

# Lowering Depression and Anxiety: A Quantitative Research on the Relationship of Seven Common Habits on Human's Mental Health

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## I. INTRODUCTION AND PROBLEM STATEMENT

Depression and anxiety are two widespread types of disorders that endures a tremendous consequences on patients themselves, their family, and their society. The World Health Organization (WHO) has ranked depression as the fourth leading cause of human disability and by 2020, it reaches to second leading cause [6]. It is well known that depression causes health degradation [11] and directly causes cardiovascular diseases [3]. A recent study in 2017 showed that depression increases the risk of cardiovascular by 80% [8]. In case of anxiety, in average, up to 33.7% of the human populations experiences anxiety [2] in their life time. Anxiety's affects go beyond physical and it causes learning and reasoning incapacities [9][4]. This proposal analyzes data from the Behavioral Risk Factor Surveillance System (BRFSS), collected in several years. It tries to find a relationship between six habit factors (physical activity, binge eating disorder, smoking, drinking alcohol, and social media/technology) and depression and anxiety. It proposes a solutions that could lead to reduction of depression and anxiety in the society.

## II. OBJECTIVE

### ◦ *What this research is trying to accomplish?*

Identifying the relation between the six factors and depression and anxiety. And provide guidelines based on the six factors to reduce depression and anxiety in the human life.

### ◦ *How is research in this field is done today; what are the limits of current practice?*

Currently, research papers in human disorder, analyzes few habit factors and mainly focused on depression or anxiety. (Hadi: more to be written)

### ◦ *What's new to this research? Why will it be successful?*

This proposal touches more comprehensive number of habits and the outcome of the research provides guidance for larger body of human society. The key to success of this research is data and linking data to the right conclusion. Thanks to the BRFSS data and many researches done in this field, this research will reach to a scientific conclusion that provide guidelines for society to avoid or reduce depression and anxiety. That is the success of this research.

### ◦ *Who cares?*

The general public, medical society, insurance industry, and corporation. Depression and anxiety are felt in each and

every part of the human life and it is in interest of all above mentioned to control or reduce outcome of anxiety and depression affect.

### ◦ *If this research is successful, what difference and impact will it make, and how do you measure them?*

The success of this research will provide guidelines for different sectors of human society to avoid anxiety and depression and identify them at the early stage of disease. It will provide recipes to various human resource organization on how to avoid anxiety and depression. Surveys such BRFSS and local and internal surveys can provide a great measure on how this research impacted them.

### ◦ *What are the risks and payoffs?*

The risk is to convince mass public, human resource organizations, and small to large companies that the results of this research will indeed assist them get better and faster results. The payoffs is happier work, happier life, happier families, and happier society.

### ◦ *How much will it cost?*

The biggest cost is the time. The data is available, but it needs to be cleaned, the related information to be extracted, and analyzed. The research, at this preliminary stage, anticipates 150 to 200 hours of scientific work.

### ◦ *How long will it take?*

The proposal touches the tip of the ice of controlling and identifies anxiety and depression. This research starts with what data is currently available and pave the path to larger research in the field of mental disease. This proposal can be done in one to two quarter of a year.

### ◦ *How will progress be measured.*

The progress of this research is measured by first establishing a clear connection between the six habits and anxiety and depression. Second understanding how these factors can decrease anxiety and depression. And third provides the golden guidelines for various parties.

## III. LITERATUR REVIEW

## IV. METHODLOGY

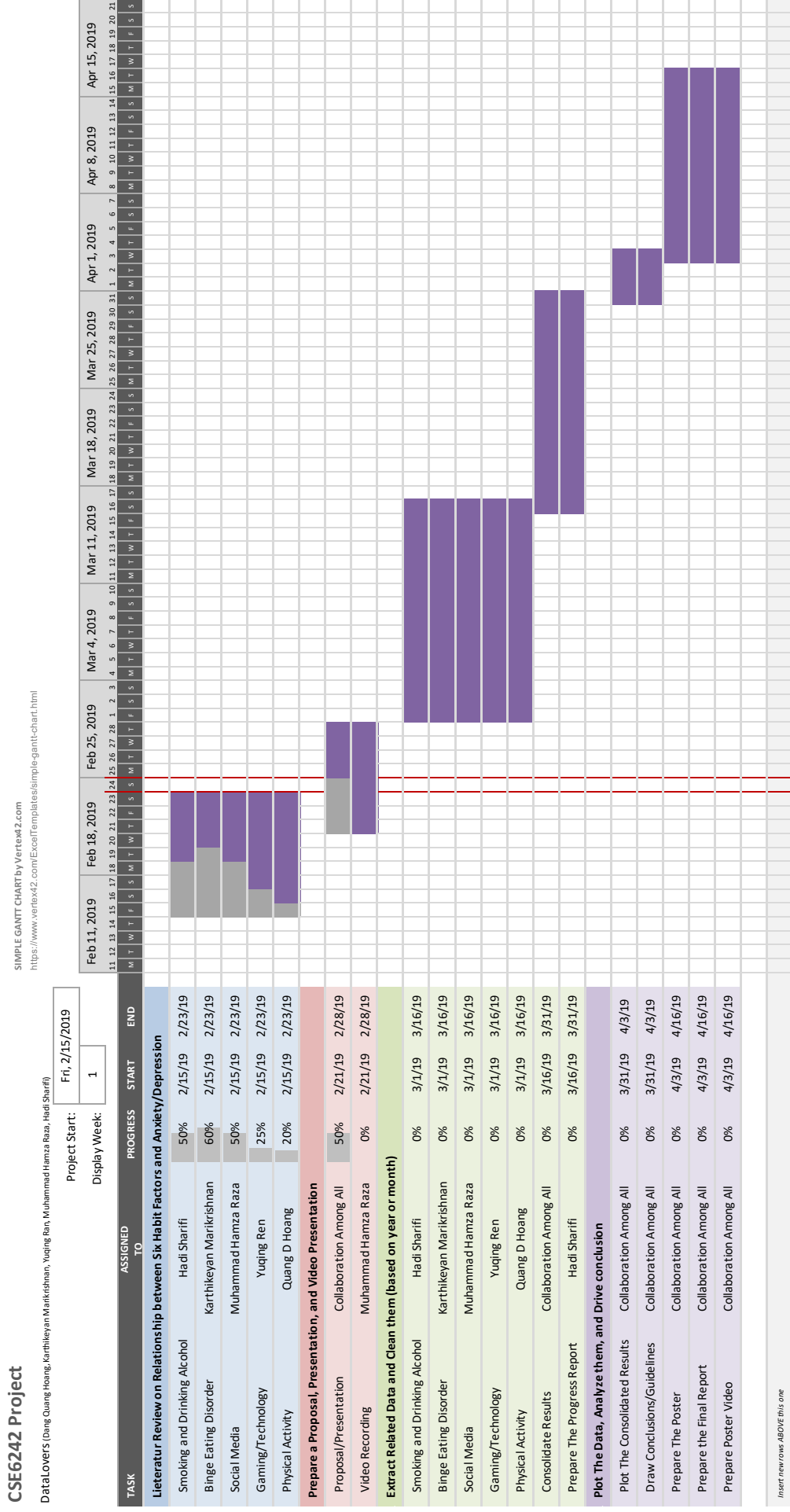
The research requires analyzing large data that are not clean and not organized in a traditional database concept we

are familiar with. The main task of our team is extract data from the assigned topic, clean the data, put it a format that all other teammates will agree upon. From that point, we analyze the data and drive conclusions. Our conclusion will be the blue print for the guidelines we will prepare as the outcome of this research. Figure 1 shows the details on how various tasks are distributed among team members and how the timeline is formed to reach all the deadlines.

○ *The effects of alcohol abuse and smoking?*

With regards to association between drinking alcohol and anxiety and depression, in our literature review, we studied four papers. Three of these research papers [5][10][1] corroborated our hypothesis that abusing alcohol and smoking leads to anxiety and depression. Two of the researches used the BRFSS data set that we are going to use in our research too. We are going to use these three papers for our research. Almost all of them mentioned as shortcoming that more than one or couple variable affects human's mental health. Interestingly, one research from 96 advised school to look into using smoke to help teenagers cope with depression. We are not going to use this paper. The conclusion from this paper relates to paper [7] that explains of chained mediation in which people go to drinking or smoking to cope with depression but that increases their symptoms through time.

# CSE6242 Project



## REFERENCES

- [1] Nicholas P Allan, Brian J Albanese, Aaron M Norr, Michael J Zvolensky, and Norman B Schmidt. Effects of anxiety sensitivity on alcohol problems: Evaluating chained mediation through generalized anxiety, depression and drinking motives. *Addiction*, 110(2):260–268, 2015.
- [2] Borwin Bandelow and Sophie Michaelis. Epidemiology of anxiety disorders in the 21st century. *Dialogues in clinical neuroscience*, 17(3):327, 2015.
- [3] Steven M Bradley and John S Rumsfeld. Depression and cardiovascular disease. *Trends in Cardiovascular Medicine*, 25(7):614–622, 2015.
- [4] Shane Darke. Effects of anxiety on inferential reasoning task performance. *Journal of personality and social psychology*, 55(3):499, 1988.
- [5] Haomiaojia, Matthew M Zack, Irving I Gottesman, and William W Thompson. Associations of smoking, physical inactivity, heavy drinking, and obesity with quality-adjusted life expectancy among us adults with depression. *Value in health*, 21(3):364–371, 2018.
- [6] Ronald C Kessler and Evelyn J Bromet. The epidemiology of depression across cultures. *Annual review of public health*, 34:119–138, 2013.
- [7] George C Patton, Marianne Hibbert, Malcolm J Rosier, John B Carlin, Joanna Caust, and Glenn Bowes. Is smoking associated with depression and anxiety in teenagers? *American journal of public health*, 86(2):225–230, 1996.
- [8] Brenda WJH Penninx. Depression and cardiovascular disease: epidemiological evidence on their linking mechanisms. *Neuroscience & Biobehavioral Reviews*, 74:277–286, 2017.
- [9] Charles D Spielberger. The effects of anxiety on complex learning. *Anxiety and behavior*, page 361, 2013.
- [10] Tara W Strine, Ali H Mokdad, Lina S Balluz, Olinda Gonzalez, Raquel Crider, Joyce T Berry, and Kurt Kroenke. Depression and anxiety in the united states: findings from the 2006 behavioral risk factor surveillance system. *Psychiatric services*, 59(12):1383–1390, 2008.
- [11] Swapna K Verma, Nan Luo, Mythily Subramaniam, Chee Fang Sum, Dorit Stahl, Pei Hsiang Liow, and Siow Ann Chong. Impact of depression on health related quality of life in patients with diabetes. 2017.