Research Questions

1. What are predictors of ACE exposure among SC residents?

2. Do differences exist in the types and numbers of ACEs experienced by SC residents based on residential/rurality?

Methods

Design
- Statewide, cross-sectional analysis

Data source
- Behavioral Risk Factor Surveillance System (BRFSS)
- ACE module (11 questions)

South Carolina data from 2014 and 2015

Variable construction
- ACEs tabulated by number and types
- Multivariable regression modeling

Variables
- Variable construction
- ACE module (11 questions)
- South Carolina data from 2014 and 2015
- Multivariable regression modeling

Description of study sample

- 22,844 SC BRFSS respondents
- 15.9% rural residents
- 52.8% female
- 68.1% non-Hispanic white
- 35.3% some college
- 35.2% < 40 years old
- 51.0% 40-69 years
- 35.2% annual income of $50,000 or more
- 19,942 Responded to ACES module
- 18,174 Complete demographic data

Table 1. Characteristics associated with exposure to 4 or more ACEs among SC residents, 2014-2015 BRFSS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>0.75</td>
</tr>
<tr>
<td>Female</td>
<td>1.59</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>0.49</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.44</td>
</tr>
<tr>
<td>At least some college</td>
<td>0.82</td>
</tr>
<tr>
<td>Income of $25,000-49,000</td>
<td>0.69</td>
</tr>
<tr>
<td>Income of ≥ $50,000</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Table 2. Rural-urban comparison of ACE exposure by type of ACEs experienced

<table>
<thead>
<tr>
<th>ACE</th>
<th>RURAL (%)</th>
<th>URBAN (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental illness</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>Misuse of alcohol</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>Misuse of drugs</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Incarceration</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Separation/divorce</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>Domestic violence</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Physical abuse</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Emotional abuse</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Sexual abuse 1</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Sexual abuse 2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Sexual abuse 3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Discussion

Challenge for rural areas
- Despite reporting less ACE exposure than urban counterparts, almost 60% of rural residents reported at least one ACE and 15% reported experiencing four or more ACEs
- Care coordination, social support services, and access to health care are limited in rural areas
- Thus, families in rural areas may be less equipped to mitigate and manage the effects of ACEs

Background

Adverse Childhood Experiences (ACES)
- Traumatic events that occur in a child's life between birth and 18 years of age
- ACE exposure is linked to risky health behaviors & chronic health conditions in adulthood
- ACE exposure may also result in an intergenerational cycle of negative experiences
- ACE exposure is linked to risky health behaviors & chronic health conditions in adulthood

Rural children are different from urban children in some ways
- More likely to report that they live in safe and supportive communities
- Less likely to report usually or always feeling parenting stress

Rural parents/families are different from urban families in some ways
- More likely to share a family meal with their child daily
- Less likely to report usually or always feeling parenting stress
- More likely to report that they live in safe and supportive communities
- More likely to attend religious services weekly

Public/State Policy Applications

Expand the Quality through Technology and Innovation in Pediatrics (QITIP) program (a program that integrates mental/behavioral health and ACE-like assessments into pediatric settings)

Fund opportunities to promote availability and access to parenting skills programs and pediatric care in rural communities.

Engage rural health care providers as advocates for an ACE assessment as part of any comprehensive pediatric medical exam

Train all public health providers in rural communities on ACEs:
- the effect of ACEs on child development
- the impact of ACEs on life trajectory
- importance of positive parenting
- how to build child and family resilience

Promote policies and programs that facilitate access to social, mental, medical, or public health services in rural areas, including access to transportation.

Strengths and limitations

Strengths
- Use of new SC data
- Large sample size

Limitations
- Cross-sectional study with retrospective report of ACE exposure
- Institutionalized adults excluded
- Based on current residence, rather than childhood residence

Reference:
3. Anda RF, Felitti VJ, Melchior ML, Proctor D,太久不写

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