (WHO FCTC) is a global public health treaty developed as a global response to the globalization of the tobacco pandemic, to reduce the burden of disease and tobacco-related death. It was adopted by the World Health Assembly in May 2003 and India was the eighth country to ratify it on February 5, 2004. The CCSA adopts evidence-based approaches that have been adopted. proven to be effective in reducing tobacco consumption. It does not enact legislation but provides guidelines for various national and international measures to encourage smokers to quit and prevent non-smokers from forming the habit.(16)

In India, since 1975, it is mandatory to display statutory health warnings on all tobacco packaging and advertisements due to the Tobacco Act (Manufacturing, Supply and Distribution Regulations) issued by the Government of India (GOI).

The Indian Parliament passed the Tobacco and Other Tobacco Products Bill (Prohibition of Advertising and Regulation of Trade, Production, Supply, and Distribution) in April 2003. This Bill became legislation on May 18, 2003 – COTPA (17).

#### **NATIONAL TOBACCO CONTROL PROGRAMME**

The Department of Health and Family Welfare (MHFW), GOI, launched the National Tobacco Control Program (NTCP) in its 11th Five-Year Plan to facilitate the implementation of tobacco control legislation, raise awareness about the harmful effects of tobacco and fulfill obligations under WHO FCTC. Numerous voluntary organizations such as HRIDAYSHAN, CPAA Cancer Patients Aids Association, Salaam Mumbai Foundation, Health Bridge, and Voluntary Health Association of India are actively involved in tobacco control in India. Heal is actively involved in conducting Qualitative research on tobacco control. It also participates in media mobilization for tobacco control, public education, holding workshops for various stakeholder groups, and holding scientific conferences at national and international levels (18).

#### **TOBACCO CESSATION SERVICES**

Various tobacco control policies are being implemented at the national and international levels to combat tobacco consumption. However, because the nicotine in tobacco is highly addictive and difficult to quit smoking, these efforts cannot directly benefit current tobacco users. It is estimated that the lack of smoking cessation services could lead to the death of an additional 160 million smokers worldwide by 2050.

For all patients who consume tobacco, a short intervention method of 5 A, ASK (tobacco use) ADVISE (quit)-ASSESS (commitment and barriers to change)-ASSIST (user committing change)-ARRANGE (follow-up) Must be provided to monitor progress). Tobacco consumers' willingness to change can be assessed by a model that goes beyond the theory of Prochaska and Declemente. This shows the stages of change as pre-contemplation, contemplation, preparation, action, maintenance, and termination [19]. Pharmacological therapies for smoking and tobacco contribute to quitting rates of 25-30%.

- a. Agents that appear to decrease craving – Bupropion, Selegiline, Nortriptyline, etc.
- b. Agents that are used to substitute the nicotine, obtained from tobacco – Nicotine gum, Nicotine patch, Nicotine inhaler, or Nicotine nasal spray.

Nicotine Replacement Therapy (NRT) provides a slow and steady supply of nicotine to relieve craving and withdrawal symptoms and is associated with quit rates of about 23% as against 13% with placebo [20].

## THE FUTURE

Cigarette regulation and smoking cessation by raising public health awareness, promoting large-scale anti-tobacco movements, raising awareness, and incorporating subjects into medical curriculums, nursing curriculums, various CMEs, conferences, scientific conferences, workshops, etc. Educate all medical professionals about. It was recorded. Finally, if all medical professionals are involved in tobacco control and smoking cessation, the impact is enormous. Expanding the TCC to the surrounding area to reach out to the community to make it more accessible and generally accepted will make it easier for millions of tobacco users today to abandon this practice [14].

## CONCLUSION

Smoking has many harmful health effects that can have both short-term and long-term effects. More than 138,000 Americans died from COPD in 2010, making it the third leading cause of death in the United States where smoking was the cause. There are different methods to quit smoking including a positive mindset to quit first. (15) Nicotine replacement therapy in the form of gum or patch may be preferred. The available evidence suggests that smoking cessation can be supported by counseling, nicotine replacement, and bupropion. There are various methodologies for the cessation of smoking that involve a positive mind to quit smoking as a first step. Nicotine replacement therapy in the form of chewing gums, patches can be preferred. Available evidence shows that smoking cessation can be helped with counseling, nicotine replacement, and bupropion.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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