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Risk Assessment of Vaping

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Risk Assessment of Vapes

Gillian Eshelman

BIOL364: Perspectives in Toxicology (Instructor: Dr. Erin Shanle), Longwood University

Background

- A vape is an electronic device that simulates tobacco smoking.
- Instead of smoke, the user inhales vapor.
- The United States is the largest and fastest growing vape market in the world (1)
- Age to purchase vapes was raised from 18 to 21



Specific Aim

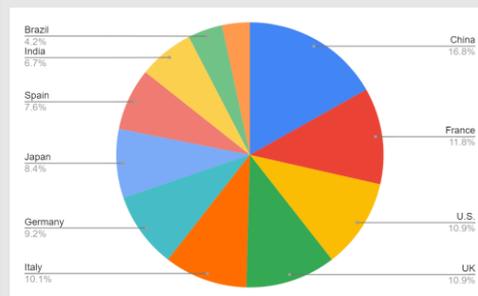
The aim of this study was to develop a perspective on the risk management of vapes using multiple perspectives

Methods



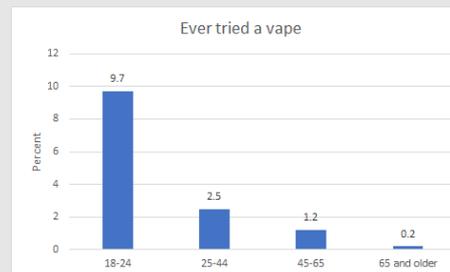
Results

- Some of the toxic chemicals found in vapes are nicotine, propylene glycol, acetaldehyde, formaldehyde, acrolein, diacetyl, diethylene glycol, nickel, tin, lead, cadmium, and benzene (2)
- The lethal dose of nicotine for the average adult is 50 to 60 mg
- Any dose of inhaled diacetyl can be potentially lethal
- Anyone who vapes is exposed to various amounts of toxins
- Secondhand smoking leads to more than thousands of deaths every year (3). In infants and children, it can lead to death and lung issues while in adults it can lead to stroke, heart disease, and lung cancer, even in people who never smoked themselves (3).
- The world has 20.8 million vapers
- Two-in-ten Americans aged 18-29 vape



• **Figure 1.** Percentage of who vapes by country

• **Figure 2.** Who has tried a vape by age



Conclusions and Future Directions

- Vapes help traditional cigarette smokers quit
- Instead of banning or overregulating vapes, consumers should be well educated by manufactures on the dangers and side effects of vaping



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