Exploring the Relationship between Health Disparities and Characteristics of Neighborhoods: The Case of Cardiovascular Disease in Chatham County

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Health disparities lead to poor health which will cause higher medical expenditures and perpetuate the cycle of poverty.

Disparities exist for many health incomes including cancer, diabetes and cardiovascular disease (Gee and Payne-Sturges 2004).

Minority and disadvantaged neighborhoods tend to have higher rates of mortality and morbidity for many health outcomes. Residential segregation is believed to play an important in producing and maintaining health disparities (Sexton 1993, Thomas and Quinn 2008).
Cardiovascular Disease

- It is the number one cause of death in the U.S.
- Cardiovascular Disease is the disease primarily dealing with arteries and veins
  - High Blood Pressure
  - Rheumatic Fever & Heart Diseases
  - Hypertensive Heart Disease
  - Obstructive Heart Diseases
  - Stroke
  - Hardening of the Arteries
  - Aortic Aneurysm & Dissection
This study is to map the incidence of cardiovascular diseases and identify the demographic and socioeconomic factors of neighborhoods associated with the distribution of cardiovascular disease incidences in Chatham County, GA.

- Mortality data of cardiovascular diseases from 2001 to 2007 (GA Department of Public Health)
- 2006-2010 American Community Survey
Neighborhood Variables

- Below poverty level
- Unemployed people
- 65 years and older
- Median age
- African American
- People without high school diploma
- Walk to work
- Median household income
- House built in 1979 or earlier
- Median housing value
- Lacking plumbing
- Lacking kitchen
Mortality Rates of Cardiovascular Diseases

Legend
- 0 - 179
- 180 - 290
- 291 - 402
- 403 - 608
- 609 and over
Mortality Rates of Cardiovascular Diseases: White

Legend
- 0 - 179
- 180 - 290
- 291 - 402
- 403 - 608
- 609 and over
Mortality Rates of Cardiovascular Diseases: African American

Legend
- 0 - 179
- 180 - 290
- 291 - 402
- 403 - 608
- 609 and over
Proportion of people living below poverty level
Proportion of unemployed people

Legend
- High School Attendance Zones
- 0 - 2
- 3 - 5
- 6 - 9
- 10 - 14
- 15 - 32
Proportion of African American
Proportion of people without high school diploma
Proportion of housing units with lacking complete kitchen facilities

Legend
- High School Attendance Zones
  - 0
  - 1 - 2
  - 3 - 6
  - 7 - 9
## Results of Correlation Analysis

<table>
<thead>
<tr>
<th>No.</th>
<th>Variables</th>
<th>MTOTAL</th>
<th>MWHITE</th>
<th>MBLACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Proportion of people living below poverty level</td>
<td>.154</td>
<td>-.106</td>
<td>.241*</td>
</tr>
<tr>
<td>2.</td>
<td>Median Household Income</td>
<td>-.283**</td>
<td>-.038</td>
<td>-.220</td>
</tr>
<tr>
<td>3.</td>
<td>Proportion of unemployed people</td>
<td>.220</td>
<td>-.108</td>
<td>.082</td>
</tr>
<tr>
<td>4.</td>
<td>Proportion of African American</td>
<td>.407***</td>
<td>.067</td>
<td>.058</td>
</tr>
<tr>
<td>5.</td>
<td>Proportion of people without high school diploma</td>
<td>.357**</td>
<td>-.026</td>
<td>.134</td>
</tr>
<tr>
<td>6.</td>
<td>Median age</td>
<td>.166</td>
<td>.139</td>
<td>-.049</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01; ***p<0.001
## Results of Correlation Analysis

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</thead>
<tbody>
<tr>
<td>7.</td>
<td>Proportion of people 65 years and older</td>
<td>.400***</td>
<td>.192</td>
<td>.060</td>
</tr>
<tr>
<td>8.</td>
<td>Proportion of people walking to work</td>
<td>-.003</td>
<td>-.085</td>
<td>.519***</td>
</tr>
<tr>
<td>9.</td>
<td>House built in 1979 or earlier</td>
<td>.591***</td>
<td>.136</td>
<td>.484***</td>
</tr>
<tr>
<td>10.</td>
<td>Median housing value</td>
<td>.034</td>
<td>-.032</td>
<td>.232</td>
</tr>
<tr>
<td>11.</td>
<td>Proportion of housing units with lacking complete plumbing facilities</td>
<td>.393***</td>
<td>-.318**</td>
<td>.254*</td>
</tr>
<tr>
<td>12.</td>
<td>Proportion of housing units with lacking complete kitchen facilities</td>
<td>.295**</td>
<td>.176</td>
<td>.144</td>
</tr>
</tbody>
</table>

* p<0.05; ** p<0.01; *** p<0.001
Socioeconomic factors are associated with the incidence of cardiovascular disease particularly among African American

Housing factors are significantly associated with the incidence of cardiovascular disease including housing units built before 1979 and housing unit with lacking plumbing facilities

Further analysis is needed
Thank you