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Economic Opportunity and Young Adult Mortality: Variations by Race/Ethnicity and Gender

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ECONOMIC OPPORTUNITY AND YOUNG ADULT MORTALITY: VARIATIONS BY RACE/ETHNICITY AND GENDER

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INTRODUCTION

A key finding in sociological and demographic research is the sustained socioeconomic gradient in health and mortality. Those who experience less income inequality enjoy better health and longer life than those at the lower end of the spectrum (Wilkinson and Pickett 2008). For example, McLaughlin et al. (2002) found that the highest mortality rates among adults were found in the counties with the highest level of income inequality and the lowest mortality rates were found among the more equal counties. Importantly, this relationship was found to affect rich and poor alike.

However, less is known about the precursors to socioeconomic status, namely economic opportunity, and its links to the health and mortality of the nation's young adults. Recent research has found that increased opportunity for social mobility—moving from the lowest to the highest level of economic opportunity was associated with 16.7% decrease in all-cause mortality among adults 25 and older.

The purpose of this study is to extend this research to examine the relationship between economic opportunity and adolescent and young adult mortality in the United States. In addition, this study explores other variables such as social support and rurality and their link to young adult mortality rates. The goals of this study are twofold. First, we examined the link between economic opportunity and all-cause mortality rates for youth ages 15 to 34 in the United States. Given the increasing racial and ethnic diversity of America's youth, we will pay particular attention to race/ethnic differences. We will also examine the differences in mortality by gender.

METHODS

In order to answer these questions, we have utilized data from five sources. County-level mortality rates will be obtained from the National Center for Health Statistics (NCHS) vital statistics database. The Compressed Mortality File provides mortality and population counts for all U.S. counties. The dependent variable of race- and gender-specific all-cause mortality will be constructed for the age group under study. Age adjusted mortality rates are used in this study in order to make reasonable comparisons between counties that may have different age distributions.

We also use newly released information available through the Equality of Opportunity Database. These data provide the key independent variable, which is the county-averaged national rank in income for individuals born to families in the lowest quartile of the national income distribution. This measure captures on average, how far an individual born in to poverty was able to rise.

We also explore the Opportunity Index from the years 2011-2015. These measures primarily examine different factors within a community by county over the course of 5 years. We primarily used the percent change variables from this dataset to gain a better understanding of the shifting social and economic conditions over time for each county.

We also used the 2013 Rural-Urban Continuum Code to gain an understanding of what

average age adjusted mortality rates look like in relation to rurality. This dataset ranks each county on a scale of 1 to 9 on rurality. On this scale, the counties falling under the first category are considered to be metro, which is defined as counties in metro area with a population of 1 million or more. On the opposite end of the spectrum, those counties falling into the ninth category are considered to be non-metro, which is completely rural or less than 2,500 urban population and, also, not adjacent to a metro area.

Descriptive analyses examine and test for associations between county-level mortality rates and economic opportunity and any variations by race/ethnicity and gender. We have utilized the economic opportunity measure as the key independent variable. We have also used variables from the Opportunity Index and the County Health Rankings to gain a better understanding of how these variables affect young adult mortality rates by county. All of these variables will be looked at for all cause morality.

RESULTS

When examining average age adjusted mortality rates in each county, we closely examined six variables for all-cause mortality. These variables include, our main economic opportunity measure, an opportunity score measure for counties over a five-year period, an economic Gini index measure, and the rural-urban continuum codes from 2013.

Overall, we find variations in mortality by race and gender. The average age-adjusted mortality for whites is about 108.9 and blacks 133.3, while for young men it is 153.4 and 67.1 for young women.

Our main economic opportunity measure, which is the county-averaged national rank in income for individuals born to families in the lowest quartile of the national income distribution, showed the average all-cause age-adjusted mortality rate to be higher for blacks than for whites in three out of the four quartiles, but, overall, mortality rates declined as economic opportunity increased. The male average was higher than the female average, where increasing levels of economic opportunity are associated with declining levels of mortality.

The opportunity score measure we used contains 4 categories of improvement, where category 1 shows a decline in opportunity score, category 2 contains stable opportunity score, category 3 is slow improvement, and category 4 is rapid improvement. The average age-adjusted mortality rates for blacks, whites, males, and females all followed a similar pattern over all four categories, with mortality is declining where the opportunity score is not improving, and there is increased mortality where the opportunity score is improving more rapidly. The black average was higher than the white, and the male average was higher than the female. A possible explanation for this trend is that areas that are improving more rapidly have higher mortality because they are areas that need improvement. They may be areas where the opportunity score is, or once was, very low, so mortality is high in these regions.

When looking at the Gini measure, which is used to measure income inequality, as

income inequality increased, mortality rates also increased for blacks and whites, and the black average age adjusted mortality rate was higher in 3 out of 4 quartiles. The male average was higher than the female average, and as income inequality increased, morality increased. However, in this instance, there was a less dramatic increase in mortality with the male and female variables than there were within the black and white variables.

When looking at rurality, we grouped together the 9 categories of rurality given by the Rural-Urban Continuum Code into 3 categories. Within our groups, 1 is the most rural and 3 is the least rural. The average age-adjusted mortality rates for blacks, whites, males, and females all showed an increase when going from the most rural to the most urban. The black average was higher than the white, and the male average was higher than the female.

FUTURE ANALYSIS

In order to further explore this topic, we plan to utilize the 2010 Ohio Family Health Survey. These data are particularly well-suited for studying the links between health-related behaviors of young adults in Ohio, economic opportunity and mortality. These data are available at the county-level and offer information by age, gender and race on key health behaviors such as smoking, alcohol and drug use. All of the data are publicly available and need no Human Subjects approval.

We will use *t*-tests for differences in means and the chi-square test for differences in proportions. We will examine the gradient by dividing the counties into quintiles of social mobility. We will utilize linear regression models using the natural logarithm of the dependent variable (i.e., mortality rates) and the economic opportunity measure as the key independent variable. We will explore the impact of state-fixed effects. We will conduct a parallel analysis on the Ohio data using health behaviors as covariates. We also hope to compare all of these variables for both all cause and drug-induced causes of mortality.

We will use the 2015 Ohio Medicaid Assessment Survey for health information of the working age population. We will examine rural-urban differences in health and mortality for the state of Ohio along with a comparison of whether contextual characteristics vs. individual characteristics have more of an impact on health and mortality. We plan to compare gender differences among these variables.

By linking health behaviors with patterns of mortality and opportunity we will be able to offer valuable insight in to possible policy recommendations that may improve population health. We plan to use County Health Rankings from the year 2014. Several of the variables within these data are quartile measures that examine characteristics such as social support and violent crime by county. We anticipate presenting this research at the BGSU Undergraduate Research Symposium in the spring, as well as at the Northeast Ohio Undergraduate Sociology Symposium. In addition, we plan to work with the Center for Family and Demographic Research to issue an *Ohio Population News* based on the exploratory analysis.