Hodan Ali

Smoking effect on health:

In this report I mainly focus on the effects of smoking on health. Smoking has major effects on our bodies and gets worse with constant use. Smoking is an epidemic issue in today's world. Tobacco is the only legal drug which kills millions of people worldwide. WHO, World Health Organization has estimated that tobacco use (smoking and smokeless) is currently responsible for the death of about six million people across the world each year with many of these deaths occurring prematurely. This total includes about 600,000 people are also estimated to die from the effects of second-hand smoke. Although often associated with ill health, disability and death from noncommunicable chronic diseases, tobacco smoking is also associated with an increased risk of death from communicable diseases. Nicotine is stated to be the most harmful substance in tobacco, it is said be an addictive.

The negative effects could be directly or indirectly which usually involves the harming social. One of the ingredients in tobacco is a mood-altering drug called nicotine. Nicotine reaches your brain in mere seconds and makes you feel more energized for a while. But as that effect wears off, you feel tired and crave more. Nicotine is extremely habit-forming, which is why people find smoking so difficult to quit.

Physical withdrawal from nicotine can impair your cognitive functioning and make you feel anxious, irritated, and depressed. Withdrawal can also cause headaches and sleep problem

Mainly seen as an addiction, where individuals usually start to smoke their first cigarette in their youth and are usually influenced passively or actively. A youth may have a member of immediate who is a regular smoker or through peer pressure. Mostly adolescences will have an influence by a family member. Recent research has stated that youth start to smoke because they inherit this from their mother, this vital information will be explained throughout this report.

Smoking just one or two times can cause immediate symptoms, such as the coughing and raw throat that experienced, as well as nausea, light-headedness, dizziness and other unpleasant feelings. That's the instant effect of all those toxic chemicals coming out of a cigarette or cigar, which your body isn't used to.

Smoking also has an effect on an individual's visual representation. Smokers are usually have the smell of smoke lingering around once they have smoke. The garments will have a stench of the cigarette smoke

Smoking Facts and Figures:

Trends have increased over years for smoking, many health organizations have investigated and recorded the results of these changes throughout the years. Overall there has been significant decrease however increase in certain age groups or individuals

Adult use of tobacco

- **Most smokers reported smoking daily (9.4% daily/3.7% non-daily prevalence).**
- **Prevalence was higher among males (15.6%) than females (10.4%).**

Prevalence was highest among young adults (18.5% among those aged 20-24), and generally declined with age. Prevalence was lowest among youth aged 15-19 and adults age 55+, at 9.7% and 10.6%, respectively.

Canadians purchased over 29 billion cigarettes, down from over 42 billion in 2001.

Daily smokers in Canada smoked an average of 13.8 cigarettes per day.

Average consumption has declined by more than 3 cigarettes per day since 1999.

Male daily smokers consumed over 3 more cigarettes per day than females.

Self-rated health varied by smoking status, with non-smokers rating their general and mental health better than smokers.

There were significant differences between provinces in smoking prevalence, ranging from 10.2% in BC to over 18.5% in Newfoundland.

Cigars and cigarillos were the most popular tobacco products other than cigarettes**:** 2.5% of Canadians reported use in the past 30 days.

Use of cigars/cigarillos varied by province.

Use of other tobacco products (cigars, cigarillos, pipe, chewing tobacco/snuff, waterpipe) was more prevalent among males, and among young adults.

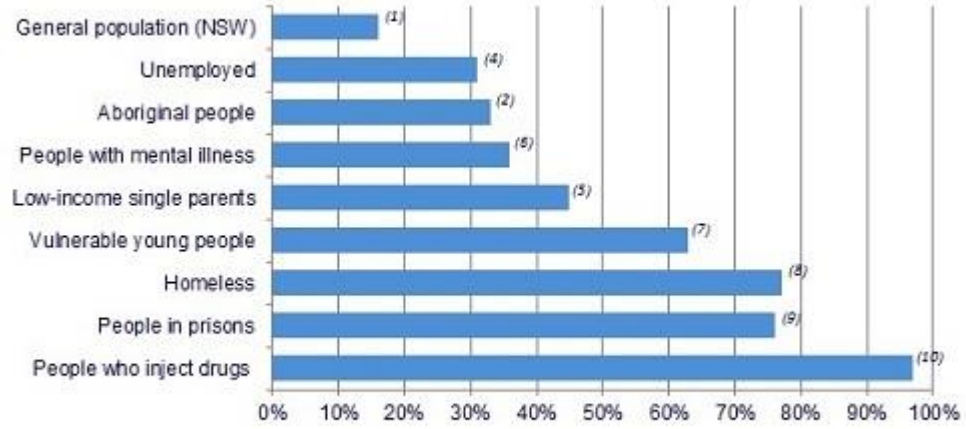
Although most smokers usually obtained their cigarettes from stores, more than one in ten had purchased from a First Nations reserve in the last 6 months. Few reported having purchased cigarettes that may have been smuggled.

More than half of respondents (57.7%) reported being exposed to second-hand smoke in the past month, including 13.4% who were exposed daily or almost daily. Exposure was most prevalent among males, young people, and current smokers.

Smoking rates are much higher among some disadvantaged groups. These high rates of smoking among already disadvantaged and vulnerable groups make smoking an important social justice issue. Smoking damages people's health increases their financial stress and erodes

their quality of life. The table below shows the trends of smoking between different groups, as you can see the general public are less likely to smoking in comparison to an individual

Figure 1.Smoking prevalence among disadvantaged groups



Source: multiple sources used. Refer to the reference corresponding to the the number indicated in the parentheses.

Youth use of tobacco:

If smoking continues at the current rate among youth in this country, 5.6 million younger than 18 will die early from a smoking-related illness. That's about 1 of every 13 Americans aged 17 years or younger alive today.

Cigarettes

From 2011 to 2017, current cigarette smoking declined among middle and high school students.

About 2 of every 100 middle school students (2.1%) reported in 2017 that they smoked cigarettes in the past 30 days—a decrease from 4.3% in 2011.

Nearly 8 of every 100 high school students (7.6%) reported in 2017 that they smoked cigarettes in the past 30 days—a decrease from 15.8% in 2011.

Electronic cigarettes

Current use of electronic cigarettes increased among middle and high school students from 2011 to 2018

Nearly 5 of every 100 middle school students (4.9%) reported in 2018 that they used electronic cigarettes in the past 30 days—an increase from 0.6% in 2011.

Nearly 21 of every 100 high school students (20.8%) reported in 2018 that they used electronic cigarettes in the past 30 days—an increase from 1.5% in 2011.

Hookahs

From 2011 to 2017, current use of hookahs increased among middle school students and decreased among high school students.

About 1 of every 100 middle school students (1.4%) reported in 2017 that they had used hookah in the past 30 days—an increase from 1.0% in 2011.

About 3 of every 100 high school students (3.3%) reported in 2017 that they had used hookah in the past 30 days—a decrease from 4.1% in 2011.

Tobacco Use Among Middle and High School Students—United States, 2011-2017
Larger infographic

Smokeless Tobacco facts states

Nearly 2 of every 100 middle school students (1.9%) reported current use of smokeless tobacco.

Nearly 6 of every 100 high school students (5.5%) reported current use of smokeless tobacco.

All Tobacco Product Use

In 2018, about 7 of every 100 middle school students (7.2%) and about 27 of every 100 high school students (27.1%) reported current use of some type of tobacco product.

In 2013, nearly 18 of every 100 middle school students (17.7%) and nearly half (46.0%) of high school students said they had ever tried a tobacco product.

Use of multiple tobacco products is prevalent among youth.

In 2017, about 2 of every 100 middle school students (2.4%) and about 9 of every 100 high school students (9.2%) reported current use of two or more tobacco products in the past 30 days.

In 2013, about 9 of every 100 middle school students (9.4%) and about 31 of every 100 high school students (31.4%) said they had ever tried two or more tobacco products.

Reasons for use:

Factors associated with youth tobacco use include the following:

- Social and physical environments
- The way mass media show tobacco use as a normal activity can promote smoking among young people.

- Youth are more likely to use tobacco if they see that tobacco use is acceptable or normal among their peers.
- High school athletes are more likely to use smokeless tobacco than their peers who are non-athletes.
- Parental smoking may promote smoking among young people.
- Biological and genetic factors

There is evidence that youth may be sensitive to nicotine and that teens can feel dependent on nicotine sooner than adults.

Genetic factors may make quitting smoking more difficult for young people.

A mother's smoking during pregnancy may increase the likelihood that her offspring will become regular smokers.

Mental health: There is a strong relationship between youth smoking and depression, anxiety, and stress.

Personal perceptions: Expectations of positive outcomes from smoking, such as coping with stress and controlling weight, are related to youth tobacco use.

0ther influences that affect youth tobacco use include:

- Lower socioeconomic status, including lower income or education
- Lack of skills to resist influences to tobacco use
- Lack of support or involvement from parents
- Accessibility, availability, and price of tobacco products
- Low levels of academic achievement
- Low self-image or self-esteem
- Exposure to tobacco advertising

The health problems and diseases caused by smoking

Cancer: Is the abnormal uncontrollable cell division and can invade other tissues. Cancer cells can spread to other parts of the body via blood as it circulates around the body and lymph systems which are involved

Smoking can cause cancer as each cigarette smoke, which is full of cancer-causing substances which are carcinogens. Carcinogens is any substance that has the potential to cause cancer in living tissues. Of the more than 7,000 chemicals in tobacco smoke, at least 250 are known to be harmful, including hydrogen cyanide, carbon monoxide, and ammonia, among the 250 known harmful chemicals in tobacco smoke, at least 69 can cause cancer. These cancer-causing chemicals

Poisons in cigarette smoke can weaken the body's immune system, making it harder to kill cancer cells. When this happens, cancer cells keep growing without being stopped.

Poisons in tobacco smoke can damage or change a cell's DNA. DNA is the cell's "instruction manual" that controls a cell's normal growth and function. When DNA is damaged, a cell can begin growing out of control and create a cancer tumour

Different types of cancers are cause by smoking over 17 types of cancer can be caused by smoking lung cancer being the fundamental cause by smoking, figures stated 9 out 10 lung cancers are caused by smoking

Lung cancer being the most prevalent cancer, this is because smoke enters into the lungs which enter the alveolus and the tissues. The cells in the tissue start to divide these continue to divide until they form into a tumour. This destroys lungs to unction properly damaging the cilia cells and goblet cells, which are involved in removing dust, and bacteria, in not able to doing so there will be a build up of bacteria in the lungs. This means the lungs are prone to other diseases

There are many distinguishable symptoms which occurring if you have lung cancer. First signs are usually coughing, wheezing, feeling short of breath coughing up mucus with blood, because these symptoms are so general many individuals will not think that this is signs of lung cancer and usually by the time, they notice the cancer has spread immensely.

An ostomy (or stoma) is a surgical opening made to the body that allows waste to be eliminated from the body.10 Ostomies are used in treatment or management of cancer or other diseases.11 Ostomies are needed when the body's normal opening is closed or altered as part of cancer treatment. An ostomy pouch is located around the opening to collect waste for removal. Ostomies are usually done during the first stages of surgical treatment to remove cancer.10 For colorectal cancer patients, a colostomy (surgical openings from the bowel or colon to the abdomen) can be a lifesaving surgery. An ostomy can be temporary or permanent.

Temporary ostomies are used while the affected area of the body heals. Permanent ostomies are used when cancer has resulted in the removal of the entire colon or the end of it.

Strokes

Smoking makes you twice as likely to die if you have a stroke, and the more you smoke, the greater your risk of stroke. If you smoke 20 cigarettes a day, you are six times more likely to have a stroke compared to a non-smoker. Tobacco smoke has many different effects on the body including thickening the blood, increasing the risk of blood clots and narrowing the arteries, as well as restricting oxygen in the blood.

Just under 20% (one in six) adults in the UK are smokers. Around 96,000 people in the UK die every year from smoking-related illnesses. These include stroke, heart disease and cancers. Tobacco smoke contains over 7,000 toxic chemicals, including carbon monoxide, formaldehyde, arsenic and cyanide. These chemicals are transferred from your lungs into your blood stream, changing and damaging cells all around your body. The changes that these chemicals cause can increase your risk of stroke.

Cigarette smoke can affect your body's cholesterol levels. Cholesterol is a vital substance in your body, but if there is too much in your blood it can cause heart disease and stroke. Smoking reduces the levels of 'good' cholesterol (also called HDL) in your blood stream and increases levels of 'bad' cholesterol (also called LDL). Having low levels of 'good' cholesterol in your body increases your risk of stroke.

When you inhale cigarette smoke, carbon monoxide and nicotine enter your bloodstream. The carbon monoxide reduces the amount of oxygen in your blood, and the nicotine makes your heart beat faster and raises your blood pressure. This increases your risk of a stroke. Smoking can also trigger an episode of atrial fibrillation, a heart condition that is a risk factor for stroke. The chemicals in smoke also make your platelets, a type of blood cell, more likely to stick together. This increases the chance of a clot forming.

Chronic Bronchitis

During their lifetime, over 40% of smokers develop chronic bronchitis. Chronic bronchitis is associated with an accelerated decline in lung function - a risk of developing chronic obstructive pulmonary disease and mortality. Approximately one-quarter of smokers can be affected by clinically significant chronic obstructive pulmonary disease. The incidence of chronic obstructive pulmonary disease is also substantial in young adults. Smokers may reduce their risk of developing chronic obstructive pulmonary disease by physical activity and increase their survival by smoking reduction. In adults and the elderly population, severe chronic obstructive pulmonary disease is associated with the most rapid decline in lung function, which is, in turn, associated with chronic obstructive pulmonary disease-related hospitalization and mortality. Using a fixed forced expiratory volume in 1 s/force vital capacity ratio (0.7) to define obstruction in chronic obstructive pulmonary disease at old age is acceptable. In chronic obstructive pulmonary disease patients, the disease is still underreported on death certificates. Chronic mucus production and being a female are associated with chronic obstructive pulmonary disease mentioned on death certificates.

Smoking effects on insulin

If you have diabetes, you must work hard enough already to keep your blood sugar in check. Smoking can make that task even more difficult. Smoking may make your body more resistant to insulin, which can lead to higher blood sugar levels. Uncontrolled blood sugar can lead to serious complications from diabetes, including problems with your kidneys, heart, and blood vessels

Nicotine inhibits hypothalamic AMP-activated protein kinase (AMPK) activity, decreases food intake, and increases thermogenesis. Nicotine enhances lipolysis and increases the delivery of FFA to the liver and skeletal muscle. These effects of nicotine are associated with increased hepatic VLDL secretion and intramyocellular lipid (IMCL) saturation as well as peripheral insulin resistance.

Smoking can have effects on reproduction.

Smoking can gradually and permanently damage blood vessels throughout the body, including those that carry blood to the penis. This can make it difficult to get or maintain an erection (impotence). Quitting smoking may help prevent new damage from occurring inside the blood vessels.

Smoking can also affect a man's ability to get or maintain an erection in other ways that are not well understood. Nicotine may make the blood vessels narrower for a short time, which makes it more difficult to get enough blood into the penis for a normal erection. Men who quit smoking often have fewer problems achieving a normal erection.

During sexual arousal, a woman's genitals swell with blood. Nicotine narrows blood vessels, which makes it harder for blood to fill the genitals. So women who smoke may have less sexual sensation or feel less aroused.

Smoking while on hormonal birth control increases a woman's health risks, such as for blood clots, heart attack, and stroke. And birth control may not work as well, because smoking can lower the level of estrogen in the body.

Compared to women who do not smoke, women who smoke are likely to have longer and more painful and irregular menstrual cycles or periods.

Women who smoke take longer to become pregnant. But women who quit smoking before they try to become pregnant are as likely to become pregnant as women who have never smoked.

Effects of smoking on Mental Health

Many people are made aware about the physical health problems caused but researches show that there's also great affect on an individual state of mind and mental health. Smoking has shown to be involved in many mental illnesses including schizophrenia

The biological factors involved in smoking relate to how the brain responds to nicotine. When a person smokes, a dose of nicotine reaches the brain within about ten seconds. At first, nicotine improves mood and concentration, decreases anger and stress, relaxes muscles and reduces appetite.

Regular doses of nicotine lead to changes in the brain, which then lead to nicotine withdrawal symptoms when the supply of nicotine decreases. Smoking temporarily reduces these withdrawal symptoms and can therefore reinforce the habit.

This cycle is how most smokers become nicotine dependent.

Social and psychological factors also play a part in keeping smokers smoking. Although many young people experiment with cigarettes, other factors influence whether someone will go on to become a regular smoker. These include having friends or relatives who smoke and their parents' attitude to smoking. As young people become adults, they are more likely to smoke if they misuse alcohol or drugs or live in poverty. These factors make it more likely that someone will encounter stress. Most adults say that they smoke because of habit or routine and/or because it helps them relax and cope with stress.

Stress: The idea that people smoke cigarettes to help ease the signs and symptoms of stress is known as 'self-medication'. Stress is very common, affecting us when we feel unable to cope with unwelcome pressure. It can cause physical symptoms like headaches or breathlessness as well as making people feel irritable, anxious or low.

These feelings can alter our behaviour and feeling stressed often makes people drink alcohol or smoke more than usual. Long term stress is also related to anxiety and depression.

Depression: In certain countries for instance UK, smoking rates among adults with depression are about twice as high as among adults without depression. People with depression have difficulty when they try to stop smoking and have more severe withdrawal symptoms during attempts to give up.

Nicotine stimulates the release of the chemical dopamine in the brain. Dopamine is involved in triggering positive feelings. It is often found to be low in people with depression, who may then use cigarettes as a way of temporarily increasing their dopamine supply. However, smoking encourages the brain to switch off its own mechanism for making dopamine so in the long term the supply decreases, which in turn prompts people to smoke more.

Most people start to smoke before they show signs of depression, so it is unclear whether smoking leads to depression or depression encourages people to start smoking. The most likely explanation is that there is a complex relationship between the two.

Schizophrenia: People with schizophrenia are thrice as more likely to smoke than other public and they tend to smoke more severely. One of the most common enlightenments of this is that people with schizophrenia use smoking to regulate or manage some of the symptoms associated with their sickness and to reduce some of the side effects of their medication.

A recent study has shown that there could be a connecting relation between smoking and schizophrenia. However, there are many factors which may raise the risk for emerging schizophrenia.

Below is a small research conducted by a team at King's college London say smokers are are more likely to develop schizophrenia this also means that individuals will develop the illness at a younger age. Smoking has been associated with psychosis. It has been stated that schizophrenia patients are more likely to smoke that other patients this is because they use cigarettes as a method of self-medication

The team at King's looked at data involving 14,555 smokers and 273,162 non-smokers.

It indicated:

- 57% of people with psychosis were already smokers when they had their first psychotic episode
- Daily smokers were twice as likely to develop schizophrenia as non-smokers
- Smokers developed schizophrenia a year earlier on average

According to the team at Kings college the argument is that if there is a higher rate of smoking before schizophrenia is diagnosed, then smoking is not simply a case of self-medication.

Although many people with mental health problems say that they smoke to reduce their symptoms, they usually start smoking before their problems begin. Heavy smoking does not necessarily lead to fewer symptoms of mental health problems in the long term. Any short term benefits that smoking seems to have are outweighed by the higher rates of smoking-related physical health problems, such as lung cancer, that are common in people with mental health problems.

Second Handsmoking:

Secondhand smoke is the combination of smoke from the burning end of a cigarette and the smoke breathed out by smokers. Secondhand smoke contains more than 7,000 chemicals. Hundreds are toxic and about 70 can cause cancer.

Since the 1964 Surgeon General's Report, 2.5 million adults who were non-smokers died because they breathed secondhand smoke.

There is no risk-free level of exposure to secondhand smoke.

Secondhand smoke causes numerous health problems in infants and children, including more frequent and severe asthma attacks, respiratory infections, ear infections, and sudden infant death syndrome (SIDS).

Smoking during pregnancy results in more than 1,000 infant deaths annually.[4]

Some of the health conditions caused by secondhand smoke in adults include coronary heart disease, stroke, and lung cancer.

Exposure to secondhand smoke has immediate adverse effects on the cardiovascular system and can cause coronary heart disease and stroke.[2,4,5]

Second Smoking on Cardiovascular Disease

- Secondhand smoke causes nearly 34,000 premature deaths from heart disease each year in the United States among nonsmokers.[4]
- Nonsmokers who are exposed to secondhand smoke at home or at work increase their risk of developing heart disease by 25–30%.[1]
- Secondhand smoke increases the risk for stroke by 20−30%.
- Secondhand smoke exposure causes more than 8,000 deaths from stroke annually.

Breathing secondhand smoke can have immediate adverse effects on your blood and blood vessels, increasing the risk of having a heart attack.

- Breathing secondhand smoke interferes with the normal functioning of the heart, blood, and vascular systems in ways that increase the risk of having a heart attack.
- Even brief exposure to secondhand smoke can damage the lining of blood vessels and cause your blood platelets to become stickier. These changes can cause a deadly heart attack.

People who already have heart disease are at especially high risk of suffering adverse effects from breathing second-hand smoke and should take special precautions to avoid even brief exposures

Second hand smoking on children:

When a pregnant woman inhales second-hand smoke, nicotine enters her blood. This decreases blood flow to the baby which cause many complications as I have explained in my report however the lungs of babies and children are minor and still evolving. They tend to breathe more rapidly. As a result, they breathe in additional unsafe substances compared to adults. Also, their immune systems are not yet robust enough to protect their bodies from the harmful tobacco smoke.

Carbon monoxide in cigarette smoke can affect a baby's growth and may lead to low birth weight.

Babies who breathe in second-hand smoke are at higher risk of developing sudden infant death syndrome (SIDS).

Frequent exposure to second-hand smoke leads to many health issues in children. These include:

- asthma and asthma symptoms like cough, wheezing and shortness of breath
- pneumonia
- bronchitis
- ear infections

Second-hand smoke may damage a child’s ability to think things through. A recent study links second-hand smoke to lower test scores in reading, math and problem-solving.

Researchers have reported that second hand smoking and Sudden Infant Death have a strong correlation. Sudden Infant Death Syndrome (SIDS) is the sudden, unexplained, unexpected death of an infant in the first year of life. SIDS is the leading cause of death in otherwise healthy infants. Second-hand smoke increases the risk for SIDS.

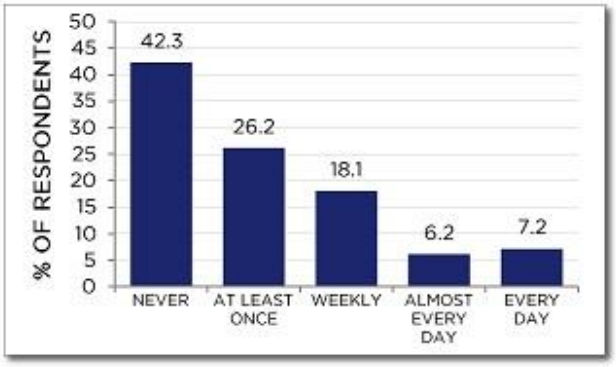
Smoking by women during pregnancy increases the risk for SIDS

Infants who are exposed to second-hand smoke after birth are also at greater risk for SIDS

Chemicals in second-hand smoke appear to affect the brain in ways that interfere with its regulation of infants’ breathing

Infants who die from SIDS have higher concentrations of nicotine in their lungs and higher levels of cotinine (a biological marker for second-hand smoke exposure) than infants who die from other causes.

FIGURE 5.1: FREQUENCY OF EXPOSURE TO SECONDHAND SMOKE IN THE PAST MONTH, 2015



DATA SOURCE: CANADIAN TOBACCO, ALCOHOL AND DRUGS SURVEY, 2015

One in five respondents (20.1%[a]) reported that at least one person in their household was a cigarette smoker. However, the vast majority of respondents (94.0%[b]) reported that no one smoked inside their home on a daily or almost daily basis; 6.0%[c] reported that someone smoked inside their home every day or almost every day (4.3%[d] reported one person; 1.5%[e] reported two; 0.2%[f] reported three or more).

Smoking e-cigarettes:

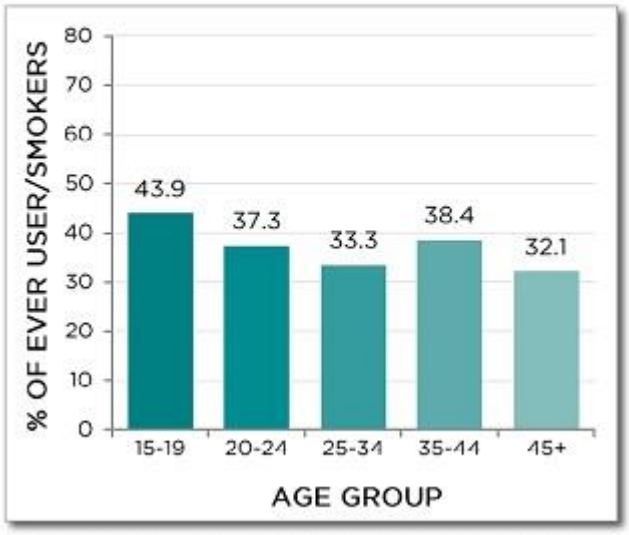
Ever-users of e-cigarettes who were either recent (past year) quitters or current smokers who had ever tried to quit, were asked "*In the past two years, did you ever use the e-cigarette as an aid while attempting to quit smoking?*"; half (49.9%) reported doing so.

Use of e-cigarettes as a smoking cessation aid was reported by nearly equal proportions of males (50.1%[b]) and females (49.7%[c]). Use as a cessation aid also did not differ significantly by age group, although it appeared to be less prevalent among youth than among adults over age 20 (Figure above)

When considering all those who had ever used an e-cigarette (of any smoking status), 22.8%[d] reported using it as a quit aid within the past 2 years (22.3%[e] of males; 23.6%[f] of females).

More than three-quarters (76.6%[g]) of smokers who had used e-cigarettes in the past 30 days were intending to quit smoking in the next 6 months, significantly greater than the 63.6%[h] of smokers who had NOT used e-cigarettes. Intentions to quit smoking in the next 30 days were similar between past 30-day users (29.5%[i]) and non-users (31.3%[i]) of e-cigarettes

FIGURE 12.25: USE OF E-CIGARETTES TO REPLACE CIGARETTES, AMONG EVER USERS WHO WERE CURRENT SMOKERS, BY AGE GROUP, 2015



DATA SOURCE: CANADIAN TOBACCO, ALCOHOL AND DRUGS SURVEY, 2015

Current smokers were asked the following: "Sometimes smokers use e-cigarettes even when they are not attempting to quit smoking. Have you ever used e-cigarettes when you were not able to smoke or when you wanted to smoke fewer cigarettes? (For example, in a meeting, on a plane, at school?)". I have chosen a Canadian report on e- cigarettes

Overall, approximately one-third (35.2%[k]) of e-cigarette ever-users who were also cigarette smokers reported using an e-cigarette when they were unable to smoke, or to smoke fewer cigarettes.

This type of use was reported by 37.7%[l] of males and 31.6%[m] of females, not significantly different.[165] As well, there was no significant variation by age group in this type of use (Figure above).

When all current smokers were considered, 17.7%[n] reported ever using an e-cigarette to replace cigarettes (19.0%[o] of males; 15.9%[p] of females)

Other in researchers suggest that even though e-cigarettes levels of harmful substances and chemical appear to be reduce like nicotine. Aerosol in the objects can produce addictive nicotine and toxic levels of other chemicals. Also long-term health effects of these device aren't know however they're been studied

Conclusion:

All the studies and researches I have included in this report described in the present reports displays the effects of smoking and how serious the effects are. Smoking is linked to other serious diseases which are hard to recover from and sometimes leads to morality. Smoking not only harms you however everyone else around you. I use different researchers results and reports to get an good idea of the fundamental effect that smoking has our bodies

I have identified several genes that appear to have a distinct role in various tobacco-related diseases, and cancers. Inability to control all the different variables in human studies has made it difficult to clearly define the contribution of various suspect genes in tobacco carcinogenesis. With the recent commercial availability of a variety of transgenic and knock-out animals for research, it would be most desirable, as a first step, to use these animals to establish experimental models of various tobacco-related diseases which can then be used for determining the contribution of different genes to disease processes and for elucidation of the mechanism(s) of disease development. Furthermore, these animal models can be used to identify various agents possessing protective and therapeutic potential.

The information I have retrieved did not include all of graphs or tables as if was hard to find relevant graphs, some graphs are too generalised and it not a representation of the report as it would only include certain individuals where it would be have more appropriate to get an overview of the smokers themselves

Research efforts in the area of smoking and health would benefit by focusing on studies of the in vivo effects of inhaled whole cigarette smoke in animal models of known specific genetic composition. I would have liked to include information on effects of not only humans but environment

Selection of the genetic composition would also require a thorough consideration of the information available from human molecular epidemiological studies. As indicated earlier, there are a number of genes that clearly influence the development of smoke-related diseases. In this context, many relevant transgenic and knock-out animals that can be effectively used for the study of tobacco-related diseases are now becoming available.

Tobacco abuse is a major public health problem and includes second-hand smoke exposure. Continued efforts to control and eliminate this abuse are a medical necessity.

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