



Maternal Mortality in The United States

A regression analysis

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Agenda

- Health problem
- Data
- Modeling Process
- Results and Discussion
- Conclusion
- Future steps



Why should we care about maternal mortality in the United States?

- Maternal Death has been on the rise in the U.S. for over a decade
- The exact cause to this upward trend is still unknown according to the Center of Disease and Prevention
- Understanding the problem will help us implement effective policies to help us combat maternal death
- No mother should have to die from preventable causes

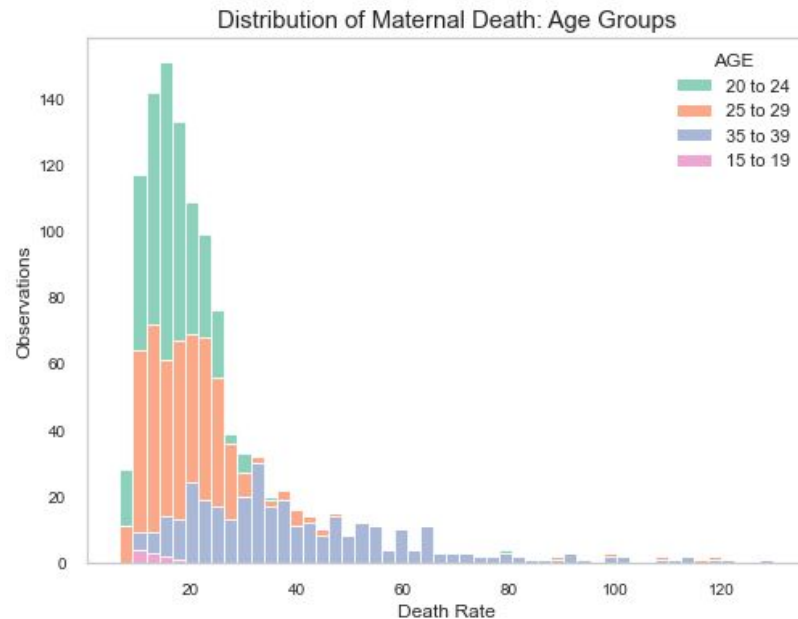
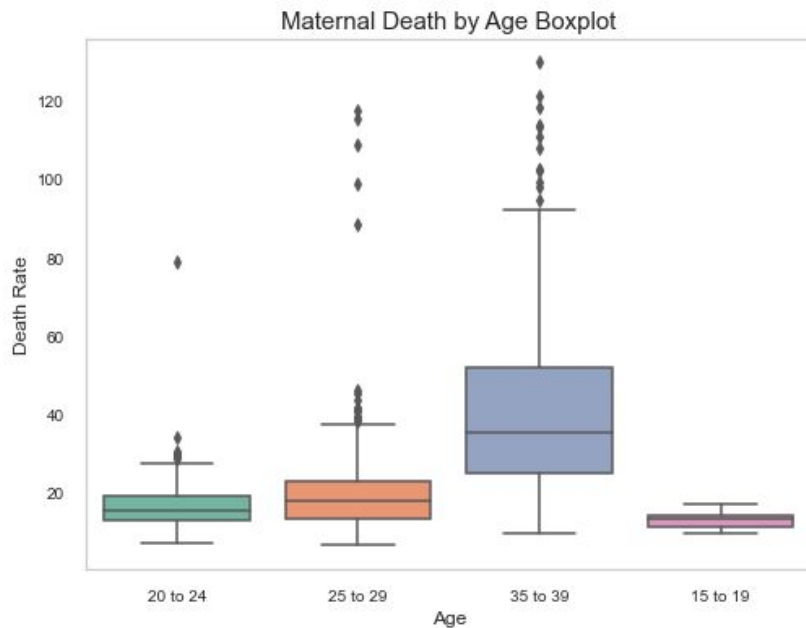


Data

- Sources
 - Centers of Disease Control and Prevention
 - Census Bureau
 - Global Health Data Exchange
- Variables

AGE	Ages 15-45 (converted to a dummy variable)
YEAR	Years 2008-2018
DEATH_RTE	Maternal mortality ratio (number of deaths per every 100,000 births)
LESS_HS	Percent of fertile woman with less than a hs degree
HS	Percent of fertile women with a high school degree
SOM_COL	Percent of fertile women with some college education
COL_PLUS	Percent of fertile women with a college degree or more
RTE_CHL	Percent of women with chlamydia
RTE_GON	Percent of women with gonorrhea
PRC_BLK	Percent of fertile black women
PRC_WHT	Percent of fertile white women
PRC_HISP	Percent of fertile hispanic women
PRC_OTHER	Percent of fertile women of other races and ethnicities

What does the data look like?





Modeling Process

- Ran Ordinary Least Squares model
 - Baseline model controls for age and state
- Tested each independent variable against the maternal death rate
 - Controlled for age and location

Final Model

- Final model was OLS with all independent variables

Results and Discussion

Dep. Variable: DEATH_RTE R-squared: 0.827
Model: OLS Adj. R-squared: 0.819

	coef	std err	t	P> t	[0.025	0.975]
Intercept	40.5391	6.344	6.391	0.000	28.092	52.986
LESS_HS	1.8555	6.063	0.306	0.760	-10.040	13.751
HS	0.0150	5.379	0.003	0.998	-10.539	10.569
SOM_COL	19.5399	19.078	1.024	0.306	-17.893	56.973
RTE_CHL	-0.0004	0.001	-0.378	0.705	-0.002	0.002
RTE_GON	-0.0138	0.003	-4.801	0.000	-0.019	-0.008
PRC_BLK	-23.4604	6.122	-3.832	0.000	-35.473	-11.448
PRC_WHT	-250.0691	19.140	-13.065	0.000	-287.624	-212.514
PRC_HISP	18.6656	6.791	2.748	0.006	5.340	31.991
fifteen_nineteen	-6.1406	2.535	-2.422	0.016	-11.114	-1.167
twnty_twntyfour	4.8797	1.808	2.699	0.007	1.333	8.427
twntyfiv_twntynine	19.9371	2.498	7.982	0.000	15.036	24.838
thrtfyiv_thrtynine	21.8629	1.753	12.470	0.000	18.423	25.303



Results and Discussion

- Negative effect - Women in there mid twenties and mid thirties
- Negative effect - Percentage of white and black fertile women negatively, but at disproportionate rates
- Negative effect - Rate of gonorrhea
- Positive effect - Percent of hispanic fertile woman



Conclusion and Future Research Endeavors

- Conclusion
 - The varying racial groups impact the rate of maternal mortality at disproportionate levels
 - Older women have a larger impact on maternal mortality
 - The rate of transmission of gonorrhea has a small negative effect on maternal mortality
 - Future research should be conducted in order to better understand these trends
- Next Steps
 - Obtaining individual level data and performing a clustering algorithm
 - Including obesity and smoking variables



Thank you

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