

Editorial

Tobacco: The Silent Killer

Tobacco is an agricultural product which is processed from the leaves of plants in the genus *Nicotiana*. It is most commonly used as a recreational drug. There are more than 70 species of tobacco in the plant genus *Nicotiana*. The word *Nicotiana* is taken from the name of Jean Nicot who was the ambassador of France to Portugal in 1559. He sent tobacco leaves to the court of Catherine de Medici as a kind of medicine.¹

Tobacco smoke is a complex, dynamic and reactive mixture containing an estimated 5,000 chemicals.² This toxic and carcinogenic mixture is probably the most significant source of toxic chemical exposure and chemically mediated disease in humans.³

Due to the addictive properties in tobacco, tolerance and dependence develop. The World Health Organization (WHO) reports it to be the leading preventable cause of death worldwide and estimates that it currently causes 5.4 million deaths per year. Twenty-first century could see a billion tobacco victims.⁴

Tobacco is used in different forms worldwide. It may be consumed by either smoking or by chewing. Smoking is the most common form of tobacco abuse all over the world. Use of tobacco commonly affects the heart and lungs. The most common areas affected by tobacco are hands and feet with first signs of smoking related health issues showing up numbness, with smoking being a major risk factor for heart attacks, chronic obstructive pulmonary disease (COPD), emphysema and cancers, particularly lung cancer, cancer of larynx and mouth and pancreatic cancer.⁵ The effect depends on the number of years that a person smokes and how often the person smokes. Overall life expectancy is also reduced in long term smokers, with estimates ranging from 10 to 17.9 years fewer than non-smokers.⁶

Environmental smoke or second-hand smoke has been shown to cause adverse health effects in people of all ages.⁷ Non-smokers who are exposed to

second-hand smoke at home or work are thought, due to a wide variety of statistical studies, to increase their heart disease risk by 25–30% and lung cancer risk by 20–30%. Second-hand smoke has been estimated to cause 38000 deaths per year, of which 3400 are deaths from lung cancer in non-smokers.⁸

Most of the smokers start smoking in their studentship period. Adolescent period is the special time when students may start smoking for the influence of their friends. It is a threat to the health of young people. It is also found that smoking rate among different groups of people in the society is increasing day by day and starting age of smoking is decreasing. As of 2002, about 20% of young teens (13–15) smoke worldwide, with 80,000 to 100,000 children taking up the addiction everyday — roughly half of whom live in Asia. Half of those who begin smoking in adolescent years are projected to go on to smoke for 15 to 20 years.⁹ The WHO states that ‘much of the disease burden and premature mortality attributable to tobacco use disproportionately affect the poor.’ Of the 1.22 billion smokers, one billion live in developing or transitional nations. Rates of smoking have leveled off or declined in the developed world.¹⁰

There are three major components present in cigarette smoke which are covering all major tobacco-related diseases. They are nicotine, carbon monoxide and tar.¹¹

Nicotine and carbon monoxide are two chemicals in cigarettes which are great threat for heart and cause other circulatory diseases. Nicotine increases the heart rate and raises blood pressure constricting the arteries. It becomes hard for the heart to pump blood through constricted arteries. As a result, fat and cholesterol are deposited in the blood vessels. The heart needs to work hard to pump blood throughout the whole body. For providing more energy to the heart muscle more oxygen is needed. But carbon monoxide, the other component of cigarette hinders the oxygen supply, as the affinity of carbon

monoxide is 250 times higher than that of oxygen to combine with hemoglobin.¹² So, instead of forming oxyhemoglobin, carboxyhemoglobin is formed. Both nicotine and carbon monoxide increase the clotting as well as clogging factors in the blood. The presence of excessive concentration of carbon monoxide poisons the blood which can lead to death from asphyxiation. Another component tar is a thick and sticky substance. When inhaled it sticks to the cilia in the trachea and bronchioles and stop their flicking movement by paralyzing them. This condition affects the whole respiratory system.¹¹

Smoke contains several carcinogenic pyrolytic products that bind to DNA and cause genetic mutations. Similarly acrolein, which is abundant in tobacco smoke, also irreversibly binds to DNA, causes mutations and thus also cancer. However it needs no activation to become carcinogenic.¹³ Smoking leads to an increased risk of bone fractures, especially hip fractures.¹⁴

Smokers are three times as likely to die before the age of 60 or 70 compared to non-smokers.¹⁵ Each cigarette smoked is estimated to shorten life by an average of 11 minutes.¹⁶ However, if someone stops smoking, then these chances gradually decrease as the damage to their body is repaired. A year after quitting, the risk of contracting heart disease is half than that of continuous smokers.¹⁷

To prevent these problems, education and counseling of children and adolescents by physicians has been found effective in decreasing the risk of tobacco use.¹⁸ In Bangladesh smoking in public places is prohibited and the government has announced fine for this, but the law is not executed properly. Implementation of this law is an urgent need to reduce smoking to save the people from deadly diseases. Moreover, factories and industries of cigars of different brands are being increased day by day which is a great threat to the nation. On the packets of cigarettes, the industrialists are printing 'Smoking is harmful for health' in a very small font to obey the law. But mere writing the slogan on the packets is not enough until they stop producing cigars. People all over the world are arranging seminar and discussion programs about the harmful effects of smoking. More campaigns should be organized to

alert the people about harmful effects of tobacco. Religious motivation should also be taken in account to get rid of this curse.

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