

# A Correlation Study: The Relationship Between Diabetes-related Death and Health Insurance Coverage in San Diego County

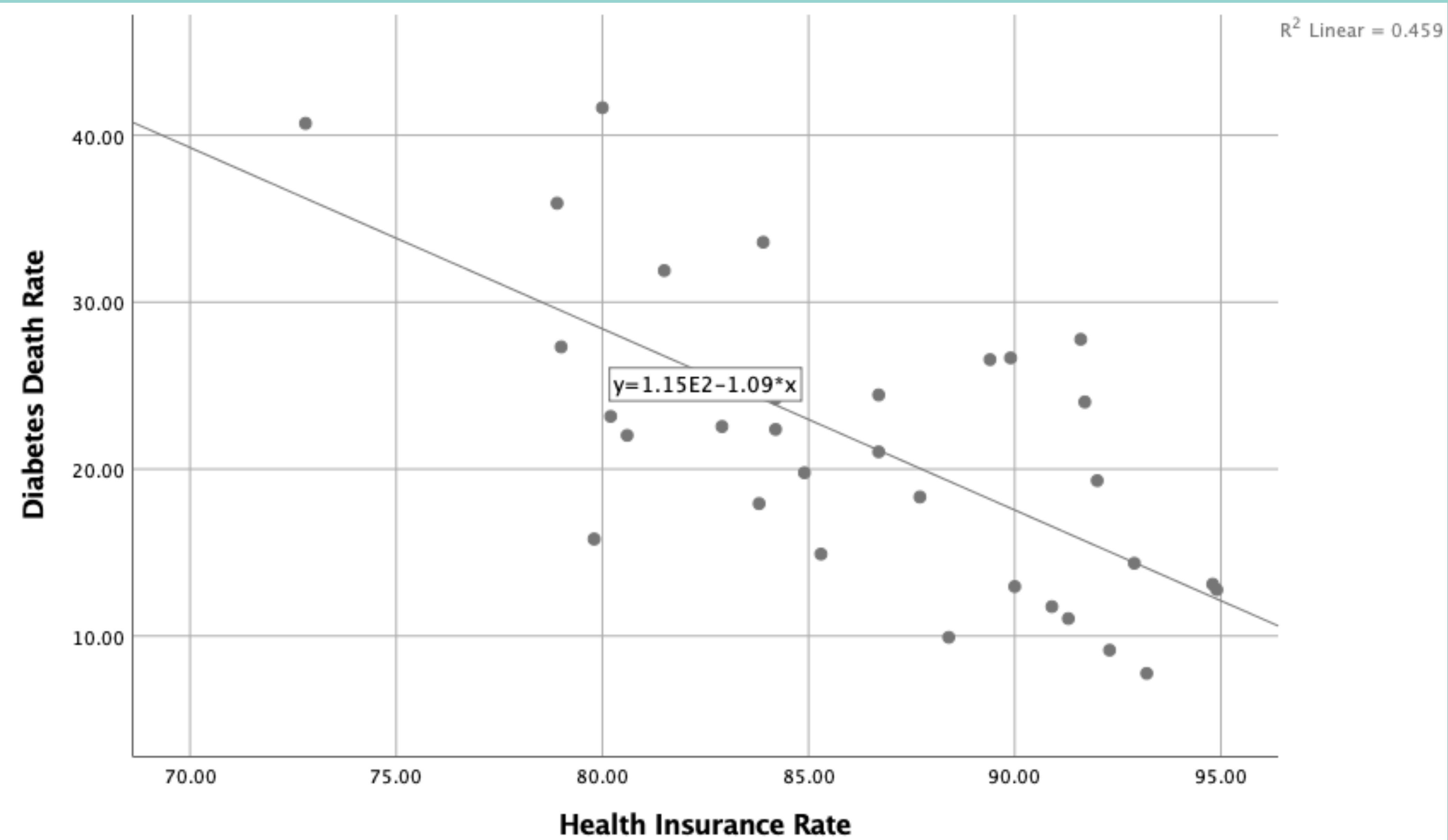
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## Background /Objective

- ❖ Uninsured diabetics often cite their lack of health insurance as a barrier for treatment (Stark Casagrande and Cowie 2012).
- ❖ Uninsured adults with diabetes are less likely to receive annual eye exams, foot examinations, hemoglobin A1C test than those with health insurance (Stark Casagrande and Cowie 2012).
- ❖ Uninsured adults with diabetes often lacked a standard of care site and were 6 times more likely to waive needed healthcare due to cost (Stark Casagrande and Cowie 2012).
- ❖ **Objective:** To examine the correlation between diabetes-related death and health insurance rates among adults in San Diego County.

## Methodology

- ❖ Health Insurance rates were from the 2015 San Diego Demographics- Health Insurance, which is collected through the U.S. Census Bureau and is a 5-year estimate from 2011-2015 through community based survey. The data is stratified by geographic region and is per 100,000 people.
- ❖ Diabetes death rates were utilized from Live Well San Diego, 2011-2016 Health Data on Non-Communicable (Chronic) Diseases, however only analyzed data from 2015.
- ❖ We ran a simple linear regression with 32 geographic regions within San Diego County with the dependent variable as age-adjusted diabetes death rate and the independent variable as health insurance rate.
- ❖ A Pearson's correlation coefficient was also determined with the significance level of 0.01 level (two-tailed).



## Results

- ❖ On the basis of our data, the following regression line was determined:  $Y = 115.28 - 1.09 \times X$ , where X is health insurance rate per 100,000 and Y is age-adjusted diabetes death rate per 100,000.
- ❖ With every increase in health insurance rate of 10 per 100,000 there was a corresponding decrease in diabetes-related death of 11.2 per 100,000 in San Diego county.
- ❖ This relationship translates to a strong negative Pearson's correlation coefficient of -0.68 ( $p < 0.001$ ).

## Conclusion

- ❖ Diabetes-related death and health insurance rates are inversely related, suggesting health insurance is a protective factor in relation to diabetes-related death.
- ❖ Areas with the highest diabetes death rates such as National city (40.71) and South Bay (41.65) not only had the lowest health insurance rate but also had the lowest socioeconomic status out of all 32 regions in San Diego., indicating that socioeconomic status and diabetes-related death might also be related.

## Policy Implications

- ❖ Increasing health insurance coverage could reduce diabetes-related death in San Diego County.
- ❖ Increase Medicaid coverage to cover all adults below 144% of the federal poverty level (previously 138%).
- ❖ Publicly funded disease management program for diabetics to monitor disease progression and complications.

