

Area deprivation amplifies racial inequities in premature mortality: Analysis of 242,667 deaths in Washington State, USA 2011-15

Pablo Monsivais, PhD, MPH; Solmaz Amiri, DDes; Justin D. Denney, PhD ; Ofer Amram, MSc PhD

Research Report no. 6

January 2020

Click for the online version of the report: <http://chaselab.net/AreaDeprivationReport/AD.htm>

Background

In the United States, place of residence and racial identity are closely tied to health and wellbeing. A large body of evidence has confirmed that whites living in more-affluent areas have the best chances of a long, healthy life. On the contrary, premature death is known to be more common in low-income communities and communities of color than in high-income and majority-white areas.

Although these trends are well known separately, less is known about if and how race and neighborhood deprivation interact in relation to health. For example, little is known about whether some racial groups may face excess health risks in deprived areas. This is important because it can indicate potential neighborhood factors that may contribute to health inequalities. This study analyzed all deaths occurring in Washington state from 2011 to 2015 aiming to explore how race and neighborhood deprivation were associated with premature death both independently and in combination.

How the study was conducted

In this epidemiological study, we analyzed data from the Washington State Department of Health, which reported nearly a quarter million deaths in the state between 2011-2015. Of these, we analyzed 242,667 deaths, for which we could obtain information about the last residential address for each individual at the time of their death. Addresses were used to determine decedents' exposure to deprivation based on the Area Deprivation Index. We also classified decedents' race using federal racial categories, as well as their education, gender, and other socioeconomic and demographic characteristics. We used multi-level regression models to measure the odds of premature mortality (death occurring before age 65) by race and neighborhood deprivation separately and in combination.

What the study found

Overall, nearly one-quarter of all deaths occurring in the state during this period were premature (23.5%). The leading causes of premature death were cancer and heart disease. The lowest rates of premature death were in whites (22% of deaths), while the highest rates were in Native Hawaiian/Pacific Islanders (NHPI, 55%) followed by American Indian/Alaska Natives (AIAN, 50%) (Figure 1). Premature deaths were more common in the most-deprived areas of the state compared with the most affluent areas (26% versus 20%).

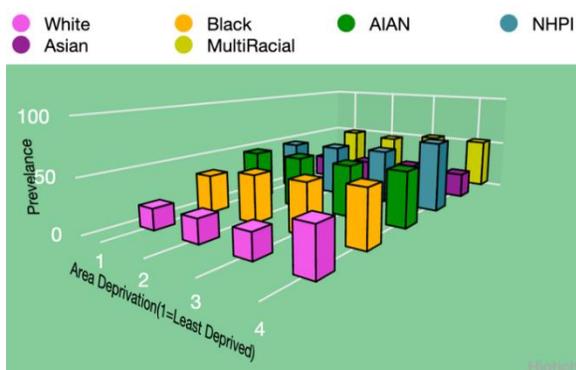


Figure 2. Premature mortality in WA State, by race and deprivation

White versus non-white inequities in premature mortality did not vary substantially with increasing levels of deprivation. However, 40% of deaths among whites from most-deprived areas were premature and, for most non-white races, highest deprivation was linked to more premature deaths ranging from 50% of deaths for multi-racial decedents to 66% of deaths among NHPI decedents (Figure 2). In statistical analysis, deaths among non-whites from deprived neighborhoods were between three and eight times more likely to be premature compared to more-affluent whites.

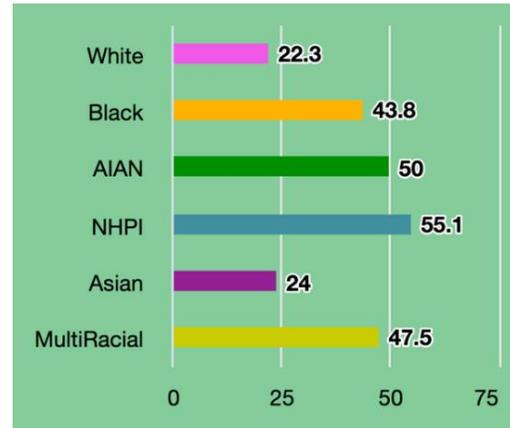


Figure 1. Premature mortality in WA State, by racial group

White versus non-white inequities in premature mortality did not vary substantially with increasing levels of deprivation. However, 40% of deaths among whites from most-deprived areas were premature and, for most non-white races, highest deprivation was linked to more premature deaths ranging from 50% of deaths for multi-racial decedents to 66% of deaths among NHPI decedents (Figure 2). In statistical analysis, deaths among non-whites from deprived neighborhoods were between three and eight times more likely to be premature compared to more-affluent whites.

Implications of this study

This study revealed excess odds of premature mortality for many non-white racial groups living in socioeconomically-deprived areas. Apparent racial inequities in mortality may be amplified by social and environmental risk factors present in deprived areas. These may include poor housing conditions, neighborhoods without the facilities to enable healthy living, lack of access to health and social services, and stress stemming from financial insecurity and low social support. Further research will aim to identify the environmental and policy-related factors that may contribute to health risks.

REFERENCES:

- <https://www.cdc.gov/minorityhealth/CHDIReport.html>
- <https://www.cdc.gov/nchs/data/hus/hus15.pdf>
- <https://www.doh.wa.gov/>
- <https://egems.academyhealth.org/articles/abstract/10.13063/2327-9214.1238/>
- <https://www.federalregister.gov/documents/2016/09/30/2016-23672/standards-for-maintaining-collecting-and-presenting-federal-data-on-race-and-ethnicity>