The Geography of Viral Hepatitis C In Texas, 1992-1999

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Overview

- Background
- Objectives
- Data Sources and Methods
- Results and Findings
Background

- Baylor University Medical Center Proceedings – urban and border clustering

- Shi and Steven’s *Vulnerable Populations in the United States* – ethnic disparity

- National Health and Nutrition Survey III and CDC – gender variability
Objectives and Hypotheses

- Analyze factors contributing to higher rates of HCV in Texas counties
  - Urbanized areas have higher rates
  - Ethnicity is a common determinant of HCV illness
  - Male rates of HCV illness are not equal to Female rates
Data Sources and Methods

- Texas county morbidity rates extracted from Texas Department of State Health and 2000 US Census

- HCV Rates in illnesses per 100,000

- Statistical methods include simple linear regression, correlation, analysis of variance and comparison of means
Population Density and Illness Rates by County

Total Viral Hepatitis C Illness by County per 100,000

Legend
Total HCV Rates 1992 to 1999
- 0-1
- 1-2
- 2-3
- 3-12

Bexar
Harris
Dallas
Tarrant

Figure 1
# Urbanization

<table>
<thead>
<tr>
<th></th>
<th>HCV Rates per 100,000</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Counties</td>
<td>1.84</td>
<td>5.06</td>
</tr>
<tr>
<td>Urban Counties</td>
<td>1.68</td>
<td>1.73</td>
</tr>
<tr>
<td>T Test</td>
<td></td>
<td>0.613</td>
</tr>
</tbody>
</table>
Race and Ethnicity

- Rates of HCV illness not equal among ethnic groups
- African Americans had higher rates compared to Hispanics and Whites
- Ethnicity is a significant factor in rates of HCV illness
### Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Rate</td>
<td>255</td>
<td>1.417</td>
<td>2.0384</td>
<td>0</td>
<td>17.8</td>
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<tr>
<td>Black Rate</td>
<td>255</td>
<td>2.08</td>
<td>12.823</td>
<td>0</td>
<td>195</td>
</tr>
<tr>
<td>Hispanic Rate</td>
<td>255</td>
<td>1.58</td>
<td>3.400</td>
<td>0</td>
<td>25</td>
</tr>
</tbody>
</table>
Gender

- Paired-samples t test indicated a positive correlation of \( r = .307, \ p < .01 \)

- Males have a statistically higher rate of illness than females

- Gender is a significant factor in rates of HCV illness
### Paired Samples Statistics

<table>
<thead>
<tr>
<th>Pair</th>
<th>Male Rate</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.46</td>
<td>254</td>
<td>3.445</td>
<td>.216</td>
</tr>
<tr>
<td></td>
<td>1.152</td>
<td>254</td>
<td>1.7445</td>
<td>.1095</td>
</tr>
</tbody>
</table>
Implications

- Rural and Urban areas in Texas have an almost equivalent risk of infection

- Urban areas have been the main focus of previous intervention efforts

- New intervention efforts in Texas must focus especially on minorities in rural areas