Behavior Changes During COVID-19

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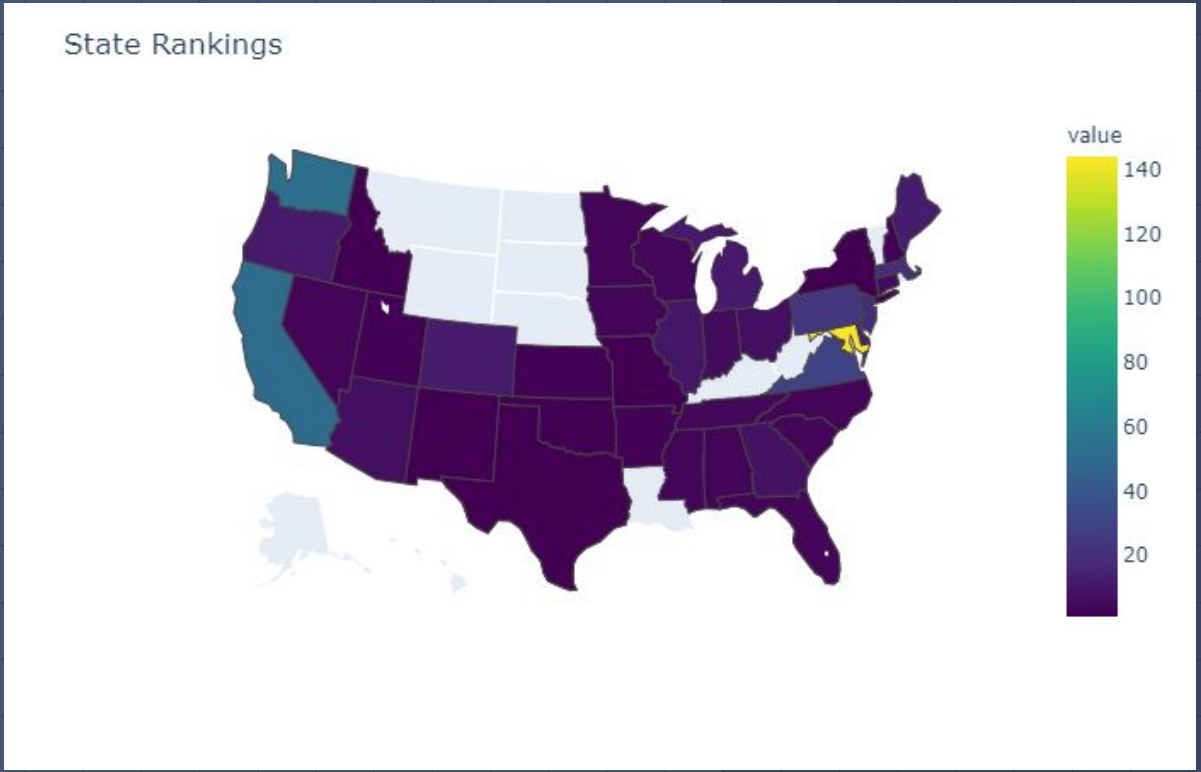
Problem Statement

The COVID-19 pandemic has changed people's exercise and physical activity behavior

25% of Respondents came from Maryland



Tools and Methods

Python

- Data Cleanup

Excel

- Pivot Table
- Visualizations

R Studio

- Data Analysis

What we are looking for:

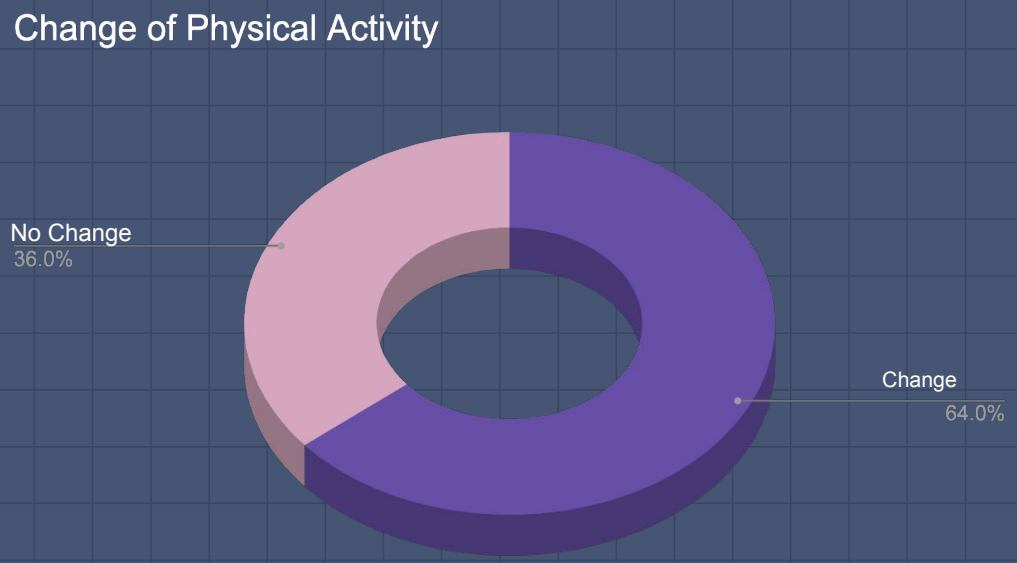
Physical activity before and after lockdown

- Age
- Kids
- Number of people in one home
- Marital status
- Sex

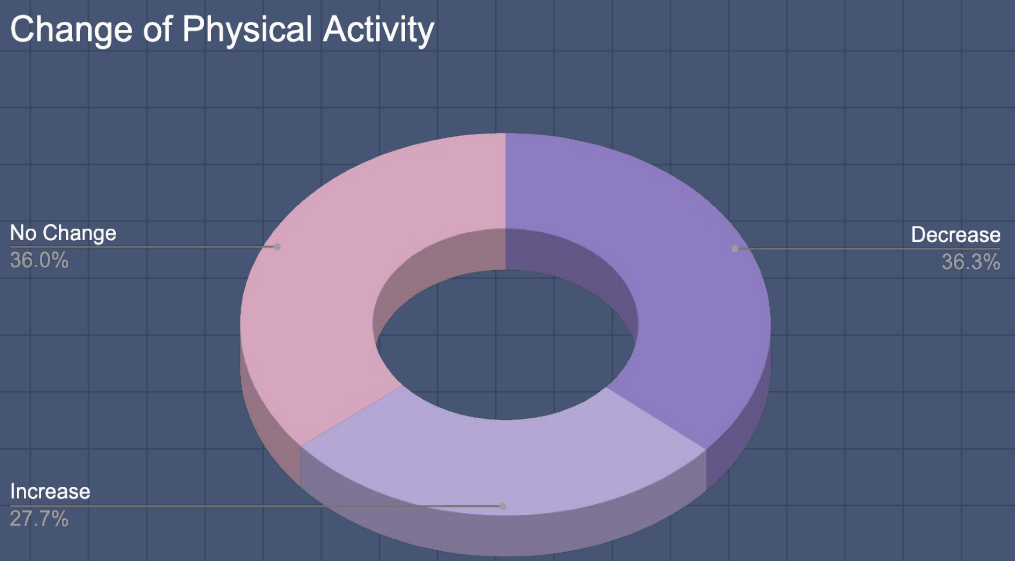
We saw an overall change in physical activity before and after COVID-19.

Let’s take a look at those numbers

We saw that 64% of people changed their physical activity habits



36.3% decreased their physical activity and 27.7% increased their physical activity



Here is what we investigated and found!

- the number of kids
- the type of house they live in
- marital status
- and sex and their correlation with physical activity before and after COVID-19.

Interesting Behavior Changes

The relationship between:

- The number of people in a home and their physical activity.
- Age and physical activity

Let's Start with the number of people in a home

Anova test results:

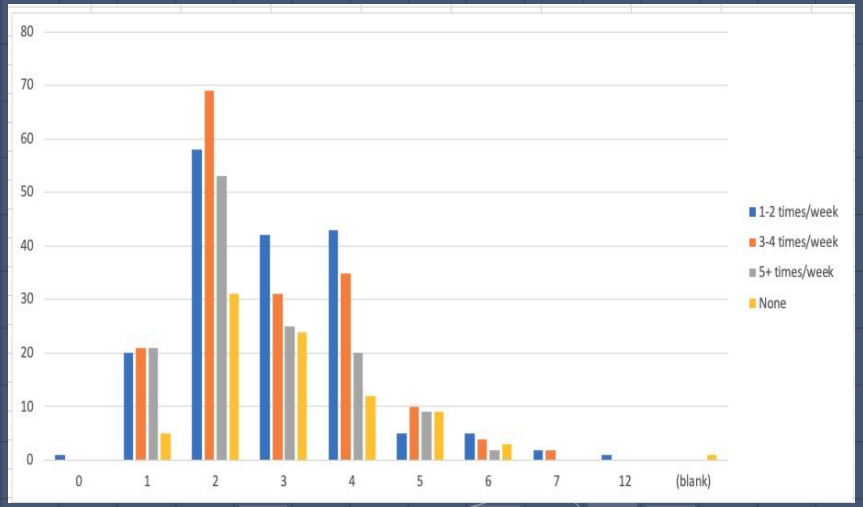
- 95% confidence interval
- Before covid: Yes (p-value = .023)
- After covid: No (p-value = .087)

What does this mean?

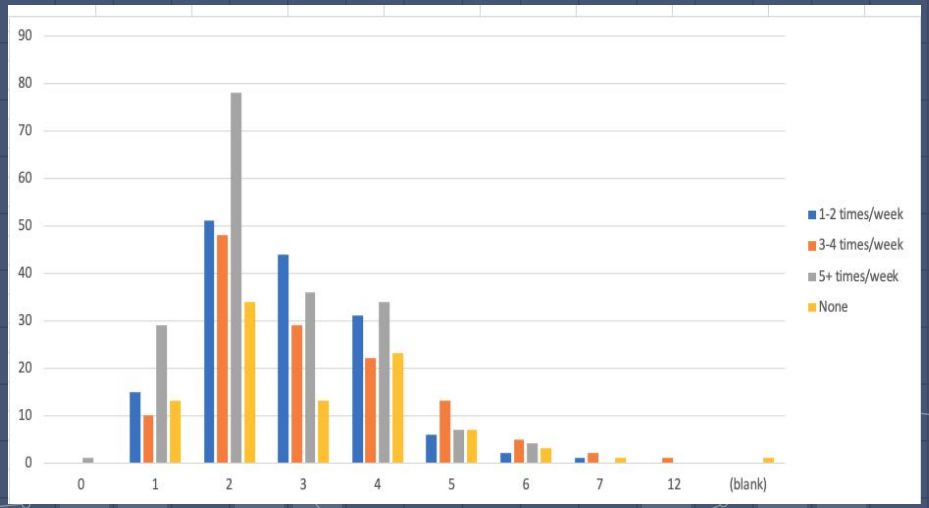
- Before covid: We have enough evidence that there is a correlation between number of people who lives in a house and their physical activity.
- After covid: We do not have enough evidence that there is a correlation between between number of people who lives in a house and their physical activity.

Physical Activity Changes

Before Covid



After Covid



Why might this be the case?

One reason might be COVID-19 our confounding variable. It's known that confounding variables can have an effect on the correlation between two variables. Especially one as significant as a global pandemic.

Why might this be the case?

This could be due to people having more time because:

A lack of a commute?

A lack of employment?

Before COVID those with more people living in their house might not have had enough time to be that active while balancing a commute to work and their family.

Is there a relationship between physical activity and age?

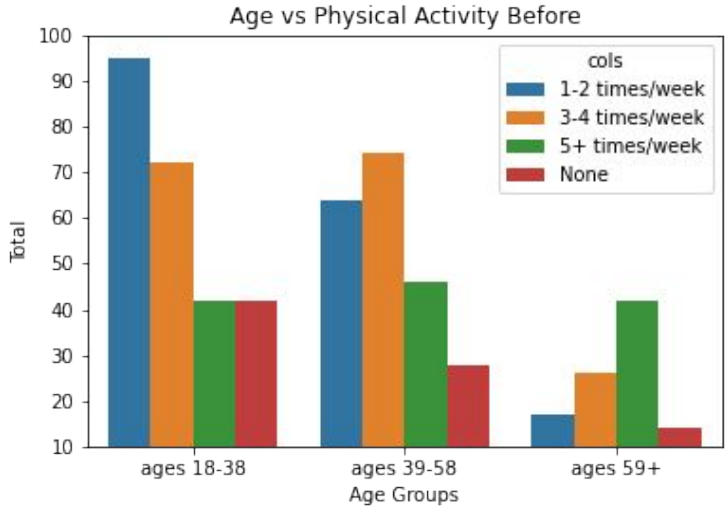
Chi - Squared test results:

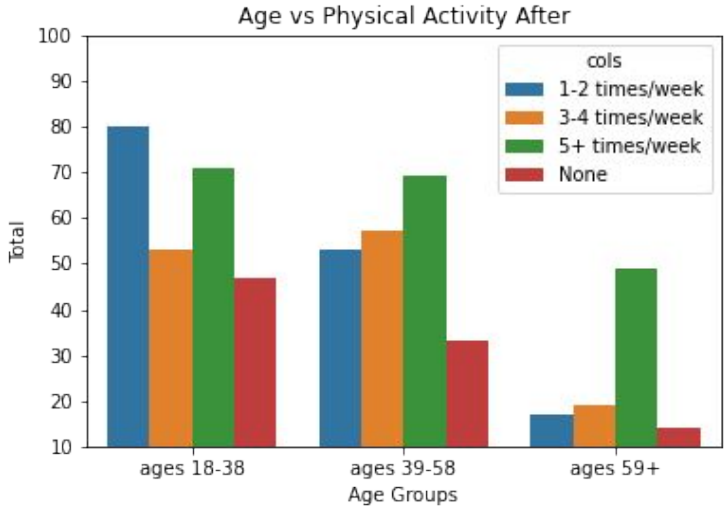
- Before covid: Yes (p-value = .0025)
- After covid: No (p-value = .1792)

What does this mean?

- Before covid: We have enough evidence that there is a correlation between age and their exercise.
- After covid: We do not have enough evidence that there is a correlation between age and their exercise.

Let's see the change in activity





Why might this be the case?

One reason might be COVID-19 being our confounding variable. It's known that confounding variables can have an effect on the correlation between two variables.

Let's Recap

1. The majority of data came from Maryland
2. We used Python, Excel, and R
3. We noticed an overall change in people's physical activity
4. We found a correlation between the number of people who live in a house and physical activity before covid.
5. We found a correlation between age and physical activity before covid.

THANKS!

Any questions?

THANK YOU!

To:

- Our Mentor Gisela Bardossy
- The Data Collection team
- Our professors at UMD and MC
- The judges

Thank you for the opportunity to participate in the challenge