

Deliverable 1 – Health Analytics Project Proposal

Anti-Depressants Link to Heart Disease

Sergiy Palguyev

spalguyev3@gatech.edu

1. *Clinical Question*

1.1. *What is the question you are trying to answer?*

Do patients on anti-depressant medication have a higher chance of contracting heart disease than those who are not medicated?

1.2. *Why is this question significant or interesting?*

Depression and Heart Disease have been linked together for a long time. It is well known that depressed patients are at a higher chance of receiving heart disease, and conversely, patients with heart disease often suffer from depression. What is not known, however, is whether the drugs which help curb depression contribute to an increased chance of heart disease. Do some anti-depressants have a higher effect on heart disease than others? If any direct cause and effect relationship is determined, is the cause of the drug alone, a drug-drug interaction, or the change in psychological state and stability?

2. *Background*

This study has immense significance due to sheer statistics of these diseases. According to the Center for Disease Control, heart disease is the leading cause of death for people of all sexes and most racial groups in the United States. The disease accounts for 1 in every 4 deaths and is estimated to cost the United States approximately 2019 billion yearly in health care medicine and productivity costs [1].

Conversely, depression is one of the leading mental disorders in the United States, with almost 17.4 million people diagnosed [2]. The most common form of prescribed anti-depressants are selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs) [3]. Some studies point to over-prescribing of anti-depressants by almost 24% with almost 1 in 10 people taking an anti-depressant in the United States [4]. Anti-depressants are not the safest drugs. Most warnings cautioning against weight-gain, increase in depression or suicidal thoughts, or other psychological trouble.

Considering the most common physiological and psychological diseases plaguing the United States today, is there a possible correlation between

treatments of one on increasing the chance of the other occurring. Namely, does treating depression with anti-depressant drugs increase the chance of heart disease for the patient?

3. *Describe Your Cohorts*

3.1. *Target Cohort*

Target cohorts are patients with clinically diagnosed depression which are prescribed common anti-depressant medication such as SSRIs or SNRIs.

3.2. *Comparator Cohort*

Comparator Cohorts are patients with clinically diagnosed depression which are not prescribed any anti-depressant medication, instead receiving psychotherapy or other mode of treatment.

3.3. *Outcome Cohort*

The outcome cohort is patients who develop heart disease.

4. *Additional Comments*

Children will not be assessed as part of this study, with the age group consisting of adults ages 18-65.

Patients who presented heart disease prior to being diagnosed with depression will also not be considered since their future heart disease to depression correlation will be much more difficult to classify.

References

[1] Heart Disease Facts. (2019, December 2). Retrieved from

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[2] Cagliostro, D. (n.d.). Depression Central: Types, Causes, Symptoms, Statistics, & Treatment. Retrieved from <https://www.psycom.net/depression.central.html>

[3] Antidepressant Addiction and Abuse - Addiction Center. (n.d.). Retrieved from <https://www.addictioncenter.com/stimulants/antidepressants/>

[4] Bobo, W. V., Grossardt, B. R., Lapid, M. I., Leung, J. G., Stoppel, C., Takahashi, P. Y., ... Sutor, B. (2019, January 23). Frequency and predictors of the potential overprescribing of antidepressants in elderly residents of a geographically defined U.S. population. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6344796/>