

The Effect of Diet and Exercise on Self-Motivation and Mood

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Abstract

- This study aims to analyze the relationship that diet and exercise have on a person's mental distress and self-motivation.
- An anonymous online survey was administered through Google Forms. A total of 182 individuals completed the survey, which included questions on the frequency and quality of exercise, consumption of specific food groups, mood, and self-motivation.
- Results showed:
 - A positive correlation between increased processed food consumption, depressed or nervous mood, and lack of motivation ($p < 0.01$).
 - A negative correlation between the frequency of exercise and the ability to set and accomplish goals ($p < 0.01$).
 - A positive correlations between eating fruits & green leafy vegetables and ability to set and accomplish goals ($p < 0.01$)
- Overall, these results suggest that certain factors of diet modulation and exercise can improve motivation and well-being of an individual.

Introduction

- Mental health conditions are extremely prevalent in today's society, affecting around 23% of U.S. adults (2022)^[12]
- Diet and exercise are known to be factors that impact mood, motivation, and mental wellbeing^[6]
- High intake of processed foods is associated with increased risk of depression and anxiety due to the amount of inflammation it produces within the body^{[2][4]}
- Having a balanced diet (such as Mediterranean, DASH, low-GI) significantly improve mood and depressive symptoms via the anti-inflammatory response and neurotransmitter-related effects that whole foods provide^{[2][5][8]}
- Even short exercise sessions (10–20 min) help improve mood and motivation by the release of certain mood boosting hormones/neurotransmitters, which is especially important for those who struggle with depressive symptoms^{[11][7][9]}
- Increased motivation is directly tied to the act of goal setting and accomplishment
- Our goal is to further study the effects of diet and exercise on mental health and motivation, specifically focusing on the consumption of whole foods and the frequency of exercise

Methods and Demographics

A total of 182 respondents participated in our survey titled "A questionnaire to study the effect of the diet, exercise frequency on mental distress and self-motivation," which was sent out using text messages, Instagram, Slack, GroupMe, and Facebook. Statistical analysis of responses was conducted using Pearson's Correlation Analysis with SPSS version 28.0.

Gender:

- 117 female, 63 male, 2 other

Age:

- 158 aged 18-29, 4 aged 30-39, 6 aged 40-49, and 14 aged 50 or above

Location:

- 178 in North/Central America
- 2 in Europe, 1 in South America, 1 in Asia

Education:

- 4 completed less than high school, 81 completed high school, 80 completed 2-4 years of a college degree, 14 completed a masters degree, 3 completed a professional degree

Figure 1. Ages of participants who completed questionnaire.

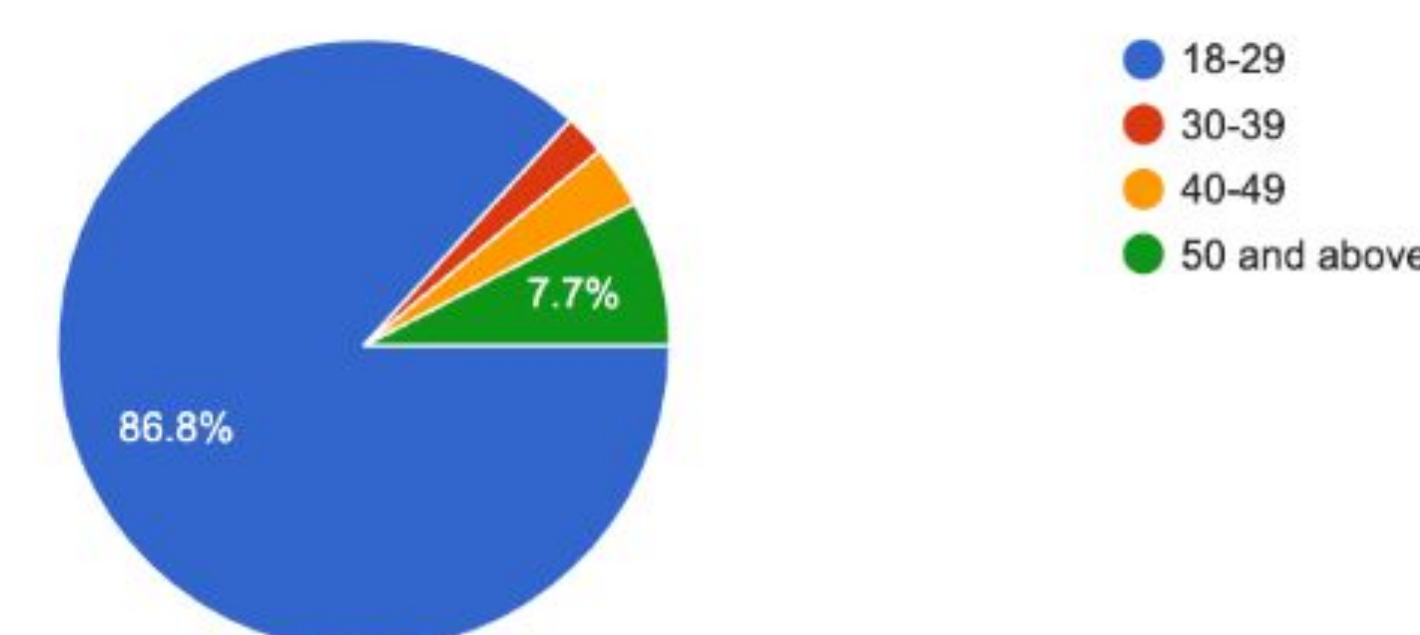
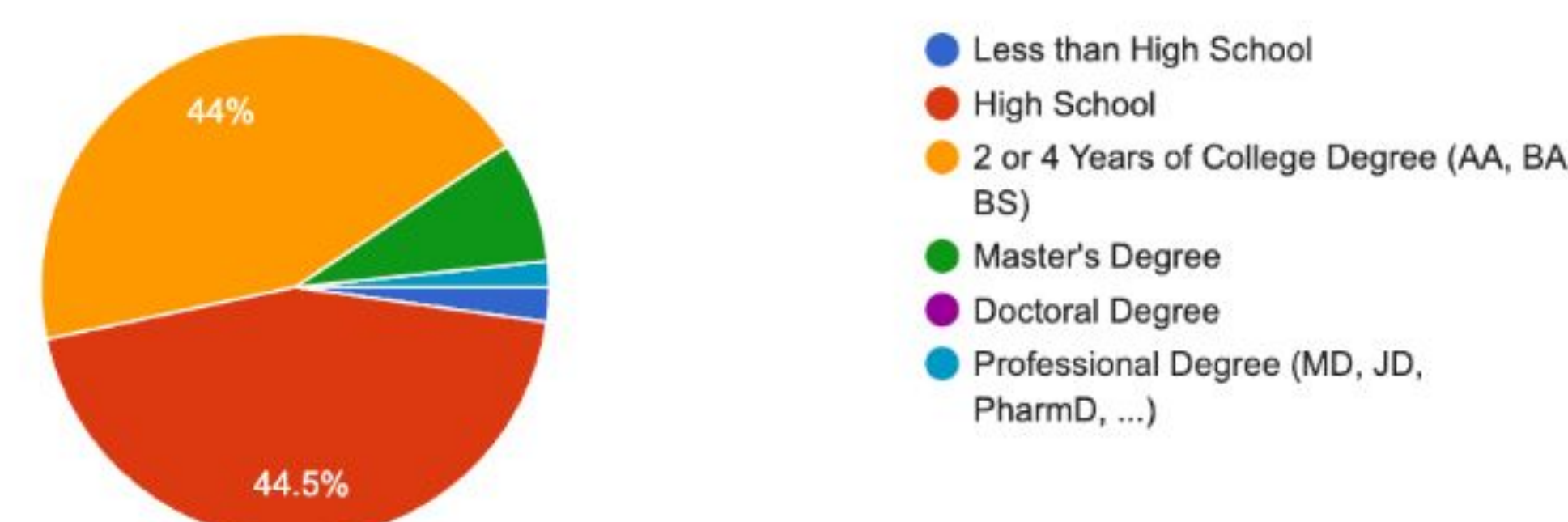


Figure 2. Highest level of education completed by participants who completed questionnaire.



Results

Figure 3. Number of times processed foods are consumed, on an average week.

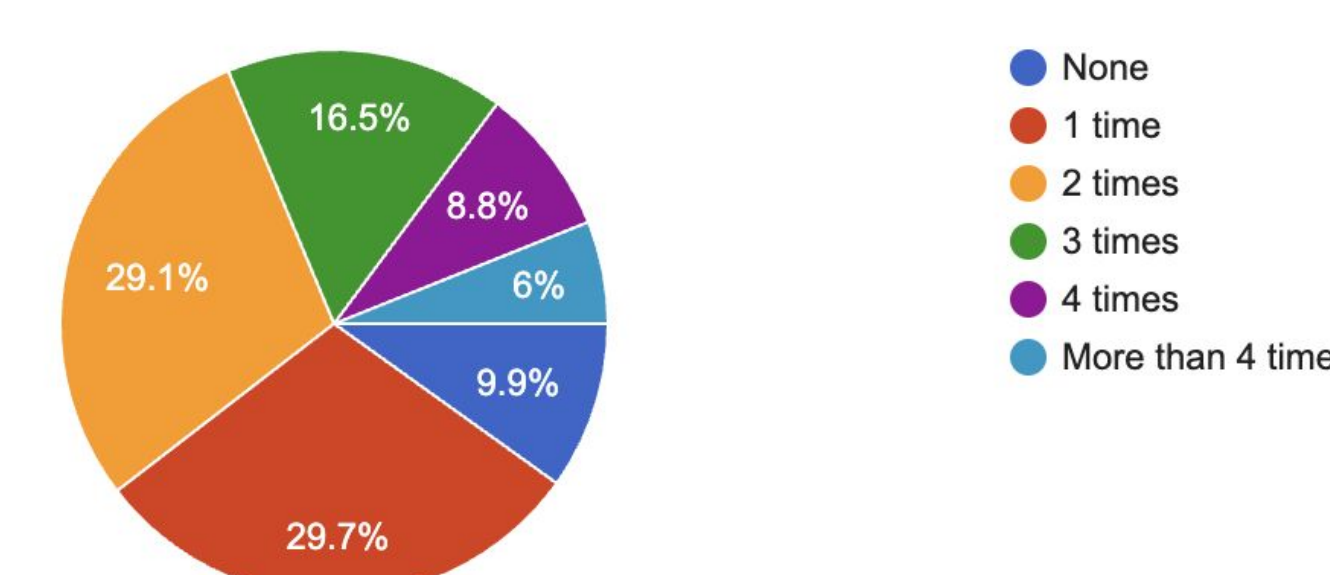


Figure 4. Number of times participants exercised, on an average week.

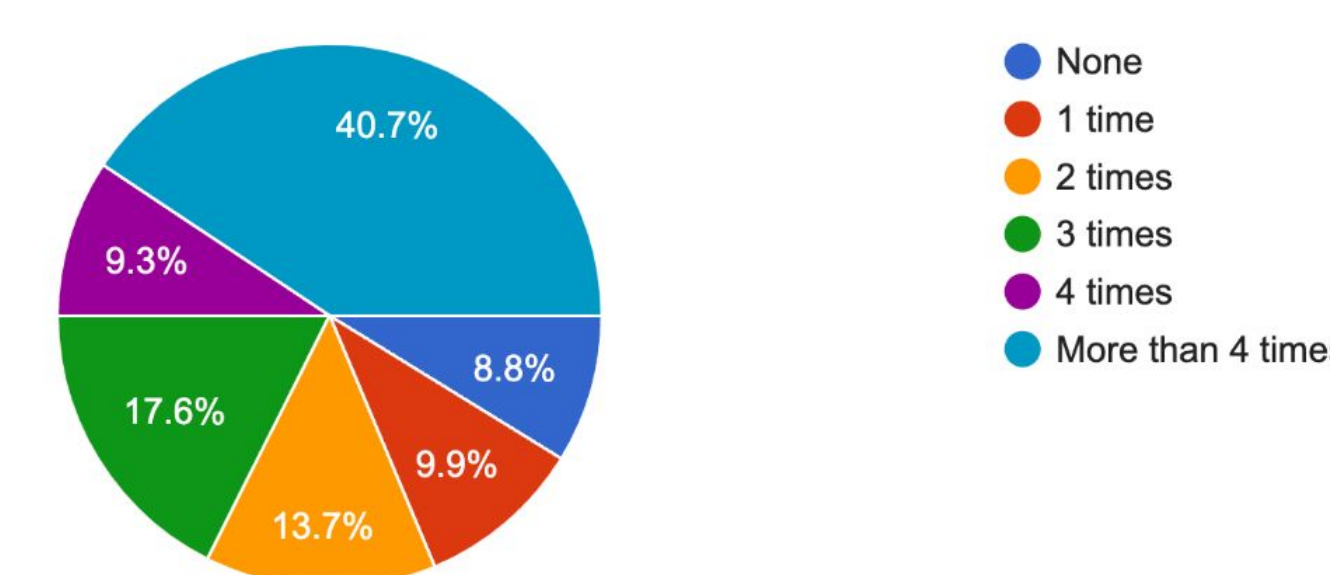
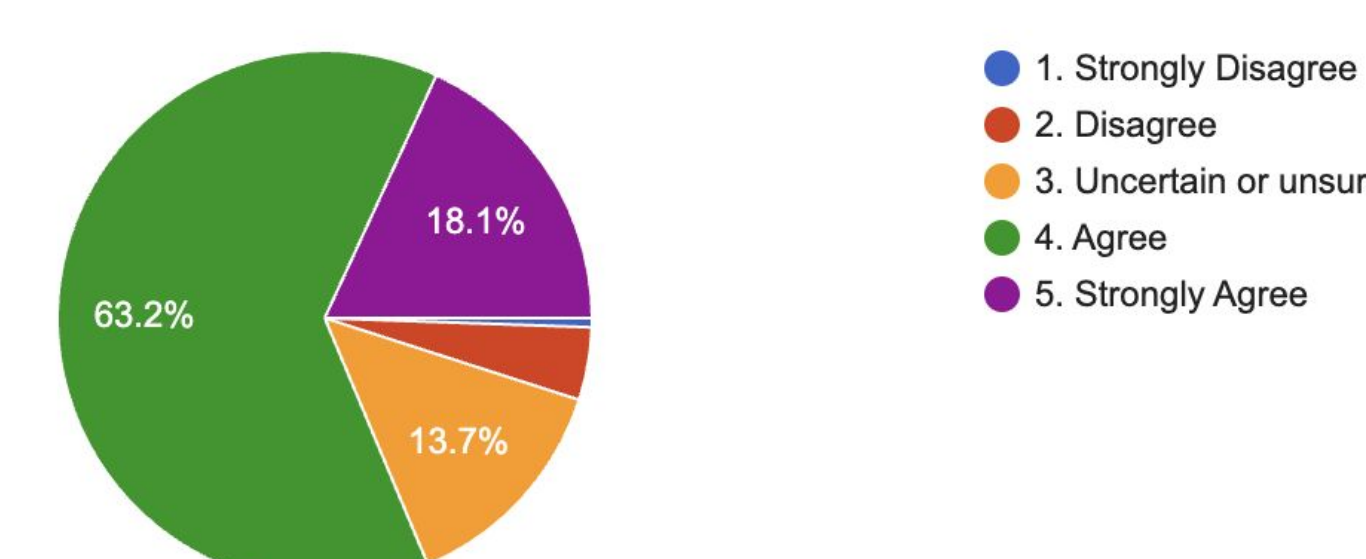


Figure 5. Rating of ability to accomplish goals set for oneself.



Discussion

Diet and exercise play an important role in mood, motivation and overall mental health^[6]. A healthy diet would be considered whole foods, such as fruits, vegetables, whole grains, lean protein, and healthy fats^[5]. Exercise is any form of physical activity that stresses your body without causing lasting inflammation or injury. A significant positive correlation was found between processed food consumption and feelings of depression. A significant negative correlation was found between exercise frequency and not being able to accomplish your goals.

- Feelings of depression is correlated with the consumption of processed foods
- Not being able to accomplish your goals is correlated with little to no exercise
- Being able to accomplish your goals is correlated with the consumption of fruits and vegetables
- Diet and exercise may be the deciding factor for these correlations

Future Work and Limitations

Future Work:

- Which whole foods and exercises promote mood regulation and mental health?
- Further classification of exercises (aerobic, physical) and intensity of exercises.
- Larger sample size across many populations.

Limitations:

- Our main limitation is the small sample size of 182 people
- Most people (158) were 18-29 years old
- Many broad range questions

Conclusion

- Strong relationship between eating processed foods and developing feelings of depression, in addition to frequency of exercise and motivation toward goal accomplishment
- Processed food contributes to increased inflammation, which is associated with depressive symptoms
 - Encouraged that diet is filled with nutritious whole foods to maintain good mental health^[8]
- Those who exercise at a higher frequency were able to have more success in goal setting and accomplishment
 - 10 minutes a day of 60% aerobic exercise is enough to help boost mood, self-esteem, and motivation^[7]

References and Acknowledgements



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