
Socio-Economic Factors with Mental Health in Chicago

Karina Alvarez, Douglas Packard, Karan Shah

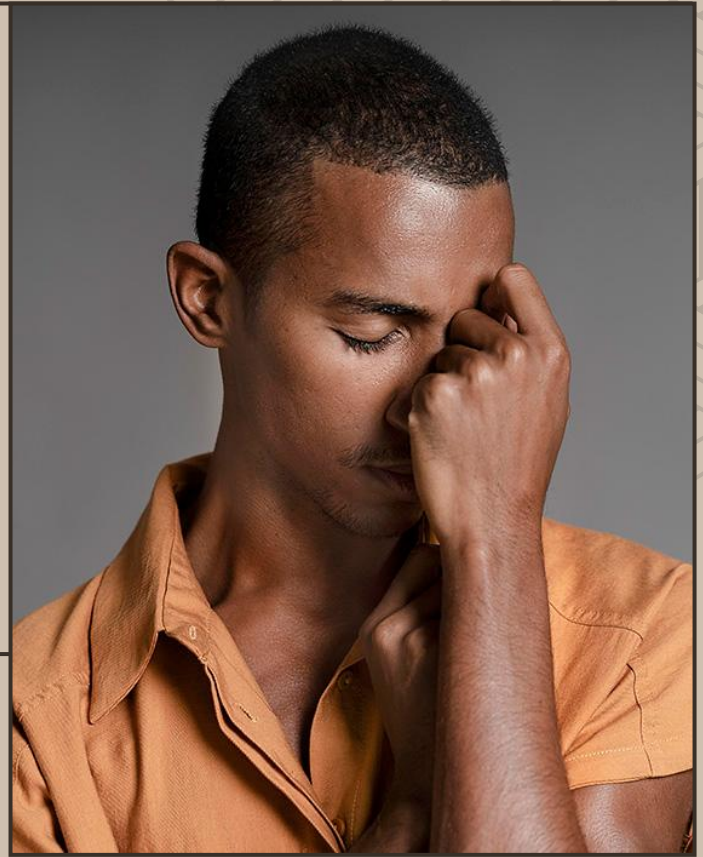


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Conclusions and Implications



Introduction

Understanding mental health has continued to have a greater importance in society. Our mental health determines the way we think, feel, and act. So why wouldn't we study it?

As residents of Chicago, we felt inclined to see what the we could discover about in what way, if any, has our socio-economic environment shaped our mental health, which in turn, shapes our lives.

Section 1: Questions

■ How has the level of hardship changed over time in Chicago?

■ Is there a correlation between the suicide mortality rates and vacant neighborhoods?



Hardship Index Heatmap in Chicago (2011-2015 vs 2015-2019)

01

Yellow

Yellow signifies no major change between the time frames

02

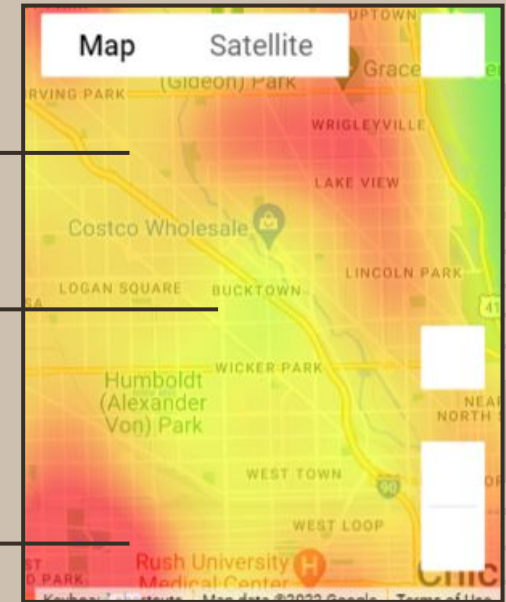
Green

Green signifies that the hardship index has gone down

03

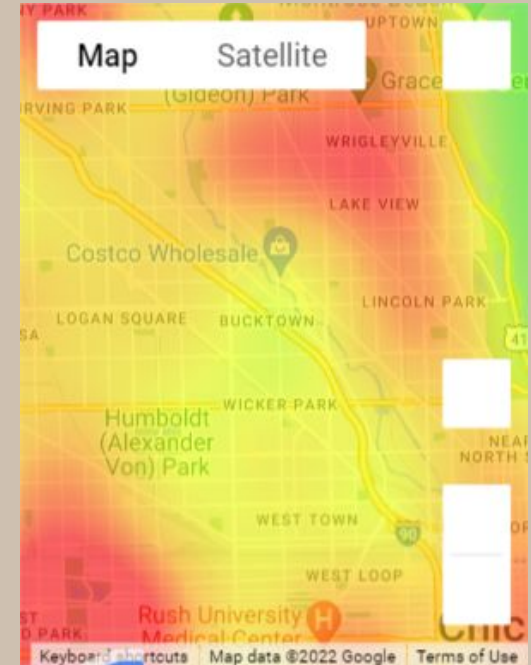
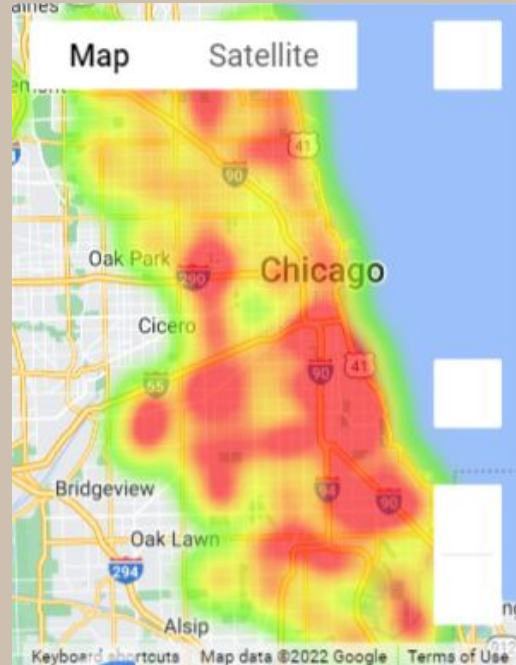
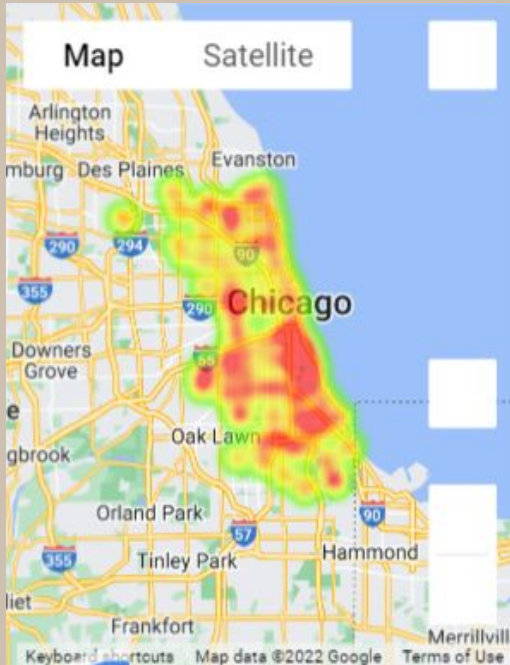
Red

Red signifies that the hardship index has gone up



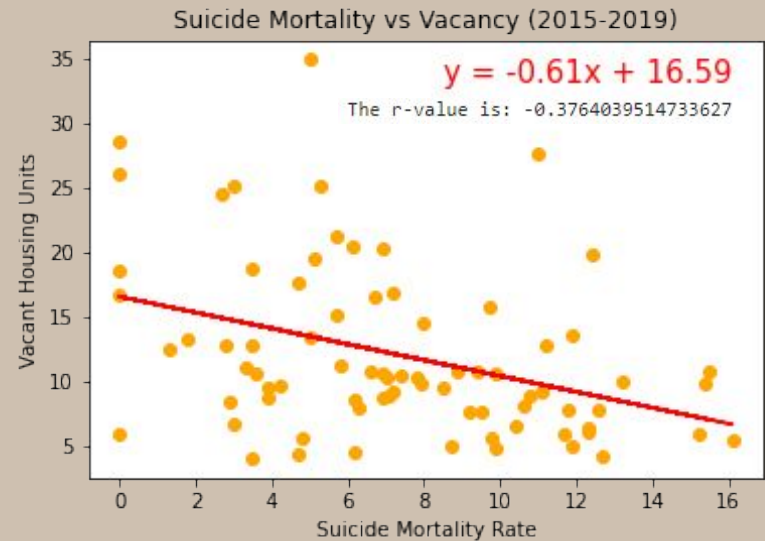
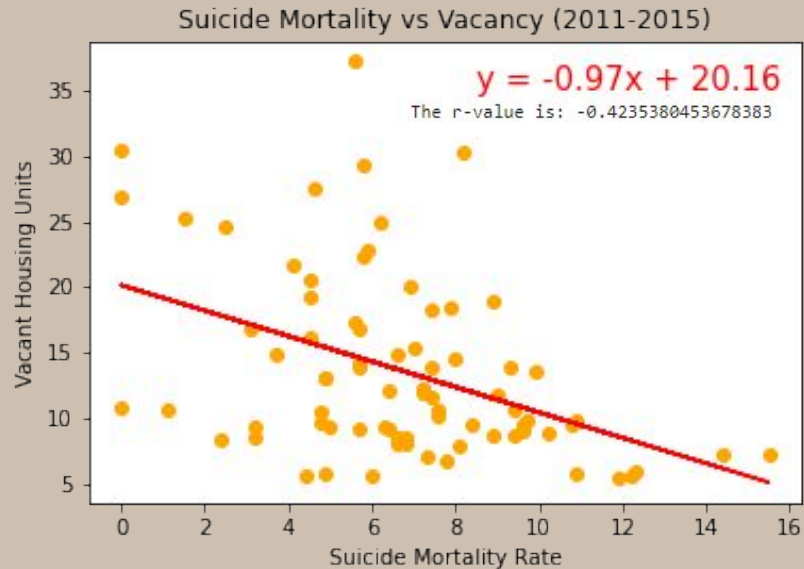
*The Hardship Index is a composite score reflecting hardship in the community (higher values indicate greater hardship). It incorporates unemployment, age dependency, education, per capita income, crowded housing, and poverty into a single score that allows comparison between geographies.

Hardship Index Heatmap in Chicago (2011-2015 vs 2015-2019)



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Suicide Mortality vs Vacancy



Section 1: Findings

■ How has the level of hardship changed over time in Chicago?

- The level of hardship has been improving, worsening, and staying the same in all neighborhoods. Contradictory to what I thought, every part of the city did not increase in the level of hardship.

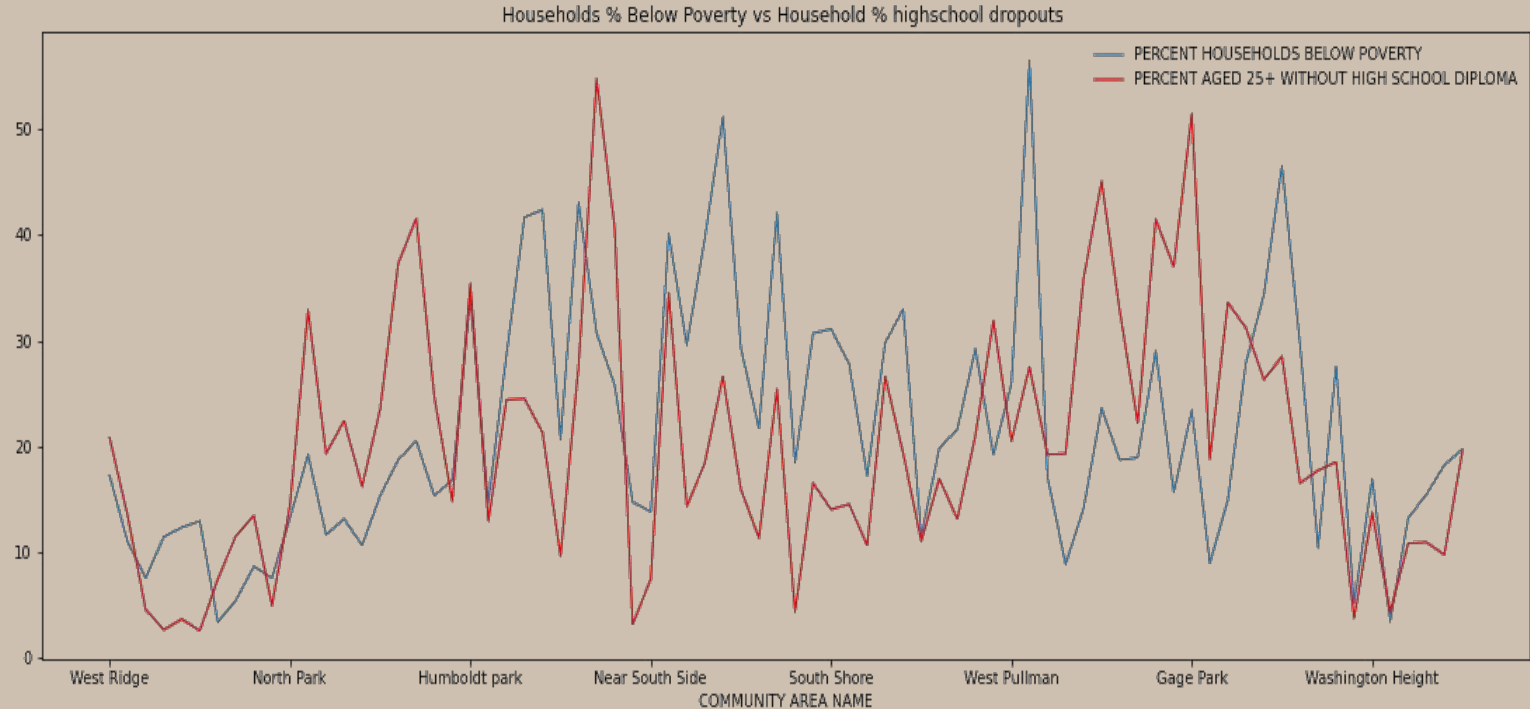
■ Is there a correlation between the suicide mortality rates and vacant neighborhoods?

- Based on the Suicide Mortality vs Vacancy scatter plots, there is slight negative correlation between suicide mortality rates and vacant neighborhoods. There is not enough of a correlation that I would say vacant neighborhoods causes greater suicide mortality rates.

Section 2: Questions

- What can data tell us about School Safety in Chicago?
- What can data tell us about community safety in Chicago?

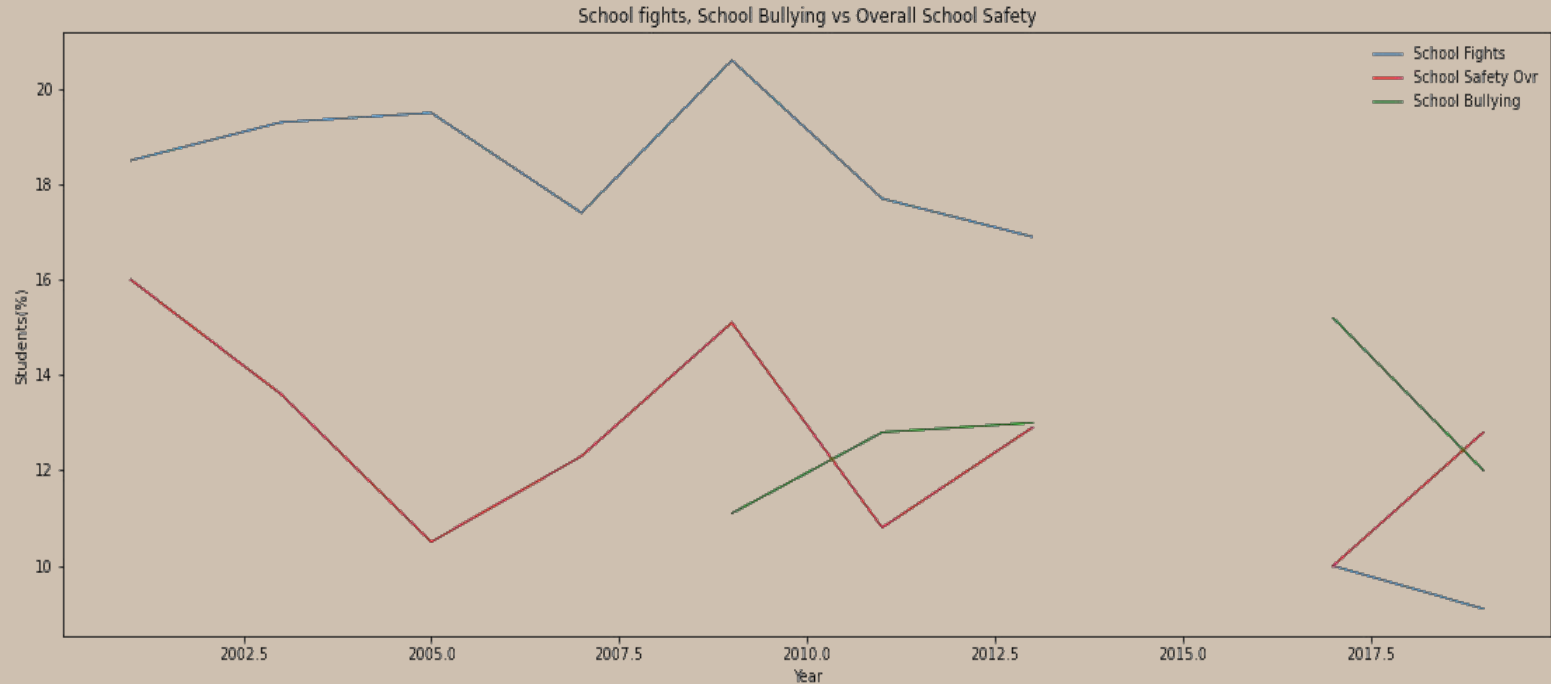
Household Poverty vs High School Dropouts



Community Belonging vs Neighborhood Safety



School Violence vs School Safety



Section 2: Findings

 Mental health is tied very closely to School and Community safety...

- Poverty definitely plays a role in the mental well being of a student. Graph 1 shows high poverty rates and subsequent high number of high school dropouts as a result of people quitting school to favor work

 Neighborhood safety and Community belonging go hand in hand

- Data shows less safe a person feels in their neighborhood the less belonging their community feels to them

Section 2: Findings



An indepth look at school data

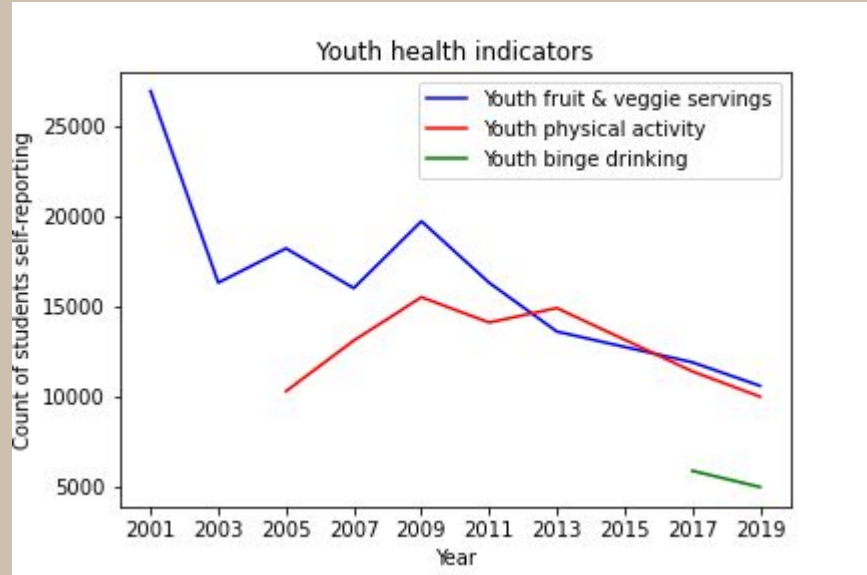
- In the third graph when compared over time, we can notice as the cases of school bullying and school fights go down. How safe people feel in their schools go up. But overall School safety in Chicago is still pretty low.

Section 3: Questions

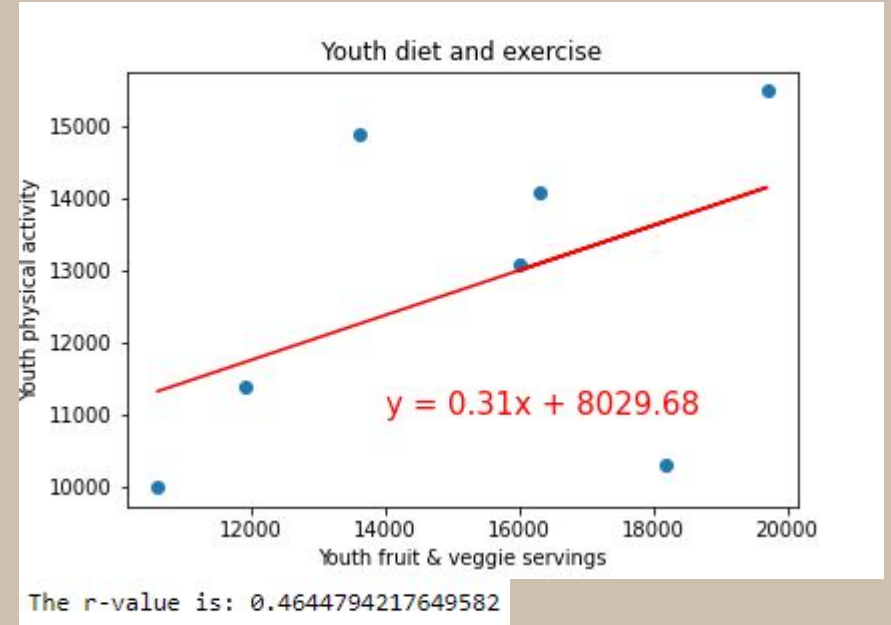
- What correlations are there between various youth health indicators (diet, exercise, drinking)?
- How has overall data coverage changed over time?
- What other factors are strongly correlated?

Youth Health

Youth health over time

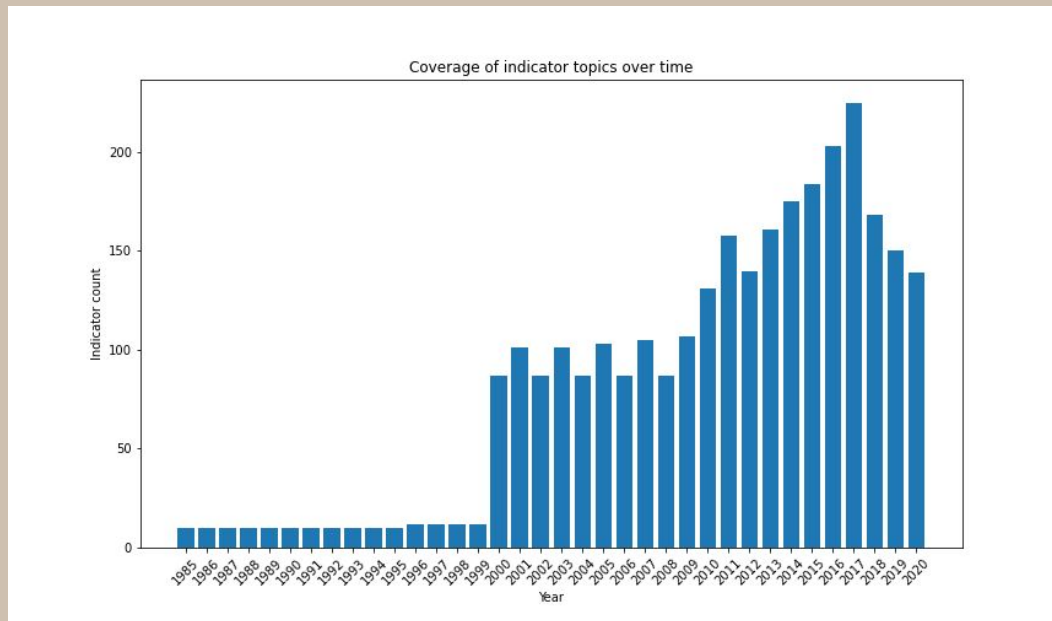


Youth health correlations



Preliminary Meta Study

Preliminary meta study



Preliminary Meta Study

Correlation matrix of city-wide indicators with 2010-2020 coverage

	VRAC	VRACR	CZA	VRAL	VRALR	VRAD	VRADR	CZO	CZB	VRCA	...	VRPRR	CZR	VRST	V
VRAC	1.000000	0.999097	-0.365566	0.490736	0.471262	0.131958	0.137535	-0.416356	-0.247628	-0.162311	...	0.177895	-0.290570	0.646089	0.6
VRACR	0.999097	1.000000	-0.366913	0.499071	0.482421	0.135582	0.140501	-0.410030	-0.237121	-0.184364	...	0.151296	-0.287191	0.654944	0.6
CZA	-0.365566	-0.366913	1.000000	-0.256644	-0.273029	-0.037812	-0.028629	0.813164	0.871793	0.227637	...	-0.276100	0.955800	0.210716	0.2
VRAL	0.490736	0.499071	-0.256644	1.000000	0.994910	0.635320	0.659127	-0.122404	-0.209695	-0.100449	...	0.078732	-0.277348	0.137724	0.0
VRALR	0.471262	0.482421	-0.273029	0.994910	1.000000	0.591794	0.613823	-0.104431	-0.215583	-0.117972	...	0.032781	-0.288066	0.111084	0.0
...
VRSUR	0.456601	0.439779	-0.149038	-0.281558	-0.277821	-0.487931	-0.526961	-0.134018	-0.258077	0.273499	...	0.342855	-0.140627	0.276188	0.2
VRTO	0.515720	0.508795	0.249988	0.381115	0.306637	0.622711	0.638709	0.070901	0.234178	0.136787	...	0.012424	0.254833	0.696591	0.7
VRTOR	0.483577	0.477879	0.303592	0.398214	0.327867	0.574658	0.607441	0.105070	0.301905	0.079249	...	-0.068751	0.312541	0.631212	0.6
CDTBR	-0.268232	-0.250994	0.108989	0.320457	0.371821	0.088851	0.088267	0.344388	0.022871	-0.352708	...	-0.077144	-0.004969	-0.281445	-0.3
CZV	-0.351065	-0.349976	0.994326	-0.261120	-0.272583	-0.079215	-0.070203	0.811692	0.900703	0.212359	...	-0.357942	0.978260	0.217351	0.2

Section 3: Findings

What correlations are there between various youth indicators

- Weak correlation between diet and exercise, not enough data on binge drinking

How has overall data coverage changed over time?

- Increase from 2009 to 2017, drop-off since, 2020 back at 2012 levels

What other factors are strongly correlated?

- Many correlated factors, would take more analysis to fully determine which are trivial and which are relevant or interesting

What We Learned...

- As visualized in this presentation, we were able to get a lot out of the data. The website provided us with base visualizations, but we were able to go beyond that and dive deeper into the data. While the Chicago Health Atlas provided a lot of room for discovery, there were many gaps that we discovered as well.
- Mental health and socio-economics are broad factors that are important to look at through different angles, which is what we did. We looked at composite indices, mortality data, school data, health data all regarding neighborhoods in Chicago.
- We found that bad mental health can be made worse depending on the impact school and community can have on your life. We did not find strong correlations between suicide and vacancy, and youth diet and exercise.
- It seems (based on the hardship heatmap) that many neighborhoods in Chicago are getting worse, which from our perspective, means **mental health of the individual is pivotal to quality of life.**

Thank

you!

