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MDAC Bibliography

February 25, 2021

1. Moss JL, Johnson NJ, Yu M, Altekruse SF, Cronin KA. Comparisons of individual- and area-level socioeconomic status as proxies for individual-level measures: Evidence from the mortality disparities in american communities study. *Popul Health Metr*. 2021;19:1.

**Dataset**: **PMID**: 33413469 **ID**: 1

BACKGROUND: Area-level measures are often used to approximate socioeconomic status (SES) when individual-level data are not available. However, no national studies have examined the validity of these measures in approximating individual-level SES. METHODS: Data came from ~ 3,471,000 participants in the Mortality Disparities in American Communities study, which links data from 2008 American Community Survey to National Death Index (through 2015). We calculated correlations, specificity, sensitivity, and odds ratios to summarize the concordance between individual-, census tract-, and county-level SES indicators (e.g., household income, college degree, unemployment). We estimated the association between each SES measure and mortality to illustrate the implications of misclassification for estimates of the SES-mortality association. RESULTS: Participants with high individual-level SES were more likely than other participants to live in high-SES areas. For example, individuals with high household incomes were more likely to live in census tracts (r = 0.232; odds ratio [OR] = 2.284) or counties (r = 0.157; OR = 1.325) whose median household income was above the US median. Across indicators, mortality was higher among low-SES groups (all p < .0001). Compared to county-level, census tract-level measures more closely approximated individual-level associations with mortality. CONCLUSIONS: Moderate agreement emerged among binary indicators of SES across individual, census tract, and county levels, with increased precision for census tract compared to county measures when approximating individual-level values. When area level measures were used as proxies for individual SES, the SES-mortality associations were systematically underestimated. Studies using area-level SES proxies should use caution when selecting, analyzing, and interpreting associations with health outcomes.

2. Moss JL, Johnson NJ, Yu M, Altekruse SF, Cronin KA. Indicators of socioeconomic status for individuals, census tracts, and counties: How well do measures align for demographic subgroups? *J Registry Manag*. 2020;47:4-12.

**Dataset**: **PMID**: 32833378 **ID**: 4

OBJECTIVES: Researchers often approximate individual-level socioeconomic status (SES) from census tract and county data. However, area-level variables do not serve as accurate proxies for individual-level SES, particularly among some demographic subgroups. The present study aimed to analyze the potential bias introduced by this practice. METHODS: Data included (1) individual-level SES from the Mortality Disparities in American Communities study (n ≈ 3,471,000 collected in 2008), and (2) census tract- and county-level SES from the 2006-2010 American Community Survey. Analyses included correlations among SES indicators (eg, median household income, having a high school degree, unemployment) across individual versus census tract and county levels, stratified by sex, age, race/ethnicity, and urbanicity. Finally, generalized estimating equations evaluated demographic differences in whether area-level SES matched or underestimated individual-level SES. RESULTS: Low correlations were observed between individual- and area-level SES (census tract: Spearman's r range = 0.048 for unemployment to 0.232 for median household income; county: r range = 0.028 for unemployment to 0.157 for median household income; all P < .0001). SES indicators were more likely to match for males, older participants, and urban groups. Area-level SES indicators were more likely to underestimate individual-level SES for older participants and rural groups, indicating that individuals who are part of these groups may live in systematically lower-SES communities than their own SES might connote. CONCLUSIONS: In this population-based study of 3.5 million participants, area-level indicators were poor proxies for individual-level SES, particularly for participants living in rural areas.

3. Hawks L, Cosgrove C, Neiman M, Roy B, Wildeman C, Coady S, Wang EA. Five-year mortality among americans incarcerated in privatized versus public prisons: The mortality disparities in american communities project. *J Gen Intern Med*. 2020

**Dataset**: **PMID**: 32710207 **ID**: 2

4. Olfson M, Cosgrove CM, Wall MM, Blanco C. Sociodemographic factors associated with high risk for firearm suicide among us adults. *JAMA Intern Med*. 2020;180:1014-1019.

**Dataset**: **PMID**: 32421141 **ID**: 6

This cohort study assesses the association of firearm suicide risk with sociodemographic characteristics among US adults.

5. Arias E, Johnson NJ, Vera BT. Racial disparities in mortality in the adult hispanic population. *SSM Popul Health*. 2020;11:100583.

**Dataset**: **PMID**: 32346598 **ID**: 3

OBJECTIVE: We addressed three research questions: (1) Are there racial mortality disparities in the adult Hispanic population that resemble those observed in the non-Hispanic population in the US? (2) Does nativity mediate the race-mortality relationship in the Hispanic population? and (3) What does the Hispanic mortality advantage relative to the non-Hispanic white population look like when Hispanic race is considered? METHODS: We estimated a series of parametric hazard models on eight years of mortality follow-up data and calculated life expectancy estimates using the Mortality Disparities in American Communities database. RESULTS: Hispanic white adults experience lower mortality than their Hispanic black, American Indian and Alaska Native, Some Other Race, and multiple race counterparts. This Hispanic white advantage is found mostly among the US born. The Hispanic advantage relative to the non-Hispanic white population operates for most Hispanic race groups among the foreign born but either disappears or converts to a disadvantage for most of the non-white Hispanic groups among the US born. CONTRIBUTION: Our study extends the literature on the Hispanic Mortality Paradox by revealing that the adult Hispanic population experiences racial mortality disparities that closely resemble those observed in the non-Hispanic population. The Hispanic mortality advantage is mediated not only by nativity but by race. These results indicate that race is a critical factor that should be considered in any study with the goal of understanding the health and mortality profiles of the Hispanic population in the US.

6. Altekruse SF, Cosgrove CM, Altekruse WC, Jenkins RA, Blanco C. Socioeconomic risk factors for fatal opioid overdoses in the united states: Findings from the mortality disparities in american communities study (mdac). *PLoS One*. 2020;15:e0227966.

**Dataset**: **PMID**: 31951640 **ID**: 5

BACKGROUND: Understanding relationships between individual-level demographic, socioeconomic status (SES) and U.S. opioid fatalities can inform interventions in response to this crisis. METHODS: The Mortality Disparities in American Community Study (MDAC) links nearly 4 million 2008 American Community Survey responses to the 2008-2015 National Death Index. Univariate and multivariable models were used to estimate opioid overdose fatality hazard ratios (HR) and 95% confidence intervals (CI). RESULTS: Opioid overdose was an overrepresented cause of death among people 10 to 59 years of age. In multivariable analysis, compared to Hispanics, Whites and American Indians/Alaska Natives had elevated risk (HR = 2.52, CI:2.21-2.88) and (HR = 1.88, CI:1.35-2.62), respectively. Compared to women, men were at-risk (HR = 1.61, CI:1.50-1.72). People who were disabled were at higher risk than those who were not (HR = 2.80, CI:2.59-3.03). Risk was higher among widowed than married (HR = 2.44, CI:2.03-2.95) and unemployed than employed individuals (HR = 2.46, CI:2.17-2.79). Compared to adults with graduate degrees, those with high school only were at-risk (HR = 2.48, CI:2.00-3.06). Citizens were more likely than noncitizens to die from this cause (HR = 4.62, CI:3.48-6.14). Compared to people who owned homes with mortgages, those who rented had higher HRs (HR = 1.36, CI:1.25-1.48). Non-rural residents had higher risk than rural residents (HR = 1.46, CI:1.34, 1.59). Compared to respective referent groups, people without health insurance (HR = 1.30, CI:1.20-1.41) and people who were incarcerated were more likely to die from opioid overdoses (HR = 2.70, CI:1.91-3.81). Compared to people living in households at least five-times above the poverty line, people who lived in poverty were more likely to die from this cause (HR = 1.36, CI:1.20-1.54). Compared to people living in West North Central states, HRs were highest among those in South Atlantic (HR = 1.29, CI:1.11, 1.50) and Mountain states (HR = 1.58, CI:1.33, 1.88). DISCUSSION: Opioid fatality was associated with indicators of low SES. The findings may help to target prevention, treatment and rehabilitation efforts to vulnerable groups.