



# Is There a Link Between Consistent Exercise and Symptoms of Depression in College Students'

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## Purpose and Introduction

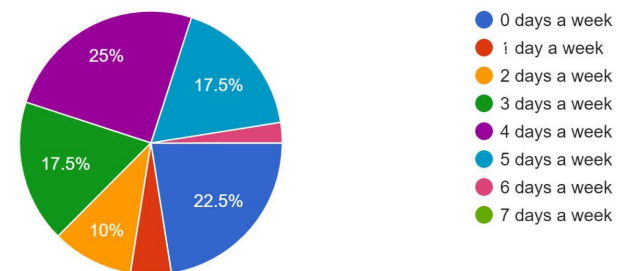
- The purpose of this study is to identify a possible link between consistent exercise and the symptoms of depression in college students.
- Depression is a common condition that presents negative effects on mood and emotions. While incidence of depression is increasingly common in the general public, rates amongst college students are often higher.
- Some studies have shown that regular, leisurely activity reduces incidence of depression. We are particularly interested in if exercise affects the development of depressive symptoms for college students.

## Methods

- Conclusions were made based on the data retrieved from a survey sent through email.
- Survey consisted of questions related to the variables frequency of exercise and symptoms of depression.
- The survey included questions from the PHQ-9 and questions about exercise based on CDC recommendations.
- The population included college students at the University of Dayton.
- A correlational analysis was used to determine if a correlation exists between the variables.

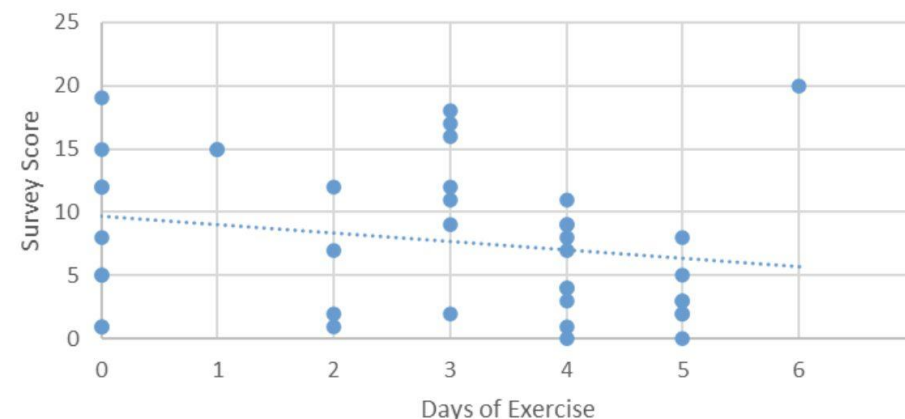
## Results

Over the last 2 weeks, how many days per week do you exercise for at least 30 minutes?  
40 responses



|                       | Days of Exercise | Total Score out of 24 |
|-----------------------|------------------|-----------------------|
| Days of Exercise      | 1                |                       |
| Total Score out of 24 | -0.21137         | 1                     |

Effect of Weekly Exercise Volume on Depressive Symptoms Scores



## Conclusion

- The final sample size consisted of 40 responses. 26 respondents were female, 13 were male, and 1 chose not to share their pronouns. All respondents were in between 19 and 24 years old.
- The pie chart shows the results regarding the number of days each respondent exercise.
- The participants responded to questions from the PHQ-9 regarding depressive symptoms. These answers were coded and then used to run a correlation test against the number of days each participant exercised per week.
- An odds ratio correlation test calculated a score of -0.21. This correlation showed that as days of exercise per week increased, there was a slight decrease in depressive symptoms. A score of 0 would indicate there was neither a positive nor negative effect.
- The results produced a slightly negative trendline (table 1) meaning that increases in the number of days of exercise per week led to slightly lower scores on the survey, and therefore less depressive symptoms.
- This inverse relationship therefore suggests that exercise can inhibit signs and symptoms of depression. While Lack of exercise can allow signs of depression to arise. Our study can be used to spread the importance of exercise as a means to better one's overall well being and health.

## Acknowledgments

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## References

• López-Castro, T., Brandt, L., Anthonipillai, N. J., Espinosa, A., & Melara, R. (2021). Experiences, impacts and mental health functioning during a COVID-19 outbreak and lockdown: Data from a diverse New York City sample of college students. *PLoS ONE*, 16(4). <https://doi.org/10.1371/journal.pone.0249768>

• Ersöz, G. (2017). The Role of University Students' General Self-Efficacy, Depression and Psychological Well-Being in Predicting Their Exercise Behavior. *Journal of Education and Training Studies*, 5(3), 110-117.

• Harvey, S. B., Overland, S., Hatch, S. L., Wessely, S., Mykletun, A., & Hotopf, M. (2018). Exercise and the prevention of depression: Results of the HUNT cohort study. *The American Journal of Psychiatry*, 175(1), 28-36. <https://doi.org/10.1176/appi.ajp.2017.16111223>