



# The Association between Frequency of Smoking and Withdrawal Symptoms

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## Introduction

- Smoking is highly addictive and may cause withdrawal symptoms such as depression, anxiety, difficulty sleeping, difficulty concentrating, eating disorders, and restlessness (CDC, 2022)
- CDC estimates that there are currently over 20 million smokers who are trying to quit at any given time (CDC, 2022)
- Smoking remains the leading cause of preventable diseases, disability, and death (CDC, 2022)
- The addictive substance found in the commonly used smoking devices (cigarettes, cigars, pipes, and vapes) that has been found to amplify addiction is nicotine (Picciotto & Kenny, 2021)
- Curiosity and association with smokers' main causes for smoking (Icmeli et al., 2016 )
- smokers tend to reduce smoking following a failed self-initiated quit attempt, which is possibly motivated by the need to improve health and/or facilitate future quitting (Yong et al., 2008)

## Research Questions

- Is there an association between the frequency of smoking and withdrawal symptoms?
- Does gender moderate the relationship between frequency of smoking and withdrawal symptoms?

## Methods

### Sample

- Wave 1 of NESARC included responses of 43,093 individuals, all different ages, gender, ethnicity to ensures that the data accounts for all individuals and not a specific group of individuals

### Measures

- Frequency of smoking was assessed using data related to questions asking how frequently smokers use cigarettes, cigars, and pipes. Responses are categorical and range from everyday smoking to no smoking)
- Each withdrawal symptom coded dichotomously in which the responses were categorical (yes or no)
- Gender of individuals categorical (1=male, 2 female)

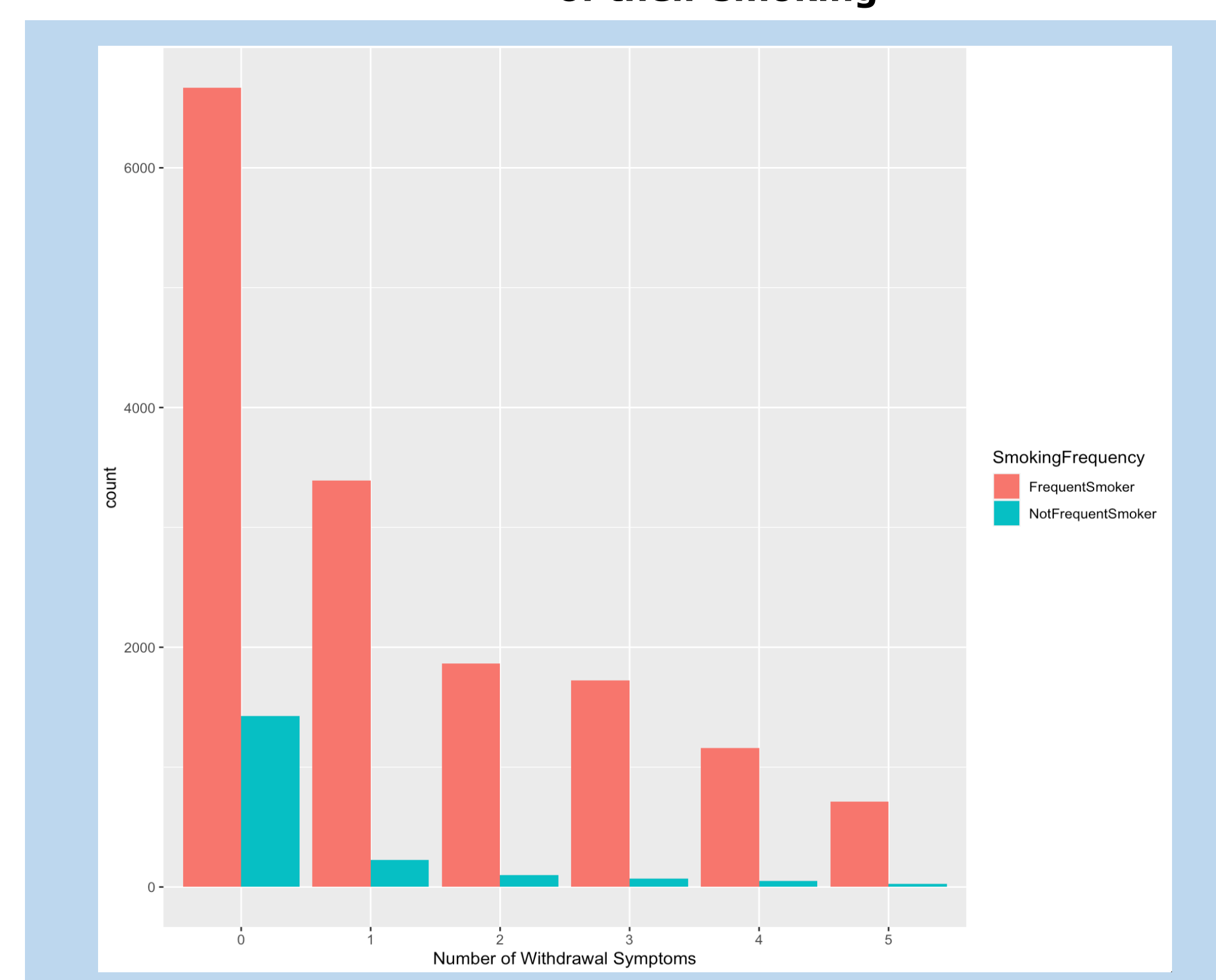
### Univariate

- 89.24% of respondents are frequent smokers and 10.76% of respondents are non-frequent smokers
    - Frequent smokers are classified as smoking at least 3 times a week
    - Non-frequent smokers are classified as smoking 2 or less times a week
- 42.97% of respondents are male, while 57.03% of respondents are female

### Bivariate

- ANOVA analysis showed that **smoking frequency** was significantly associated with the **number of withdrawal symptoms a person will experience following smoking cessation** ( $F(1, 17415)=512.8$   $p<2e-16$ ).

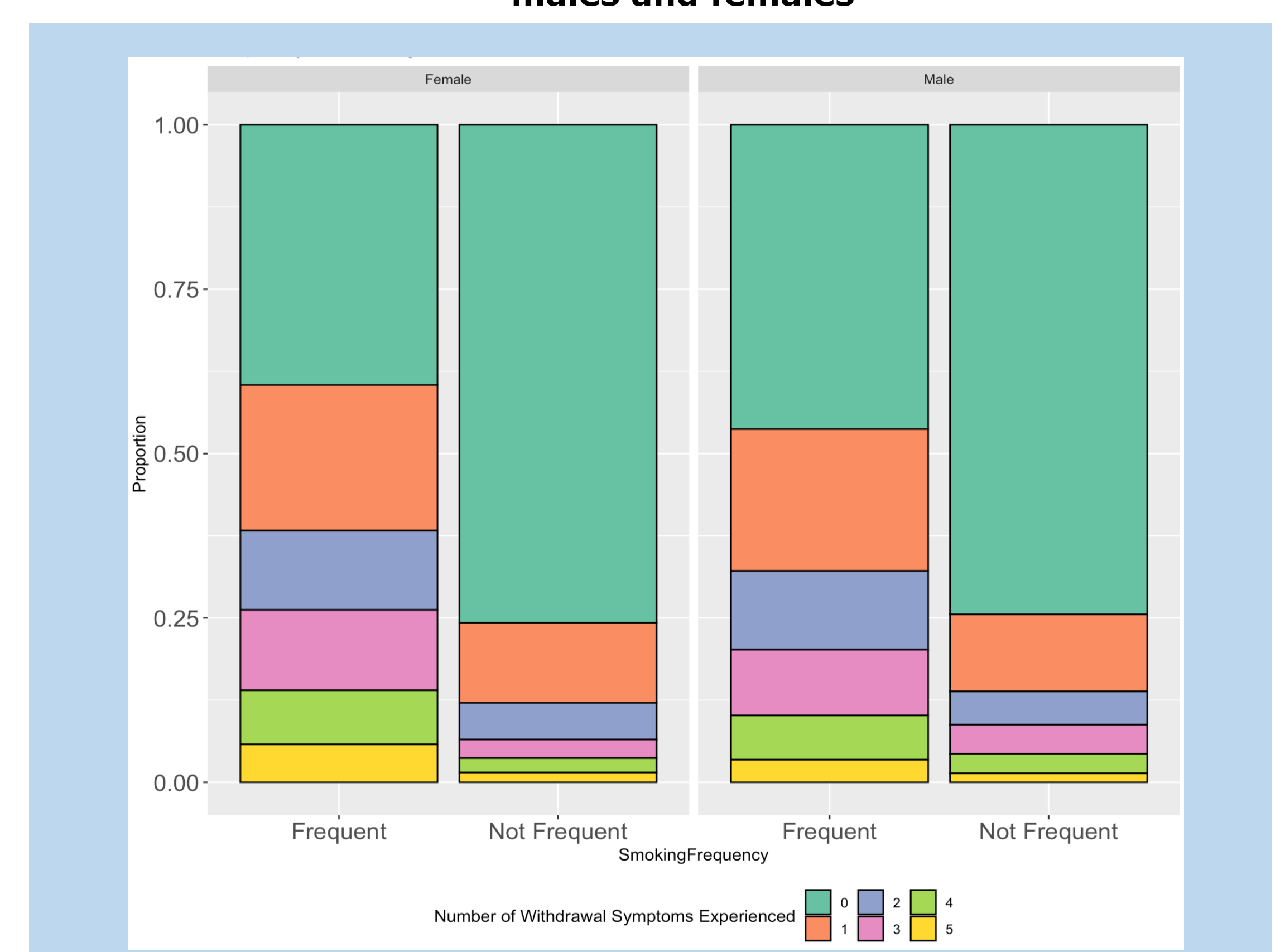
Figure 1. Number of withdrawal symptoms a person is most likely to experience based on the frequency of their smoking



### Logistic Regression

A Logistic Regression revealed that frequent smokers are 1.8 times more likely to experience withdrawal symptoms than non-frequent smokers ( $P=0.000257$ )

Figure 2. Number of withdrawal symptoms experienced based on frequency of smoking for males and females



## Discussion

- Frequent smokers are more likely to experience a higher number of withdrawal symptoms than non-frequent smokers.
- Gender appears to modify the relationship between frequency of smoking and the number of withdrawal symptoms a person will experience post cessation of smoking.
- This information has the potential to facilitate the enlightenment of individuals about the hazards of smoking and ultimately, dissuade them from engaging in the bad habit.
- Further research could be conducted to determine what withdrawal symptoms an individual is most likely to experience based on the frequency of their smoking.