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Health Impacts of Secondhand Smoking a Review

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Abstract

To be precise, secondhand smoke, also known as passive smoking, is a mixture of smoke produced by the burning end of a cigarette and smoke exhaled by smokers that is inhaled by others around the smoker. Secondhand smoke contains an estimated 7,000 distinct compounds, according to current estimations. Hundreds of these chemicals are hazardous, and around 70 of them are carcinogenic, according to the EPA. Secondhand smoking is associated with a variety of health problems in newborns, children, and older individuals, including lung cancer, asthma, other respiratory infections, ear infections, and Sudden Infant Death Syndrome, among other things. Adults who are exposed to secondhand smoke have a higher chance of acquiring coronary heart disease, stroke, and lung cancer as they get older. Secondhand smoking has significant negative effects on the cardiovascular system, and has been related to coronary heart disease and stroke in individuals who are susceptible.

Keywords: *Secondhand smoke, Health issues, Lung cancer*

Introduction

Secondhand smoking is defined as a mixture of sidestream smoke (the smoke generated by the burning tip of a cigarette or other smoked tobacco product) and mainstream smoke (a smoker's exhaled smoke that has been diluted by the surrounding air). In the United States, pipes, cigars, and other smoked tobacco products are among the most common causes of secondhand smoke, with cigarettes being the most common source (General; Kulhánová et al.; Shankar et al.)

Active smoking produces smoke as a byproduct, while secondhand smoke is the smoke that is created as a byproduct of active smoking. The majority of it is made up of inhaled mainline and sidestream smoke, as well as some air. Aside from that, only trace amounts of mainstream smoke escape through the cigarette mouthpiece, while vapour components dissipate through the cigarette wrapper, among other things. Secondhand smoke, commonly known as tobacco smoke in the atmosphere, is a type of pollution caused by tobacco smoke. Passive smoking, often known as involuntary smoking, is the act of inhaling secondhand smoke from another person (Winstanley and Woodward).

Tobacco smoke is classified into two types: mainline smoke, which is directly absorbed by the smoker's mouth, and side stream smoke, which is produced by the burning tip of a cigarette mixed with the surrounding air and is referred to as second-hand smoke or passive smoking. Secondhand smoking is also known as environmental tobacco smoke in some quarters. This substance is a mixture of tobacco smoke exhaled by a smoker and smoke produced by the burning of the cigarette's tip. Breathing in this smoke is commonly referred to as passive smoking in most circles (Health et al.).

Chemicals include in smoke

According to some research, secondhand smoking may increase the incidence of nasal sinus cavity cancer, nasopharyngeal cancer, and breast cancer in adults (Health and Services) and as well as the risk of lymphoma, brain tumours and childhood leukaemia (General).

Many of the hazardous substances present in smokers' smoke are also found in secondhand smoke (General; on Smoking et al.; Rodgman and Perfetti; Shankar et al.), including some that cause cancer (Shopland). Tobacco smoke contains thousands of compounds, including at least 70 recognised carcinogens. These cancer-causing substances are known as carcinogens. Tobacco smoke contains the following chemicals:

Nicotine (the addictive chemical that causes the desired effects in the brain), Formaldehyde, Ammonia, Lead, Hydrogen cyanide, Arsenic, Radioactive elements like, Polycyclic aromatic hydrocarbons (PAHs), Benzene, Carbon monoxide, polonium-210, Tobacco-specific nitrosamines (TSNAs) (Bernat et al.).

Many of these chemicals are recognised carcinogens. Some of these can also cause heart disease, lung illness, and other significant health issues. The bulk of the chemicals are generated by the burning of tobacco leaves, not by cigarette additives (or other tobacco products) (Bernat et al.).

Diseases caused by second hand smoking

As a result of secondhand smoke, persons who have never smoked develop lung cancer. Nonsmokers who are exposed to secondhand smoke at work or at home have a 20–30% higher risk of lung cancer. Each year, secondhand smoking kills more than 7,300 nonsmokers in the United States. The longer and more severe the secondhand smoke exposure, like with actual smoking, the greater the risk of lung cancer. Secondhand smoking causes a variety of health problems in babies and children, including severe asthma episodes and the more common sudden infant death syndrome, as well as ear infections and lung infections. Adults who are exposed to secondhand smoking suffer from a variety of health problems, including lung cancer, coronary heart disease and stroke (Health and pdf; Last and Chin).

In New Zealand, the number of deaths caused by prior secondhand smoking exposure has risen to roughly 347 every year. We estimate that SHS will cause roughly 325 potentially preventable deaths per year in New Zealand in the future, based on existing exposures. We looked at the effects of modifying some of the assumptions that go into the numbers, and we came up with a reasonable range (174–490 preventable fatalities each year) (Woodward and Laugesen).

Second hand smoke causes cardiovascular disease

Smoking is a leading cause of CVD, accounting for one out of every four fatalities from the disease (Courtney). Smoking has the potential to: Increase the amount of triglycerides in your blood (a type of fat in your blood), Reduce your “good” cholesterol (HDL), Blood becomes sticky and clots more easily, obstructing blood flow to the heart and brain. Cells that lining the insides of blood vessels are damaged. Increase plaque accumulation in blood arteries (fat, cholesterol, calcium, and other chemicals), Blood vessels thicken and narrow as a result of this condition (Health and Services).

Secondhand smoke causes lung cancer

People who exposed to second-hand smoke has more chances to get lung cancer as compared to those who do not expose to passive smoking (McKeagney). One of the implications of lung cancer is a reduction in overall survival as well as a reduction in progression-free survival. People with lung cancer who get it from secondhand smoking have a higher mortality rate than those who have not been exposed to secondhand smoke. People who smoke and are exposed to secondhand smoke have a harder time quitting than individuals who do not smoke if they are diagnosed with lung cancer and have been

exposed to secondhand smoke (Eng et al.). Cigarette smoking has been demonstrated to affect therapy effectiveness in lung cancer patients (Aveyard et al.). Since 1988, lung cancer has been the most frequent cancer in the world. Lung cancer cases are increasing in developing countries, according to the World Health Organization. Lung cancer is a kind of cancer that affects men at a higher rate than women. On the other hand, breast cancer is the most frequent type of cancer in the world, despite popular belief. Lung cancer is responsible for 25 percent of all deaths worldwide. (Gangane et al.). According to World Health Organization, the number of individuals dying from lung cancer increased from 14 million in 2012 to 22 million in the next ten years. With a 13 percent incidence rate in 2012 and a growth of 18 percent in 2015, lung cancer is the world's leading cancer killer, ranking first among all other cancers in the globe (Rindi et al.).

Pakistan ranked third in the number of cancer cases in the world. There are 5.9% new cases of lung cancer in both males and females recorded in Pakistan for 2020. 1250 deaths documented, 7.9% are expected to occur in 2020. On the other hand, though Pakistan has a far higher fatality rate than many other nations, it has a much lower number of reported cases when compared to other countries (Arif).

Second-hand Smoke and Your Children's Health

If a new-born is exposed to secondhand smoke, he or she is more likely to die as a result of Sudden Infant Death Syndrome (SIDS). Developing serious health problems in childhood, as well as having existing health problems deteriorate, are both at elevated risk in children. Children who are exposed to secondhand smoking may experience the following health consequences. Infections of the ears Coughs and colds are common. Symptoms of respiratory issues, such as pneumonia, dental and bronchitis caries Children of smoker's wheeze and cough more frequently, and they have a more difficult time recovering from colds than other children of smokers. They will also miss a significant number of additional school days. Other signs and symptoms of secondhand smoking include a stuffy nose, a headache, a sore throat, eye pain, and hoarseness, among others.

Asthmatic children are particularly vulnerable to the effects of secondhand smoking. It may cause an increase in asthma attacks, and the attacks may be more severe, prompting hospitalization in certain cases (Ungar and Bray).

Sudden Infant Death Syndrome (SIDS)

Sudden Newborn Death Syndrome (SIDS) is defined as the unexplained death of an infant that is discovered after an examination of the death site, review of the medical history and autopsy

SIDS Facts

The most common cause of mortality in babies between the ages of one month and one year is Infant Sudden Death Syndrome (SIDS). Every year, around 2,300 newborns in the United States die as a consequence of Sudden Infant Death Syndrome (SIDS). The bulk of SIDS deaths occur between the ages of two and four months. Suffocation, choking, or any other form of vaccination or immunization do not induce SIDS (Köffer et al.).

What makes a baby more likely to die from SIDS?

During and after pregnancy, exposure to cigarette smoke is harmful. Sleeping on one's stomach or on one's side in the crib, use softer surfaces and loose sheets to keep the baby comfortable. Overheating (due to the use of too many blankets or being overdressed), Sharing a bed with a smoker is not a good idea. At birth, he weighed less than 5½ pounds, which is considered little. Prenatal exposure to opiates, alcohol, or cocaine such as, oxycontin, morphine and heroin is associated with a higher risk of birth defects (Mitchell et al.).

Effects and composition of tobacco with its mechanism.

Nicotine is classified as an amine which works by binding to receptors known as "nicotine acetylcholine receptors". These receptors are present on the smoker's muscles as well as in some parts of the brain (Advokat and Comaty). Nicotine stimulates receptors by triggering a chain reaction that results in the release of more neurotransmitters into the body (Advokat and Comaty; Benowitz "Pharmacology of Nicotine: Addiction, Smoking-Induced Disease, and Therapeutics"; Gonçalves). It is made of five subunits that are organized around a central region within the nicotine receptors that are found in the brain (Advokat and Comaty).

Because of the differences in how these subunits respond to nicotine and how they influence electrical impulse transmission, each can create a varied spectrum of responses to nicotine at various speeds and concentrations (Benowitz "Clinical Pharmacology of Nicotine: Implications for Understanding, Preventing, and Treating Tobacco Addiction"). According to animal studies, the 42 receptor subtype is the primary receptor responsible for nicotine dependence, as removing the 2 subunit results in a complete cessation of behavioural responses to nicotine. The sensitivity to nicotine is altered by five different mutations in the 4 subunit (Tapper et al.). Cigarette smoke has been shown to activate both the central and peripheral nervous systems, resulting in a rise in heart rate and blood pressure, among other side effects (Benowitz "Clinical Pharmacology of Nicotine: Implications for Understanding, Preventing, and Treating Tobacco Addiction"). High dosages of nicotine, on the other hand, can cause

low blood pressure and alterations in the body's ability to release adrenaline, resulting in hypotension and altered adrenaline release (Zevin et al.).

Conclusion:

Secondhand smoke, often known as passive smoking, is a mixture of smoke produced by a cigarette's burning end and smoke exhaled by smokers. Secondhand smoking has been linked to a number of health issues i.e. asthma attacks, lung infections, Sudden Infant Death Syndrome, Lung infections and CVDs in newborns, children, and the elderly. Adults who are exposed to secondhand smoke are more likely to develop coronary artery disease, stroke, and lung cancer. Secondhand smoking has a negative impact on the cardiovascular system in vulnerable people and can lead to coronary heart disease and stroke.

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