

STAT 578 - Advanced Bayesian Modeling - Fall 2019

Data Analysis Assignment

Xiaoming Ji

Introduction

Marijuana (formally cannabis) is a psychoactive drug from the Cannabis plant used for medical or recreational purposes. The immediate desired effects from consuming cannabis include relaxation and euphoria (the “high” or “stoned” feeling), a general change in perception, heightened mood, and an increase in appetite. Due to this characteristic, it is the most widely used illegal drugs in the world. In 2013, between 128 and 232 million people used Marijuana (2.7% to 4.9% of the global population between the ages of 15 and 65). The short-term side effects by Marijuana may include a decrease in short-term memory, impaired motor skills, red eyes, and feelings of paranoia or anxiety. Long-term side effects may include addiction, decreased mental ability in those who started regular use as teenagers, and behavioral problems in children whose mothers used marijuana during pregnancy. Due to this reason, the possession, use, and cultivation of cannabis is illegal in most countries of the world. ¹

Marijuana use hurts brain functioning in adolescents, this is added concern because adolescence is an important time in development brains by building the connections to improve executive functioning. In addition, research found adolescents who begin using marijuana before age 18 are four to seven times more likely than adults to develop a marijuana use addiction. ²

A survey conducted in 2016 on adolescents’ marijuana usage for at least once in the past month reported the following percentage,

- 5% of students in 8th grade
- 14% of students in 10th grade
- 23% of students in 12th grade
- 22% of college students and young adults

From 2007 to 2017, marijuana use among adolescents has increased in the past 10 years for students in 12th grade. ³

Data

First Model

Second Model

Conclusions

Appendix

Footnotes

¹Based on content from Wikipedia, [https://en.wikipedia.org/wiki/Cannabis_\(drug\)](https://en.wikipedia.org/wiki/Cannabis_(drug))

²Based on content from U.S. Department of Health & Human Services, <https://www.hhs.gov/ash/oah/adolescent-development/substance-use/marijuana/risks/index.html>

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