Examining Health Literacy and Sociodemographics among Rural and Urban Parents Enrolled in an ongoing Tobacco Control Prevention Trial

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Health Literacy

"the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."-Health Literacy: A Prescription to End Confusion-Institute of Medicine.

http://nnlm.gov/outreach/consumer/hlthlit.html
Disclosures

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Background and Purpose

- Tobacco use: #1 preventable cause of death and disease world wide.

- Purpose: examine the relationship between health literacy and sociodemographics in rural & urban parents in the Southeastern U.S. enrolled in a tobacco control trial.
Health Literacy

Involves different abilities:

- Traditional literacy: read and write
- Numeracy literacy: use quantitative/numbers information (ex: diabetic patient on sliding scale insulin)
- Oral literacy: speak and listen effectively
- Print literacy: interpret written materials


Methods (cont’d)

- Randomized controlled trial (RCT) with 14 elementary schools: 7 rural; 7 urban
- One child (4th grade) and at least one parent/caregiver/child recruited as family unit
- Health literacy obtained at end of treatments (control and intervention) at final post-testing (students in 7th grade)
- Two screening tools: REALM, SILS
Methods (cont’d)

REALM Instrument:
- Correct pronunciation of 66 medical words progressing from simple to more difficult (i.e., fat, flu to diabetes, antibiotics)
- Correct pronunciation number indicates reading level. NOTE: of 4 categories, we divided into < HS or > HS


Methods (cont’d)

SILS (Single Item Literacy Screener)
- Asks one question: “How often do you need to have someone help you when you read instructions, pamphlets, or other written material from your doctor or pharmacy?”
- Responses: range from 1 (never) to 5 (always)

Morris NS et al. BMC Fam Practice 2006; 21
Methods

- **REALM** (Reading Estimate of Adult Literacy in Medicine) scores dichotomized: literacy < high school and literacy ≥ high school

- **SILS** (Single Item Literacy Screener) scores dichotomized as either having difficulty reading or having no difficulty reading

Methods con’t.

- **Chi-Square/t-tests** were performed to examine differences in REALM and SILS scores between Urban and Rural parents.

- **Statistical Analyses** were performed using SAS 9.4 and significance level set at \( \alpha = 0.05 \)

A Total of 195 parents completed the two health literacy screenings.
Results/Findings

- Total number of Parents: n=195; 144-Rural; 51-Urban
- Average age 37.4 years (SD=11.7)
- The majority of the population consisted of black (74%) single (45%) females (93%) w/ 10 years of education (SD=4.0)

Table 1: Urban vs. Rural Overall

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Urban</th>
<th>Rural</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>33.6</td>
<td>38.4</td>
<td>0.0057</td>
</tr>
<tr>
<td>Black Race %</td>
<td>94%</td>
<td>67%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Married %</td>
<td>20%</td>
<td>42%</td>
<td>0.0031</td>
</tr>
<tr>
<td>Two-parent household %</td>
<td>31%</td>
<td>48%</td>
<td>0.0333</td>
</tr>
<tr>
<td>Education in yrs</td>
<td>9</td>
<td>10.9</td>
<td>0.0038</td>
</tr>
</tbody>
</table>

Table 3: Parent Income and Education by SILS Groups stratified by Rural/Urban Status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>Rural</th>
<th>Urban</th>
<th>p-value different association rural and urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Income – n, %</td>
<td>$0 - $9,999</td>
<td>21 (21.7)</td>
<td>18 (47.4)</td>
<td>17 (50.0)</td>
</tr>
<tr>
<td></td>
<td>$10,000 - $19,999</td>
<td>16 (16.5)</td>
<td>10 (25.3)</td>
<td>7 (20.6)</td>
</tr>
<tr>
<td></td>
<td>$20,000 - $29,999</td>
<td>18 (18.6)</td>
<td>4 (10.5)</td>
<td>3 (8.8)</td>
</tr>
<tr>
<td></td>
<td>$30,000 - $39,999</td>
<td>16 (16.5)</td>
<td>3 (7.9)</td>
<td>2 (5.9)</td>
</tr>
<tr>
<td></td>
<td>$40,000 - $49,999</td>
<td>7 (7.2)</td>
<td>2 (5.3)</td>
<td>2 (5.9)</td>
</tr>
<tr>
<td></td>
<td>$50,000 or more</td>
<td>19 (19.6)</td>
<td>1 (2.6)</td>
<td>3 (8.8)</td>
</tr>
<tr>
<td>Parent Education in years – mean, SD</td>
<td>10.8 (3.9)</td>
<td>11.1 (3.3)</td>
<td>0.9814</td>
<td>8.3 (4.8)</td>
</tr>
</tbody>
</table>
### Results/Findings (cont’d)

#### REALM

**Income levels**
- Rural parents w/ higher REALM scores also had higher income levels
- Urban parents’ income levels = Not significant w/ REALM scores

**Education**
- Both urban and rural parents’ education did not differ based on REALM scores

#### SILS

**Income levels**
- Rural parents with higher SILS scores had higher income levels
- Urban parents’ income levels = Not significant with SILS scores

**Education**
- Both urban and rural parents’ education did not differ based on SILS scores
Discussion

- Both REALM and SILS scores measuring health literacy were positively associated with Rural parents’ income.
- There was no association with Urban parents’ income.
- Education did not show an association with REALM or SILS scores in either population.

Further Directions

- Further studies are needed to confirm this study’s findings.
- While education and income are traditionally correlated, some studies do not support this.
- Further research is recommended using additional literacy measures (i.e., Newest Vital Sign) to explore potential causative factors for differences in urban and rural populations and specific impact on health outcomes.