

**CENTER FOR SOCIAL ORGANIZATION OF SCHOOLS** 

### Schools of Suffering / Suffering Schools: Student Trauma, Anxiety, and Depression in the United States

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### About 35 million children have experienced at least one adverse childhood experience

(Child and Adolescent Health Measurement Initiative, 2013)

# Adverse Childhood Events (ACEs) on the NSCH: 2011/2012

- 1. Very or somewhat often hard to get by on family's income
- 2. Parent divorced or separated
- 3. Parent died
- 4. Parent in jail or prison
- 5. Saw or heard parents or other adults in home slap, hit, kick, punch, or beat each other up
- 6. Victim of violence or witness to neighborhood violence
- 7. Lived with mentally ill, suicidal, or severely depressed individual
- 8. Lived with someone with alcohol or drug problem
- 9. Treated or judged unfairly because of race or ethnicity

### Prevalence of ACEs, Anxiety, and Depression

- Adverse Childhood Events (ACEs) (Sacks, Murphey, & Moore, 2014)
  - Most children ages 0-17 (54 percent) experienced none of first 8 NSCH ACEs
  - About 35 percent experienced 1-2 and 11 percent experienced 3 or more
- Anxiety
  - One in four adolescents ages 13-18 had an anxiety disorder at some point in their lifetime; 6 percent had a severe anxiety disorder (Merikangas et al., 2010)
- Depression
  - About 13 percent of adolescents ages 12-17 had a major depressive episode in the last year in 2015; 8 percent had severe associated impairments (National Institute of Mental Health [NIMH], n.d.)

# Percent of Spokane elementary school children with academic problems by number of ACEs



SOURCE: Blodgett et al., n.d.

## ACEs negatively related to continuous high school enrollment



- Gang
- Drug use
- Incarceration
- Death of loved one
- Regular care giver
- Foster care
- Suspended/expelled
- Homeless

- Not academically prepared for high school
- Physically or emotionally abused by non-parent
- Moved
- Changed schools

Relationships between anxiety and depression and student outcomes

- Anxiety
  - Anxiety rates: 14.1% among students with insufficient grades, 9.4% among those with sufficient grades, and 3.9% among those with good or very good grades (Mazzone et al., 2007)
- Depression
  - A 1 SD increase in depressive symptoms is linked to a 25 to 30 percent increase in likelihood of dropping out (Fletcher, 2010)

### Research questions

- How many school-children experience traumatic family experiences, anxiety, and depression?
- In which states are these challenges most prevalent?
- How are age, race, sex, disability status, poverty status, primary home language, and state related with these challenges?
- What do these relationships suggest about how the concentration of these challenges likely vary at the school level?

### Methods

#### Data sources

- National Survey of Children's Health (NSCH): 2011/12
- High School Longitudinal Study (HSLS): 2009

#### Outcomes of interest

- Number of adverse childhood experiences
- Depression (reported as diagnosed by doctor or other health care provider)
- Anxiety (reported as diagnosed by doctor or other health care provider)

#### Methods

#### Target populations

- NSCH: Noninstitutionalized U.S. children ages 6-17 in 2011/12
- HSLS: Ninth graders attending U.S. traditional public and charter schools serving grades 9 and 11 in HSLS sample

#### • Sample sizes

- NSCH: 61,430 (ACEs); 63,742 (Depression); 63,736 (Anxiety)
- HSLS: ~20,660 students in ~770 public schools

### Analytic approach

- Step 1: Understand how demographic and geographic variables predict ACEs, depression, and anxiety using NSCH
  - Step 1.A. Depression and anxiety estimation via logistic regression
  - Step 1.B. ACEs estimation via Ordinary Least Squares regression
- **Step 2:** Use this information to generate synthetic individual-level ACEs, depression, and anxiety data for the HSLS sample
  - Step 2.A. Depression and anxiety generated via predicted probabilities
  - **Step 2.B.** ACEs generated via multiple imputation (chained equations, predictive mean matching)
- Step 3: Aggregate synthetic ACEs, depression, and anxiety data to the school level to investigate school-level variation

### Predictor/Imputation Model Variables

- Age (in years, some specifications include squared and cubed terms)
- Economic disadvantage (<=100% poverty; >100%, <=185% poverty)
- **Disability status** (has Individualized Education Plan)
- Home/native language (non-English)
- **Race/ethnicity** (white, non-Hispanic; black non-Hispanic; Hispanic; other race or multiple races, non-Hispanic)
- Sex (male)
- State

#### Important caveats

- Estimates of anxiety and depression are likely under-estimates
  - Only includes those diagnosed by doctor and reported by parent
  - For example, just 38 percent of adolescents with a major depressive episode in the past year were treated by a medical professional for it in the past year (Substance Abuse and Mental Health Services Administration, 2014)
- Estimates of ACES are likely under-estimates
  - Excludes key adverse childhood events, such as sexual abuse
  - Parents likely to under-report
- True variation at school level likely to vary systematically from that in synthetic estimates because of omitted variables

### Results

How many school-children experience ACEs, depression, and anxiety?

### Percent of U.S. children ages 6-17 with various adverse childhood experiences: 2011-12



Often hard to get by on income Parent divorced/separated Parent died Parent incarcerated Violence among parents Neighborhood violence victim/witness Coresident with mental health... Coresident with alcohol/drug problem Treated unfairly due to race/ethnicity

> 30.0 Percent

SOURCE: Original analysis of National Survey of Children's Health: 2011/2012 data.

## Percent of U.S. children ages 6-17 by number of adverse childhood experiences: 2011-12



**Adverse Childhood Experiences** 

SOURCE: Original analysis of National Survey of Children's Health: 2011/2012 data.

## Percentage of U.S. children ever diagnosed with anxiety or depression by age: 2011/12



SOURCE: Original analysis of National Survey of Children's Health: 2011/2012 data.

In which states are ACEs, depression, and anxiety most prevalent?

## Mean number of ACEs among children ages 6-17 by state: 2011/12



### Proportion of children ages 6-17 who experienced 4+ ACEs by state: 2011/12



### Proportion of children ages 6-17 who were ever depressed by state: 2011/12



### Proportion of children ages 6-17 who were ever anxious by state: 2011/12



How are demographic variables and state related with ACEs, depression, and anxiety?

### Proportion of children who experienced 4+ ACEs by family income: 2011/12



## ACEs model coefficients for demographic variables (absolute values)

Adj. R<sup>2</sup>=.14



## Depression model odds ratios for demographic variables



## Anxiety model odds ratios for demographic variables



How do ACEs, depression, and anxiety vary at the school level?

Synthetic school-level mean ACEs among 9<sup>th</sup> graders in HSLS sample schools: 2009

- Average was 1.2 ACEs (SD=0.36)
- Ranged from 0.3 to 2.4

Mean # ACEs	% of schools
>=1	67
>=2	2.2



Synthetic school-level **4+ ACEs** rate among 9<sup>th</sup> graders in HSLS sample schools: 2009

- Average was 9 percent (SD=6.6)
- Ranged from 0 to 33 percent

4+ ACEs rate	% of schools
>=5% (1 in 20)	71.0
>=10% (2 in 20)	43.7
>=15% (3 in 20)	18.6
>=20% (4 in 20)	8.1



Synthetic school-level lifetime **depression** rates among 9<sup>th</sup> graders in HSLS sample schools: 2009

- Average was 7 percent (SD=6.0)
- Ranged from 0 to 28 percent

Depression rate	% of schools
>=5% (1 in 20)	57.6
>=10% (2 in 20)	25.4
>=15% (3 in 20)	8.0
>=20% (4 in 20)	2.5



Synthetic school-level lifetime **anxiety** rates among 9<sup>th</sup> graders in HSLS sample schools: 2009

- Average was 8 percent (SD=6.7)
- Ranged from 0 to 27 percent

Anxiety rate	% of schools
>=5% (1 in 20)	65.2
>=10% (2 in 20)	34.8
>=15% (3 in 20)	11.8
>=20% (4 in 20)	4.4



### Key takeaways

- Anxiety, depression, and 4+ ACEs each widespread but typically affect relatively few students (average H.S. < 10% for each category)
- Living in poor and near-poor households predicts experience of ACEs and likelihood of having depression/anxiety
- Meaningful variation across states: e.g., lifetime depression rate 3x higher in ME than in NJ; lifetime anxiety rate 3x higher in VT than GA
- Substantially more variation in synthetic estimates at school level (e.g., 4+ ACEs rate ranging from 0-33%)
- Intense need in some schools: For example, in 8 percent of sampled high schools, 1 in 5 ninth graders projected to experience 4+ ACEs

### Implications

- Federal statistical agencies, state education agencies, and school districts can address data gaps by collecting information on ACEs
- School districts can use school-level data on the prevalence of ACEs and mental health issues to allocate resources (e.g., psychologists)
- Poor students more likely to experience ACEs, less likely to have protective factors: more likely to experience trauma
- The concentration of children at high risk for trauma in a subset of schools demands the adoption of robust student supports

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