The Untapped Data from the Centers for Disease Control and Prevention: An Exploratory Data Analysis of Marriage's Varying Impact on Suicide Rate by Race, Sex, and Age

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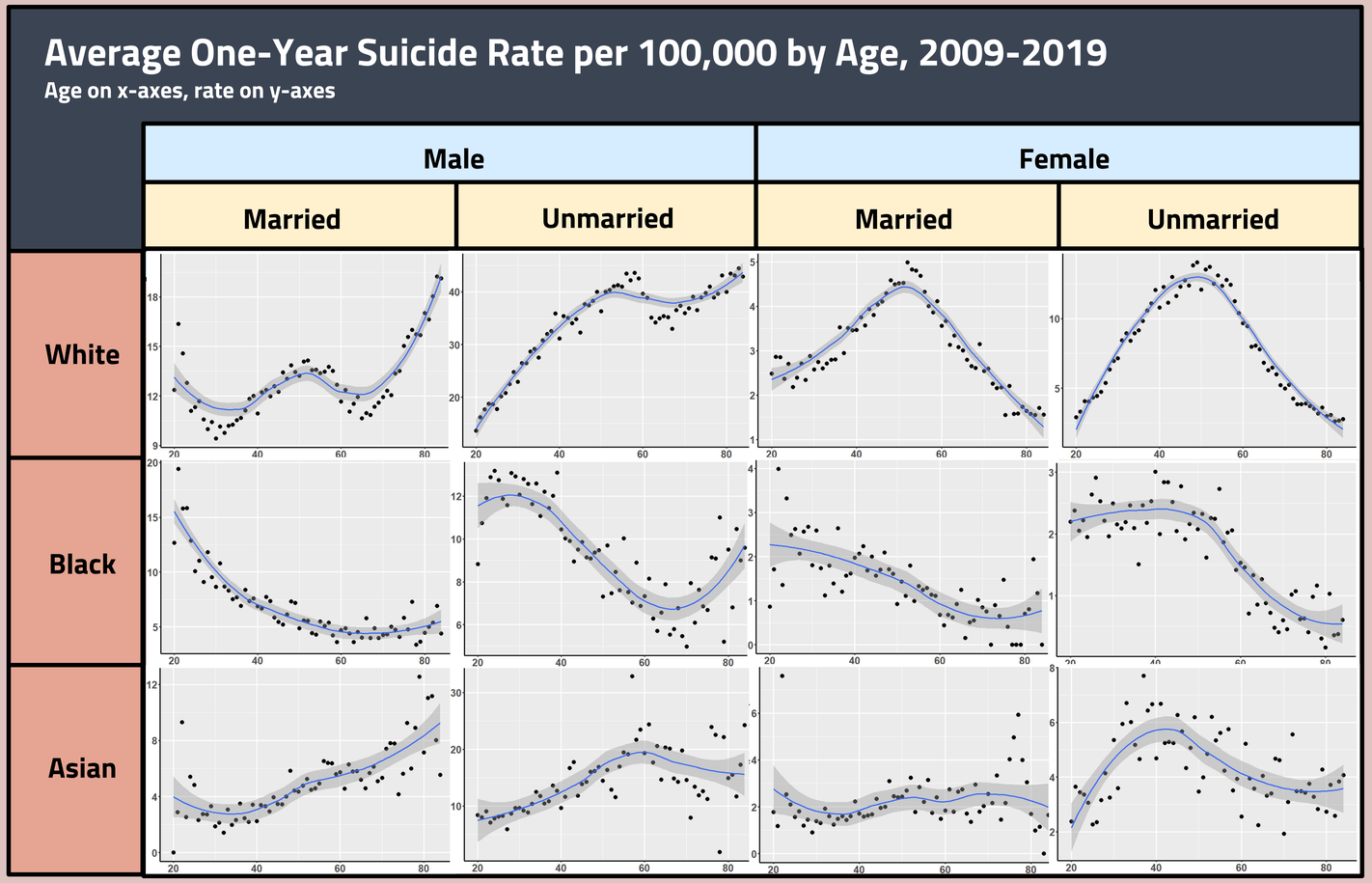
Introduction

Suicide is the 10th-leading cause of death in the United States. Despite an abundance of resources, the lack of a cumulative science challenges suicidology and stifles effective prevention. Here, we make use of one open-source dataset to demonstrate otherwise unnoticed variability in marriage's protective effect by age, race, and gender.

Methodology

Information on all suicides in the United States between 2009 and 2019 were obtained through use of the Centers for Disease Control and Prevention's National Vital Statistics System (NVSS) (Ventura, 2018). To calculate suicide rates, the total number of suicides for a given demographic (e.g., Black married 23-year-old males) was divided by the population size suggested by the U.S. Census' American Community Survey and multiplied by 100,000 (U.S. Census Bureau, 2021). Regression is nonlinear locally estimated scatterplot smoothing (LOESS) with rates from ages 20 – 84.

Using **open-source mortality data**, we can observe the protective effect of marriage. **This effect varies by age, race, and sex.**



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Results

Graphic representations of each combination of marital status (married vs. unmarried), sex, and race (White, Black, Asian) are at-center. Visual inspection reveals great heterogeneity with regards to age's relationship with suicide rate depending on demographic. If main effects are to be assumed for each of marital status, sex, and race as demonstrated in the literature, interaction effects appear at every combination of predictors.

Conclusions

Here, I show a number of interesting effects observed through use of extant data. The need for a cumulative suicidology is apparent for improved understanding of suicidal variation, especially as it is employed in predictive and descriptive modeling and demographic adjustments (i.e., age-adjusted rates). Broad strokes approaches that dismiss higher-order interactions may predict with accuracy only for statistically dominant majorities, as reflected in frequent statements that age is a risk factor for suicide (Shah, 2007). There is evident need for further investigation of marriage's protective effect as it varies from one population to another.

References

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