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Tobacco Cessation

The use of tobacco is widespread and comes in a variety of forms that appeal to all ages. According to the World Health Organization (WHO), “All forms of tobacco are harmful, and there is no safe level of exposure to tobacco. Cigarette smoking is the most common form of tobacco use worldwide”. The use of tobacco is the greatest preventable cause of illness and death. It currently claims nearly 6 million lives per year but data suggests that by 2030, it will claim more than 8 million lives annually. Smoking is extremely harmful to both the user and those around them (*Gehrig, 2018*).

Generally, people associate tobacco with cigarettes because they are the most commonly used form. However, tobacco can also be found in water pipes, dissolvable products, smokeless tobacco products, and e-cigarettes. I chose electronic cigarettes because they have become increasingly popular in recent years, particularly amongst younger people. I am interested in learning more about how advertising and flavoring play a role to influence the users. E-cigarettes are also known as mods, electronic nicotine delivery systems, e-cigs, e-hookahs, and vapes. They come in a wide variety of designs. The majority of them have a compartment to store the liquid,

a heating element and a battery. These components will enable the e-cigarette to function by heating the liquid, which typically contains nicotine. Nicotine is an addictive drug found in tobacco products. Chemicals which assist in producing aerosol is what the user will inhale and exhale. E-cigarettes contain harmful substances such as nicotine, volatile organic compounds, aldehydes, diacetyl (flavoring), and heavy metals (CDC, 2022).

These devices were aggressively promoted to younger and older generations as a cheaper and safer alternative to smoking cigarettes. Additionally, they were promoted as a means of avoiding smoke-free areas and assisting smokers who had difficulty quitting. These marketing efforts have been very successful amongst young people . There are a lot of different e-liquid formulations on the market right now. All of which have the potential to affect oral health. According to “Potential oral health effects of e-cigarettes and vaping: A review and case report”, a base, nicotine, and flavoring are the three typical components of these formulations. Although this can vary significantly, a typical ratio would be 20% propylene glycol to 80% glycerin. Propylene glycol is a clear liquid with a slight sweetness. When propylene glycol is heated up and turned into an aerosol, the byproducts are acetic acid, lactic acid, and propionaldehyde. This leads to the demineralization of enamel. Also, due to their hygroscopic nature, these products may bind saliva. This results in xerostomia or dry mouth. Glycerin is another colorless, sweet-tasting liquid. It is claimed to be 60% as sweet as sucrose but cariogenic bacteria do not metabolize it. However, in conjunction with some flavoring, it causes biofilm formation to double and microbial adhesion to the enamel to increase by four times. Furthermore, similar to traditional cigarettes, e-cigarettes are also linked with gingival inflammation and periodontal disease (Irusa *et al.*, 2020).

E-cigarettes not only have an impact on oral health, but also across a number of organ systems. Urothelial hyperplasia, cardiac dysfunction, and enhanced atherosclerosis are all seen when exposed to e-cigarette smoking (*Heldt et al.*, 2021). The chemicals in e-cigarettes will enter the body through the blood vessels. Blood vessels are components of the vascular system which are crucial to the flow of blood throughout the body. Endothelial cells line the vessels and produce nitric oxide to keep blood vessels healthy and control blood pressure. There is a decrease in nitric oxide production in both e-cigarette and traditional cigarette users. This makes them both responsible for heart damage and high blood pressure (*American Heart Association News*, 2021). Smoking can also cause lung disease, skin related changes, head and neck region cancers (*Gehrig*, 2018).

Dental professionals have the unique ability to closely observe patients and monitor their oral health. They have received training to identify and educate tobacco users. Tobacco usage is one of the leading preventable causes of various diseases and cancers. It is important to inform patients during their dental visit so they may be motivated to quit. It is the dental professionals' duty to prioritize the health and wellbeing of patients. This could potentially save their lives or prevent progression of existing conditions.

Nicotine's highly addictive properties make quitting extremely challenging for its users. Dental professionals must realize that nothing should be forced upon patients, as real changes begin with the patient. What the dental professional can do is provide support, encouragement, and education. As reported by the CDC, "In 2018, 55.1% of adult smokers (21.5 million) said that they had made a quit attempt in the past year" and "In 2015, 68.0% of adult smokers (22.7 million) said that they wanted to quit smoking". Based on this information, many smokers have considered quitting or attempted to quit. If I spoke with a patient who has been smoking for 12

years, I would talk to the patient with an open and judgment-free mind. It is essential to inquire about their smoking history, potential triggers, and desire to quit. For the patients who do not display interest in quitting, I would still try to educate them about the effects of smoking and potential health effects. In addition, I will provide details about proactive telephone support, in-person behavioral support groups, and printed self-help materials on tobacco cessation (*West et al.*, 2015).

The US Food and Drug Administration (FDA) lacks regulations regarding e-cigarettes and the dangers they pose. The prevalence of smoking has decreased since the introduction of warning labels on package cigarettes. For non-smokers, the admonition diminished their probability to begin smoking. However, some manufacturers are not required to include warning labels because e-cigarettes are not fully regulated. Often these labels are wordy and exist in narrow fonts which challenges its validity. Therefore, these unregulated labels are not having the desired effect on their users, particularly college students, who use non-traditional tobacco products at the highest rate (*Lee et al.*, 2018). According to research, adolescents are drawn to flavored e-cigarettes. They perceive fruit-flavored electronic cigarettes as being safer for their health. It has been reported that adolescents are more likely to accept menthol-flavored e-cigarettes from friends (*Pepper et al.*, 2016). I would speak to an adolescent who has just started smoking similarly to how I would speak to an adult patient. Meanwhile, placing emphasis on how challenging it can be to quit smoking after a long period. Adolescents easily succumb to peer pressure and influence, so it is essential to ensure they are confident in themselves. Children are significantly influenced by their parents. Asking parents to teach their children about the adverse effects and dangers of smoking along with example setting is crucial. Dental

professionals may use the recommended Five A's Model (ask, advise, assess, assist and arrange) as a guideline to treating tobacco use and dependence (*Gehrig, 2018*).

Globally, millions of people participate in tobacco usage. The number of lives lost yearly due to tobacco use is expected to rise. In the mouth, it causes rapid biofilm accumulation, enamel demineralization, staining, and aggressive periodontal disease. It is also linked to diseases and cancers that affect multiple systems. Tobacco cessation methods have demonstrated their effectiveness in preventing diseases and deaths caused by tobacco use. With the collaborative effort of the patients and dental professionals, we can provide the patients with care that contributes to their long term wellbeing.

Reflection:

This assignment provided great insights into the effects of using tobacco. While taking a gander at the statistics, it is shocking to see the number of lives claimed yearly and terrifying to imagine that it will continue to increase. The impacts of tobacco usage affects various systems in the body and may lead to premature death. We all know and have people in our lives that have been smoking for years and do not display willingness to quit. I am a firm believer that nothing is black and white. Someone else's situation is not my own and oftentimes it is easier said than done. Although I am not a cigarette smoker, I will make my best effort to be understanding and compassionate. I learned about tobacco cessation strategies such as the 5 A's, counseling and self help materials. These have provided me with great understanding on how to successfully discuss tobacco cessation with my patients and how the role of the dental professional comes into effect. Despite my tendency to be reserved, I am aware that as a future hygienist, I will need to

communicate with patients and establish rapport with them. There is a quote by Sir Francis Bacon that says “Knowledge is power”. It is fitting because this assignment allowed me to expand my knowledge on the topic to convey it confidently to the patients.

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