

# Rural-urban differences in exposure to Adverse Childhood Experiences (ACEs) among South Carolina adults

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## Background

### Adverse Childhood Experiences (ACES)

Traumatic events that occur in a child's life between birth and 18 years of age. <sup>1</sup>  
ACE exposure is linked to risky health behaviors & chronic health conditions in adulthood. <sup>1</sup>  
ACE exposure may also result in an intergenerational cycle of negative experiences. <sup>2,3</sup>

### Rural children are *different* from urban children in some ways: <sup>4</sup>

More likely to live in poor families  
More likely to live with someone who smokes  
Less likely to be breastfed  
More likely to spend an hour+ each weekday watching television or videos

### Rural parents/families are *different* from urban families in some ways: <sup>4,5</sup>

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



## 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

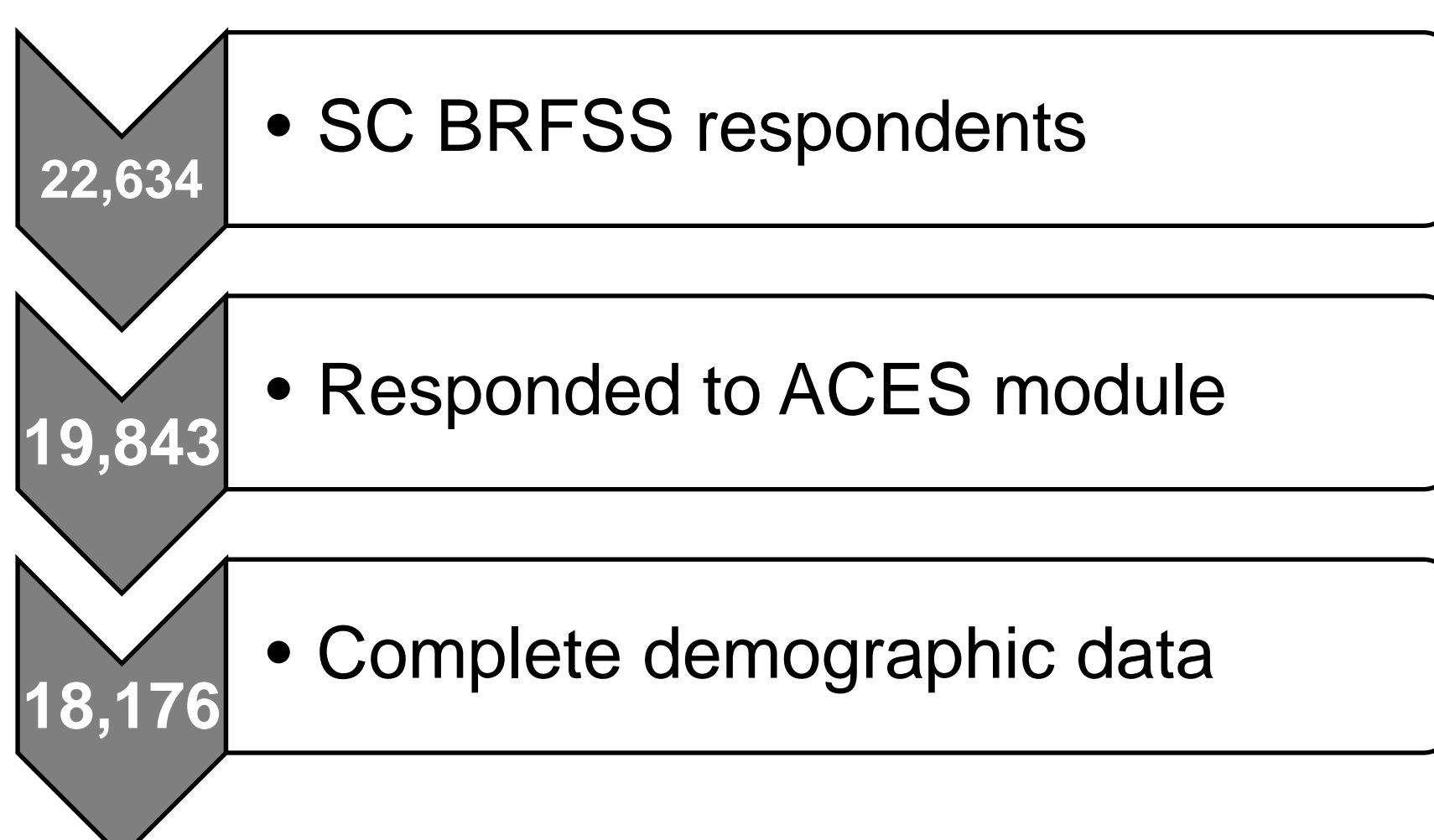
### Variable construction

- ACEs tabulated by number and types
- Urban influence codes (UIC) determined rurality
- Demographic covariates

### Analytic methods

- CDC survey sampling weights corrected for BRFSS sampling strategy
- Descriptive statistics
- Multivariable regression modeling

## Description of study sample



- 15.9% rural residents
- 52.8% female
- 68.1% non-Hispanic white
- 55.3% some college
- 35.2% < 40 years old
- 51.0% 40-69 years
- 35.2% annual income of \$50,000 or more

## Results

Figure 1. ACE exposure among all adults responding to the SC BRFSS survey, 2014-2015

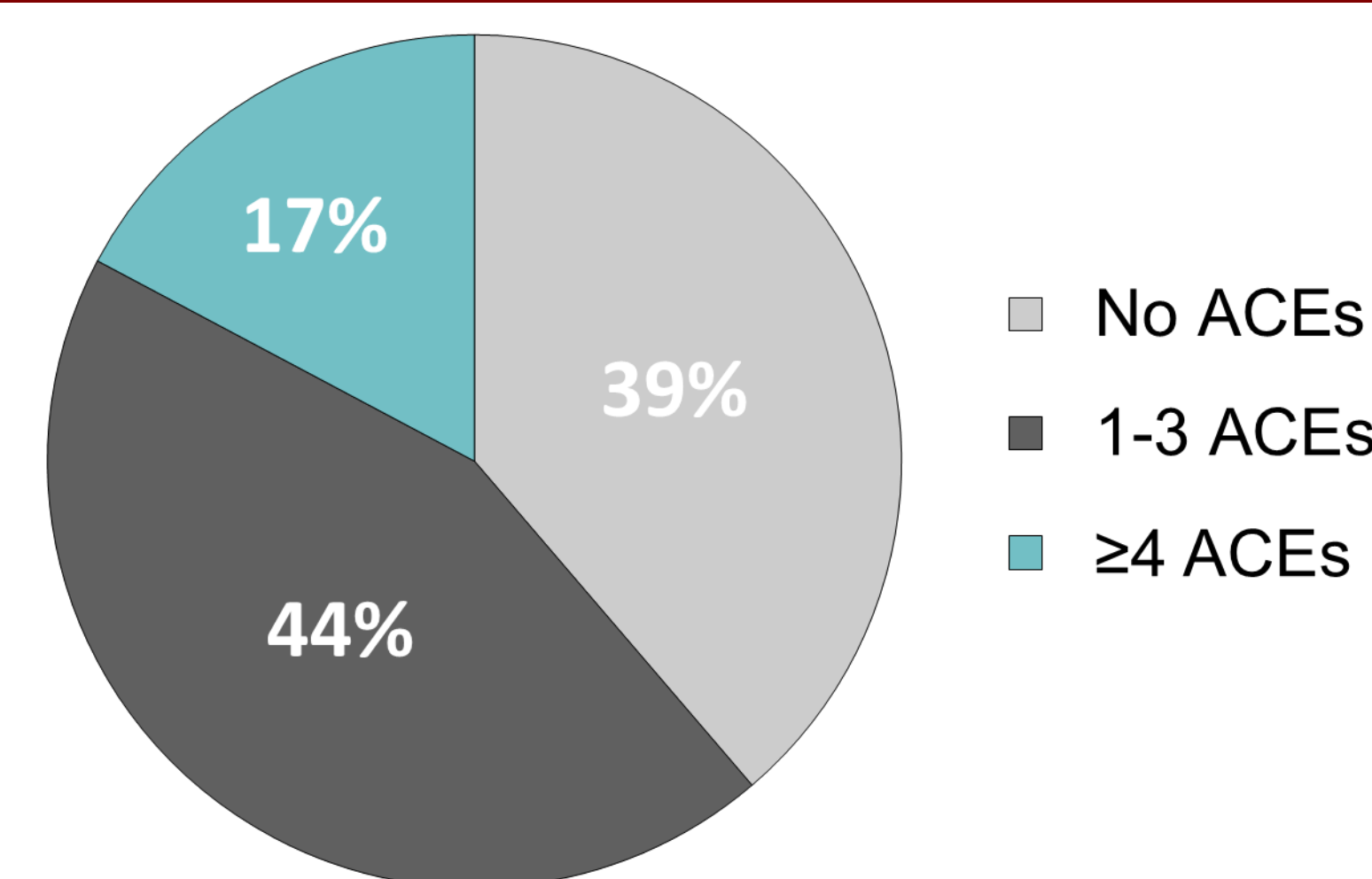


Table 1. Characteristics associated with exposure to 4 or more ACEs among SC residents, 2014-2015 BRFSS

Characteristic	Odds ratio *
Rural	0.75
Female	1.59
Black, non-Hispanic	0.49
Hispanic	0.44
At least some college	0.82
Income of \$25,000-49,000	0.69
Income of ≥ \$50,000	0.45

Figure 2. Rural-urban comparison of ACE exposure by number of ACEs experienced\*

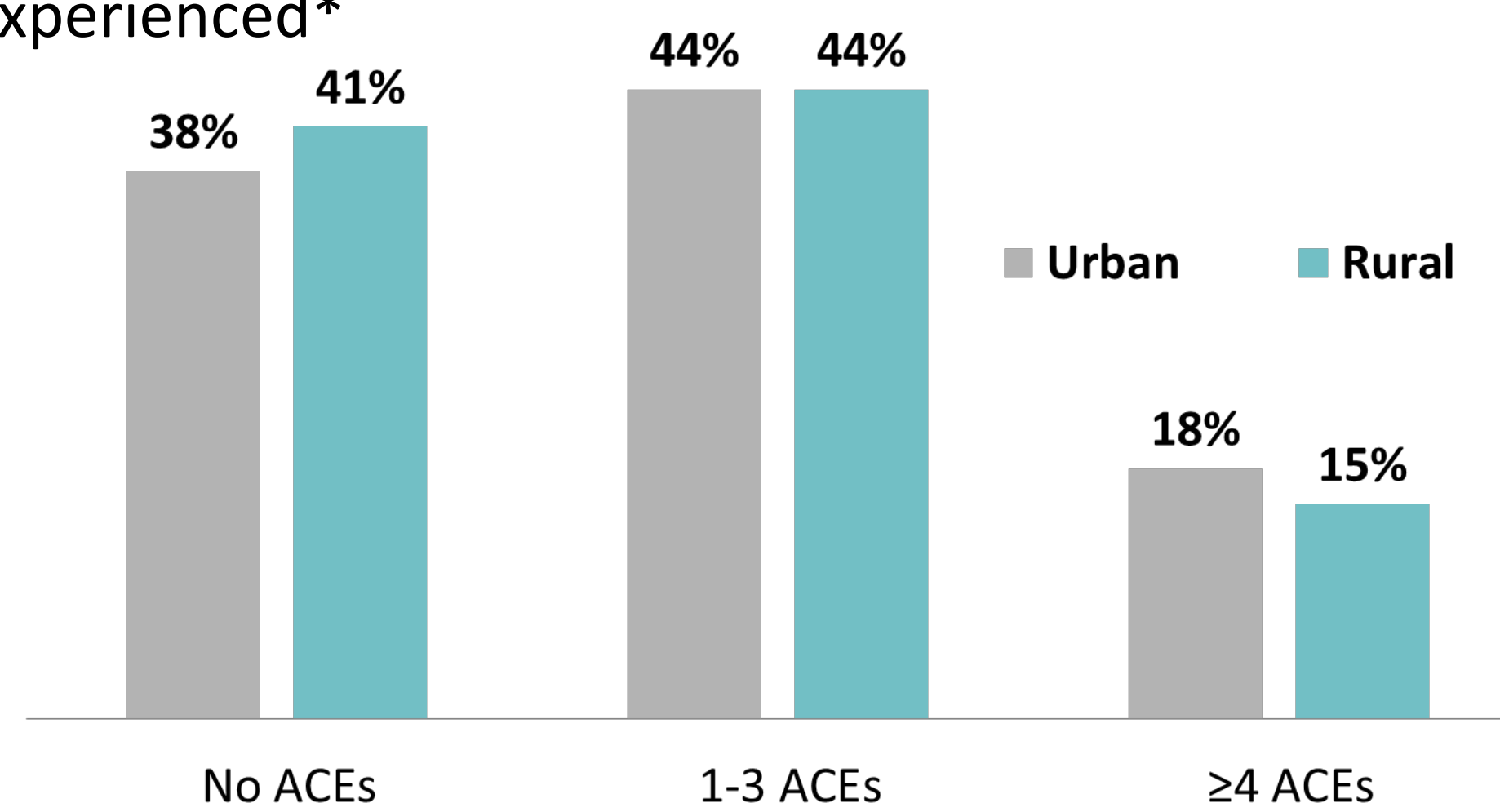


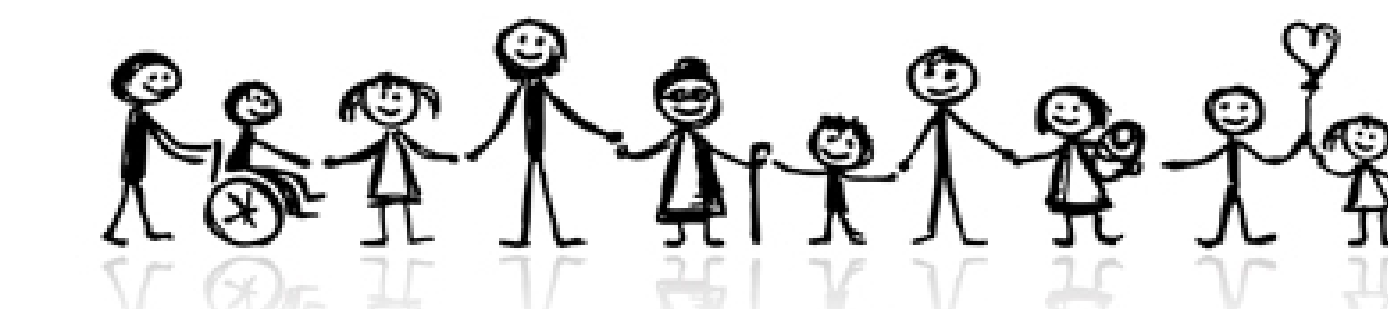
Table 2. Rural-urban comparison of ACE exposure, by ACE type\*

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

## Discussion

### Good News for rural areas

- Compared to their urban counterparts, rural respondents in SC were less likely to report exposure to 4 or more ACEs and to report each type of ACE
- Literature shows rural children are well-connected to families and communities <sup>4</sup>
- Social connection are considered one of the five critical protective factors that can support and strengthen families <sup>6</sup>



### 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

## Public/State Policy Applications

**Fund** infrastructure to provide ACE-related programs and services to rural communities

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

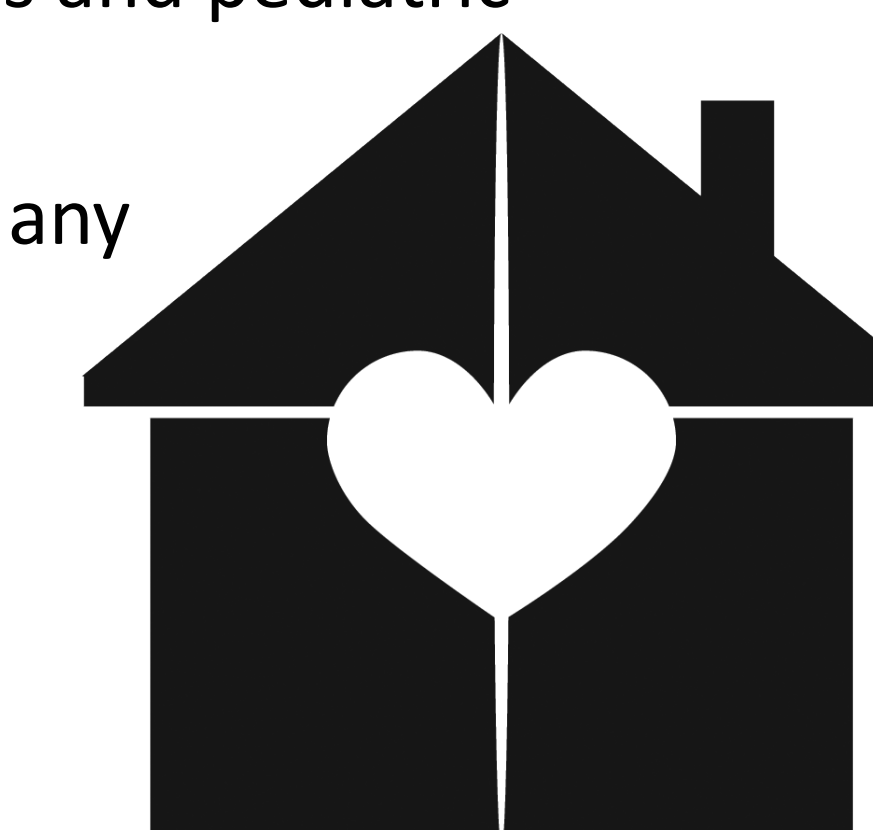
**Fund** opportunities to promote availability and access to parenting skills programs and pediatric care in rural communities.

**Engage** rural health care providers as advocates for an ACE assessment as part of any comprehensive pediatric medical exam <sup>7,8</sup>

**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

### References:

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**For more about the SC Rural Health Research Center:** <http://rhr.sph.sc.edu/index.php>

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