Cause-Specific Contributions to Black-White Differences in Male Mortality from 1960 to 1995

Irma T. Elo
Greg L. Drevenstedt
Population Studies Center
University of Pennsylvania

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Life Expectancy at Birth for White and Black Males, United States, Selected Years, 1960-95

Age-Group Contributions to Black-White Difference in Male Life Expectancy at Birth, 1960 and 1995

1960

1995
Why have mortality trends been more adverse for black than white men?

Focus on Cause-specific Mortality:

Identify causes of death that are largely responsible for:

• the black-white disparity in male mortality in 1960-62 and 1993-95, and

• changes in the black-white disparity between 1960 and 1995 at ages 15-39 and 40-64.
Data Sources

• Deaths:
  1960-67: Centers for Disease Control
  1968-95: National Center for Health Statistics

• Population:

• Census Undercount:
  Blacks: Preston et al. (1998)
  Whites: U.S. Census Bureau (1988 & unpublished); Robinson et al. (1993)
Causes of Death

Selection of causes based on:

- Underlying cause of death
- Contribution to black-white difference in male mortality
- Comparability across ICD revisions

Classification of causes

- Accidents
- Cancer
- Circulatory diseases, except stroke
- Diabetes

- Homicide
- Infections, pneumonia, influenza
- Stroke
- All other causes
Methods

- Proportionate contribution of each cause to black-white difference in all-cause mortality:

  \[ p_i = \frac{(ASDR^B_i - ASDR^W_i)}{(ASDR^B - ASDR^W)} \]
  
  \( i \) indexes cause group; \( Sp_i = 1 \).

- Proportionate contribution of each cause to change over time in black-white difference in all-cause mortality:

  \[ ASDR^B_{i,t} - ASDR^W_{i,t} = a_i + b_i(ASDR^B_{t} - ASDR^W_{t}) \]
  
  \( i \) indexes cause group; \( t \) indexes year; \( Sb_i = 1 \).

Age-Adjusted All-Cause Male Death Rates by Race and Age Group, 1960-95

Ages 15-39

Ages 40-64
Percentage Contribution of Causes of Death to Change in Black-White Difference in Male Mortality, Ages 15-39

<table>
<thead>
<tr>
<th>Decrease in Racial Difference</th>
<th>Increase in Racial Difference</th>
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<tbody>
<tr>
<td>1960-67</td>
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<td>1968-83</td>
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<td>1984-95</td>
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</tbody>
</table>

- HIV
- Infections, pneumonia, influenza
- Cancer
- Diabetes
- Stroke
- Circulatory diseases (ex. stroke)
- Homicide
- Accidents
- All other causes

-50% -40% -30% -20% -10% 0% 10% 20% 30% 40% 50% 60% 70%
Percentage Contribution of Causes of Death to Black-White Difference in Male Mortality, Ages 40-64

- HIV
- Infec., pneum., infl.
- Cancer
- Diabetes
- Stroke
- Circulatory diseases
- Homicide
- Accidents
- All other causes

1960-62 vs. 1993-95
Percentage Contribution of Causes of Death to Change in Black-White Difference in Male Mortality, Ages 40-64

Decrease in Racial Difference | Increase in Racial Difference
--- | ---
1960-67 | HIV Infections, pneumonia, influenza, Cancer, Diabetes, Stroke, Circulatory diseases (ex. stroke), Homicide, Accidents, All other causes
1968-83 | HIV Infections, pneumonia, influenza, Cancer, Diabetes, Stroke, Circulatory diseases (ex. stroke), Homicide, Accidents, All other causes
1984-95 | HIV Infections, pneumonia, influenza, Cancer, Diabetes, Stroke, Circulatory diseases (ex. stroke), Homicide, Accidents, All other causes

Percentage Contributions:
Conclusions – Ages 15-39

- **Homicide**: a key determinant of racial difference in overall male mortality in 1960-62 and 1993-95 and for changes in the racial disparity over time.

- **HIV/AIDS**: the most important cause contributing to the widening of the black-white difference between 1984 and 1995.

- **Other causes**: made smaller contributions to racial disparity in 1993-95 than in 1960-62, and modest contributions to changes in the racial difference over time.
Conclusions – Ages 40-64

- **Stroke**: made an important contribution to the decline in black-white difference male mortality between 1960 and 1983.
- **Other circulatory diseases**: increased black-white difference in the 1960s and 1984-95; makes a larger contribution to the black-white difference in 1993-95 than in 1960-62.
- **Cancer**: increased black-white difference between 1960 and 1983; makes a larger contribution to the black-white difference in 1993-95 than in 1960-62.
- **HIV/AIDS**: increased black-white difference between 1984 and 1995.
- **Other Causes**: contributions more modest and mixed over time.
Age-Adjusted All-Cause and Homicide Death Rates for Males by Race, Ages 15-39, 1960-95

ALL CAUSES

Deaths per 100,000

Year


HOMICIDE

Deaths per 100,000

Black

White
Age-Adjusted HIV Infection Male Death Rates by Race and Age Group, 1984-95

Ages 15-39

Ages 40-64
Age-Adjusted Lung Cancer Male Death Rates by Race, Ages 40-64, 1960-95
Age-Adjusted Stroke Male Death Rates by Race, Ages 40-64, 1960-95