

## E-Cigarette, a Shipwreck! A Scandal?

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### ABSTRACT

Electronic cigarettes (E-cigarettes) are devices designed to help smokers stop and avoid the harmful consequences of tobacco. In recent years, the popularity of electronic cigarettes has exploded. Its increased use during adolescence is noteworthy. Despite the fact that e-cigarettes have grown extremely popular, there are some differing viewpoints on their long term health impacts, in particular. Some argue that it is less hazardous than traditional cigarettes, while others argue that it is the opposite. Although e-cigarettes are less hazardous than traditional cigarettes, they nonetheless contain carcinogens including formaldehyde and acetaldehyde. It also contains heavy metals (nickel, chromium) that are absent from traditional cigarettes, posing health risks. E-cigarette uses cause irritation in the upper and lower respiratory tracts, as well as increased airway resistance and bacterial colonisation in the lungs. Tachycardia and a rise in diastolic blood pressure are potentially possible side effects. Despite the fact that e-cigarettes have been demonstrated to have some benefits in terms of quitting smoking, the majority of studies have yielded negative outcomes.

**Key words:** E-cigarette, Smoke, Tobacco, Cessation, Lungs

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### INTRODUCTION

In developing countries such as India, tobacco usage is one of the top five causes of death. It's also the leading cause of death that may be avoided. In 2004, the WHO predicted 58.8 million deaths worldwide, with 5.4 million of those deaths related to tobacco use. In 2002, developing countries accounted for 70% of all deaths. In 2025, 1.5-1.9 billion individuals are expected to smoke. The second largest consumer of tobacco in the world is India. In most sections of the country, the frequency of all forms of tobacco use among men has been found to be high. Furthermore, according to a national assessment on tobacco use in India, 16.2% of current smokers and 20.5% of tobacco chewers are current smokers. The most common tobacco smoking method is beedi, followed by cigarette smoking, and the most popular chewing method is pan with tobacco, according to the poll [1].

Tobacco cessation (quitting) is a relatively recent area of tobacco management in India. In comparison to other tobacco control programmes, it's regarded to be the most cost-effective treatment option. In 2002, WHO approved 13 tobacco cessation centres in collaboration with the

Indian government which were operationalized with a multidisciplinary approach on the occasion of "No Tobacco Day around the World".

Smoking is defined as the act of taking a breath, a material that has been burned, tasted, and this substance is then absorbed into the circulatory system. One of the most popular recreational drugs is smoking.

Smoking cessation intervention has become an essential necessity as a result of increased tobacco use and related health hazards, particularly in developing countries. There will be people at various stages of quitting smoking.

Not ready (pre-contemplation); unsure (contemplation), ready (preparation), action and maintenance are the different states. Counselling and behaviour control cannot be overstated in their importance [2].

The steps for implementing the '5A's for patients who are ready to walk away are Advise, Ask, Assess, Assist, and Arrange.

**Advice:** For health reasons, smokers will be strongly advised to quit.

**Ask:** The patient is questioned if he smokes and how much he smokes at every visit.

**Assess:** The smoker's willingness to quit smoking.

**Assist:** If a smoker expresses a desire to quit, she or he will be assisted in doing so.

**Arrange:** To ensure success, follow-up should be planned.

In most cases, the first three steps of ask/advise/assess are repeated until the smoker feels ready to act [3].

The 5R's strategy for patients who refuse to quit.

**Relevance:** The importance of quitting is discussed with the patient, taking into account the person's specific health situation.

**Risk:** The patient's individual risk of continuing to smoke is made plain.

**Reward:** The benefits of quitting smoking are explained, as well as the gains in health that the patient can expect.

**Roadblocks:** Obstacles that prevent smokers from taking action are examined in detail, such as fear of withdrawal symptoms, anxiety of gaining weight, and so on.

**Repetition:** The method should be used every time you come into contact with a smoker.

Nicotine replacement therapy, bupropion and varenicline are among the first-line therapies, followed by clonidine and nortriptyline. Healthcare session, repeated counselling is critical in underlining the importance of stopping smoking. Furthermore, counselling by health professionals boosts the total number of persons who have given up smoking. These treatments work because they are administered by doctors who are well liked by general public and with whom smokers have positive relationships. Even archaic telephone line systems that merely answered incoming calls yielded impressive outcomes [4].

**History:** In Stockholm, the first public cigarette detoxification clinics opened in 1955. Over the course of ten days, these early clinics blended drugs with educational lectures, leaflets, and physician counselling. Preparation, intervention, and maintenance are the three phases of smoking cessation treatment. Preparation seeks to boost a smoker's motivation to quit and confidence in his or her ability to succeed. To assist smokers in achieving abstinence, intervention might take a variety of forms (or a mix of them). Permanent abstinence requires maintenance, which includes support, coping skills, and substitution behaviours. Smokers are highly recommended to adopt proven cessation methods to quit smoking, such as prescription drugs and counselling.

**Other modalities include:**

- Withdrawing slowly and cold turkey
- Filters
- Anti-smoking devices
- Cigarettes that are powered by electricity (e-cigarettes)
- Lozenges and pouches of tobacco
- Hypnosis
- Acupuncture
- Magnet therapy is a treatment that uses magnets to
- Thermotherapy with cold lasers

- Supplements and herbs
- Mind-body exercises

A more comprehensive therapeutic treatment strategy for tobacco cessation includes encouraging smoking cessation, selecting appropriate medications and monitoring and helping patients through their withdrawal symptoms. Long-term, assisting patients in completing their smoking cessation treatments has the potential to save healthcare costs, save clinician's time and money, and improve morbidity and death rates.

## LITERATURE REVIEW

### E-cigarette

Tobacco use remains variety one explanation for disease and mortality. Long-term cigarette quitting rates are dismal, even with behavioural and pharmacologic treatment. Electronic nicotine delivery devices, sometimes called electronic cigarettes or e-cigarettes, have become more popular because the best thanks to quit smoking. Because e-cigarettes are so widely used in this context, health care clinicians should be aware of their safety and effectiveness. They go by a variety of names and come in a variety of shapes, sizes, and device types. E-cigs, vapes, vape pens, dab pens, dab rigs, tanks, mods, and pod-mods are all terms for Electronic Nicotine Delivery Systems (ENDS). The usage of e-cigarettes or vaping goods is referred to as "vaping" or "juuling". Dabbing pens are e-cigarette or vaping products that are used for dabbing. An electronic cigarette could also be a gadget that duplicates the act of smoking tobacco. An e-cigarette is made up of an atomizer, a power source in the form of an electronic battery, and a container in the form of a cartridge or tank. Instead of inhaling smoke, the user inhales vapour. As a result, "vaping" is commonly used to describe using an e-cigarette. A component that atomizes e-liquid, a liquid solution, is known as an atomizer. An e-cigarette is activated by taking a puff or pressing a button. Some look like regular cigarettes, and the majority of them may be reused. E-cigarettes emit a fabric aerosol, often known as vapour. Vapour contains humectants, glycerine, nicotine, flavouring, and traces of nitrosamines [5].

**History:** Although it's often assumed that Hon Lik, a Chinese pharmacist, invented the fashionable e-cigarette in 2003, tobacco corporations are manufacturing nicotine aerosol generating devices since 1963. Its exact content fluctuates and is ready by a selection of things, including user behaviour. Although the health consequences of vaping are uncertain, it is thought to be less harmful than tobacco smoking. E-cigarette vapour contains less contaminant in smaller amounts as compared to cigarette smoke [6].

**Construction:** An atomizer, an influence source form of electric battery, and a container for the e-liquid, style of a cartridge tank, structure an electronic cigarette. E-cigarettes have changed over time, and also the numerous designs are divided into generations [7].

E-cigarettes classified as first generation are those that are designed to closely resemble the smoking experience. These goods were used as substitutes for cigarettes by those who were trying to quit smoking or looking for a healthier alternative. Some first-generation e-cigarettes are shaped like a typical tobacco cigarette, while others are shaped like a cigar or a pipe. Other names for them include "cigalikes" and "vape sticks."

A clearomizer a translucent cartridge that combines e-liquid and an atomizer and a small battery separate second generation e-cigarettes from their predecessors. Second generation devices are generally referred to as "tank systems" because they include a transparent reservoir that carries more e-liquid than previous cartridge-based variants. Third generation devices cover a wide range of items and are the most significant shift from traditional tobacco cigarettes. Frequently, these devices are sold as "vaping" devices, with no mention of cigarettes. Many are square or rectangular, with adjustable and rebuild able atomizers and batteries, and bear little similarity to cigarettes in terms of design. People have also been customising or building their own devices, which are known as "mods," since the debut of e-cigarettes and its component part. The size, distribution, and volume of aerosol particles are affected by differences in product design and engineering. The composition of the aerosol provided to the user is determined by the fluctuation in the amounts of chemicals and nicotine included in the e-liquid/aerosol [8].

### Types of E-cigarettes

The Juul e-cigarette is the most popular. This brand accounts for over 75% of all e-cigarettes sold. It's one of only five brands that control almost the entire electronic cigarette market. Vuse, MarkTen, Blu, and Logic are the remaining four. When Juul originally came out in 2015, its vape liquid had substantially higher nicotine levels than other e-cigarettes on the market. The Centres for Disease Control and Prevention (CDC) estimates that each Juul pod has the same amount of nicotine as 20 ordinary cigarettes.

Juul's sleek appearance and addictive nicotine are attributed for the device's broad popularity among teenagers and young adults, as well as the company's growing dominance of the e-cigarette business [9].

### How do they function?

The basic operation of an e-cigarette is usually broken down into multiple steps. The user first takes a drag from the e-cigarette. The user then either engages a heating element manually or draws on the e-cigarette, which is ignited automatically by an airflow sensor. In automatically run devices, the airflow sensor monitors changes in pressure and sends electricity to a heating element and (optionally) an LED. Through capillary action, the e-liquid in the device saturates a wick, which is then aerosolized by the heating element. The term "vaporisation" is widely used to describe this

phenomenon. Following that, aerosolized liquid droplets trickle into the lips of the user and are taken into the lungs through inhalation. Although the term "vaping" is commonly used to characterise e-cigarette use, the device actually releases an aerosol, which is a suspension of gases, vapours, and aqueous particles, rather than a vapour, which is a substance in the gas phase. The way a user inhales an aerosol, its physical properties, where it ends up in the respiratory system and the concentration of toxicants in the aerosol at various places in the respiratory tract all have an impact on the user's exposure to potentially hazardous compounds. The parts that follow go through how to analyse those exposures as well as some examples of what has been done in the past.

### Health effects

Although the precise health dangers of e-cigarettes are unknown, the likelihood of great adverse effects is believed to be minimal and e-cigarettes are likely safer than combusted tobacco products. In 2016, it had been stated that the prospect of great adverse events was low. Abdominal pain, headaches, blurred vision, throat and mouth irritation, vomiting, nausea, and coughing are variety of the less serious side effects. Nicotine is addictive, damaging to the growing foetus, and its effects on the developing teenage brain are a significant issue.

E-cigarette aerosol, in addition to nicotine, may contain harmful chemicals. This contains cancer causing substances as well as microscopic particles that can penetrate the lungs deeply. However, e-cigarette aerosol contains fewer hazardous substances than tobacco smoke. E-cigarettes have the potential to injure people in unexpected ways.

Defective e-cigarette batteries have resulted in fires and explosions, with some causing significant injuries. E-cigarettes, like conventional cigarettes, emit large levels of particles with in the air. Keep with a 2020 study, e-cigarettes raise the possibility of asthma by 40% and chronic obstructive lung disease by 50% [10].

### DISCUSSION

Tobacco use remains variety one explanation for disease and mortality. Long-term cigarette quitting rates are dismal, even with behavioural and pharmacologic treatment. Electronic nicotine delivery devices, sometimes called electronic cigarettes or e-cigarettes, have become more popular because the best thanks to quit smoking [11]. Because e-cigarettes are so widely used in this context, health care clinicians should be aware of their safety and effectiveness. They go by a variety of names and come in a variety of shapes, sizes, and device types. E-cigs, vapes, vape pens, dab pens, dab rigs, tanks, mods, and pod-mods are all terms for Electronic Nicotine Delivery Systems (ENDS). The usage of e-cigarettes or vaping goods is referred to as "vaping" or "juuling." Dabbing pens are e-cigarette or vaping products that are used for dabbing. An electronic cigarette could also be a gadget that duplicates the act of smoking tobacco [12]. An e-cigarette is made up of an

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### CONCLUSION

Doctors can now prescribe effective nicotine addiction drugs and refer patients to specialised smoking cessation clinics. Neither of these tools is suitable for all smokers, thus selecting the appropriate levels of anti-smoking interventions is crucial. Doctors must talk to their patients about smoking on a regular basis and provide all smokers with brief anti-smoking literature. Clinicians should think about using NRT or bupropion in combination with intensive smoking cessation assistance to help motivated heavy smokers overcome nicotine addiction.

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