



Children's Emotional and Behavioral Health: Results from the 2007 National Survey of Children's Health

AMCHP Annual Conference
Shaping the Future of Maternal and Child Health
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Outline

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1. **Background & Questions of Interest**
2. **Data Source & Methods**
3. **Results:**
 - ▣ Depression and Anxiety
 - ▣ Behavioral and Conduct Disorders
 - ▣ Treatment
4. **Limitations, Discussion & Follow-up**

Background & Questions of Interest

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What we know:

20-25% of young people experience a mental disorder before age 18

50% of all cases of mental illness among adults start before age 14; 75% before age 24

Co-morbid with physical and mental illness

- **Estimates of mental health conditions and related treatment among children often:**
 - Have limited geographic representation.
 - Not Nationally-representative
 - Not State-specific
 - Utilize broad measures that combine emotional, behavioral, and/or developmental conditions.
- **Questions of interest:**
 1. What is the prevalence of diagnosed emotional and behavioral conditions?
 2. What percentage of children with emotional or behavioral conditions receive treatment?
 3. How do these estimates vary across the nation?

Methods:

2007 National Survey of Children's Health

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Quick Facts:

Cross-sectional

Telephone-based
survey (SLAITS)

Data collected
between April 2007
– July 2008

Parents/guardians
were respondents

Interview completion
rate = 66%

Sample = 91,642

- ❑ Sponsored by HRSA's Maternal and Child Health Bureau; conducted by CDC's National Center for Health Statistics;
- ❑ Examines the physical and emotional health of children ages 0-17 years of age with additional questions on community and family factors that can influence these indicators;
- ❑ Provides both State and National estimates.

Methods:

Prevalence of conditions and treatment

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Diagnosed Conditions (children ≥ 2 years of age):

- Parent report that a doctor or other health care provider ever told them that the child had:
 - ▣ Depression;
 - ▣ Anxiety problems;
 - ▣ Behavioral or conduct problems, such as Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD).

Treatment (children ≥ 2 years of age):

- Parent report that the child received any treatment or counseling from a mental health professional in past 12 months.

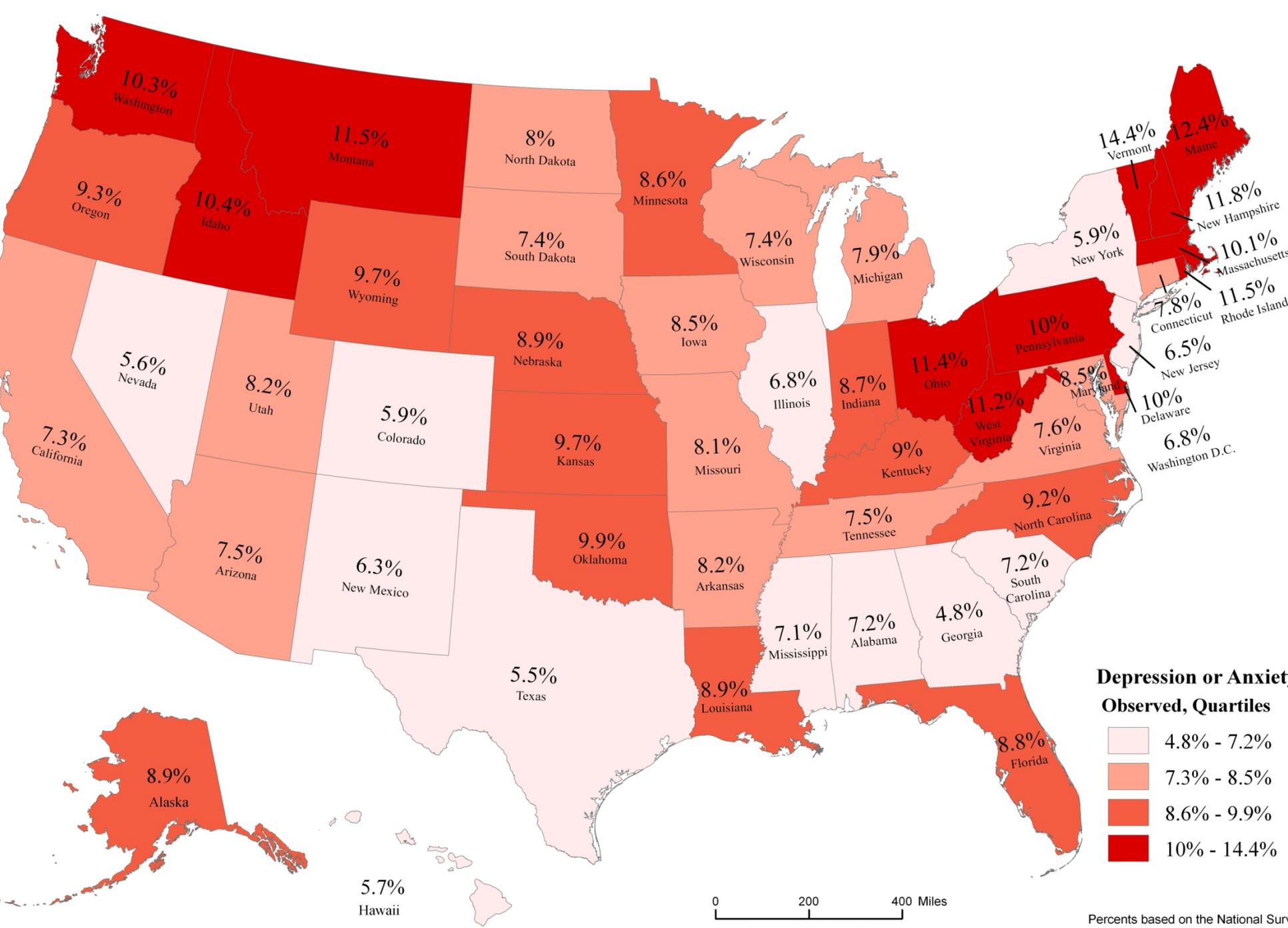
Analytic Decisions:

- ▣ Limited analyses to school-aged children (6-17 years) = analytic sample of 64,076
- ▣ Combined Anxiety and Depression
- ▣ Focus on “ever” rather than “current” diagnoses

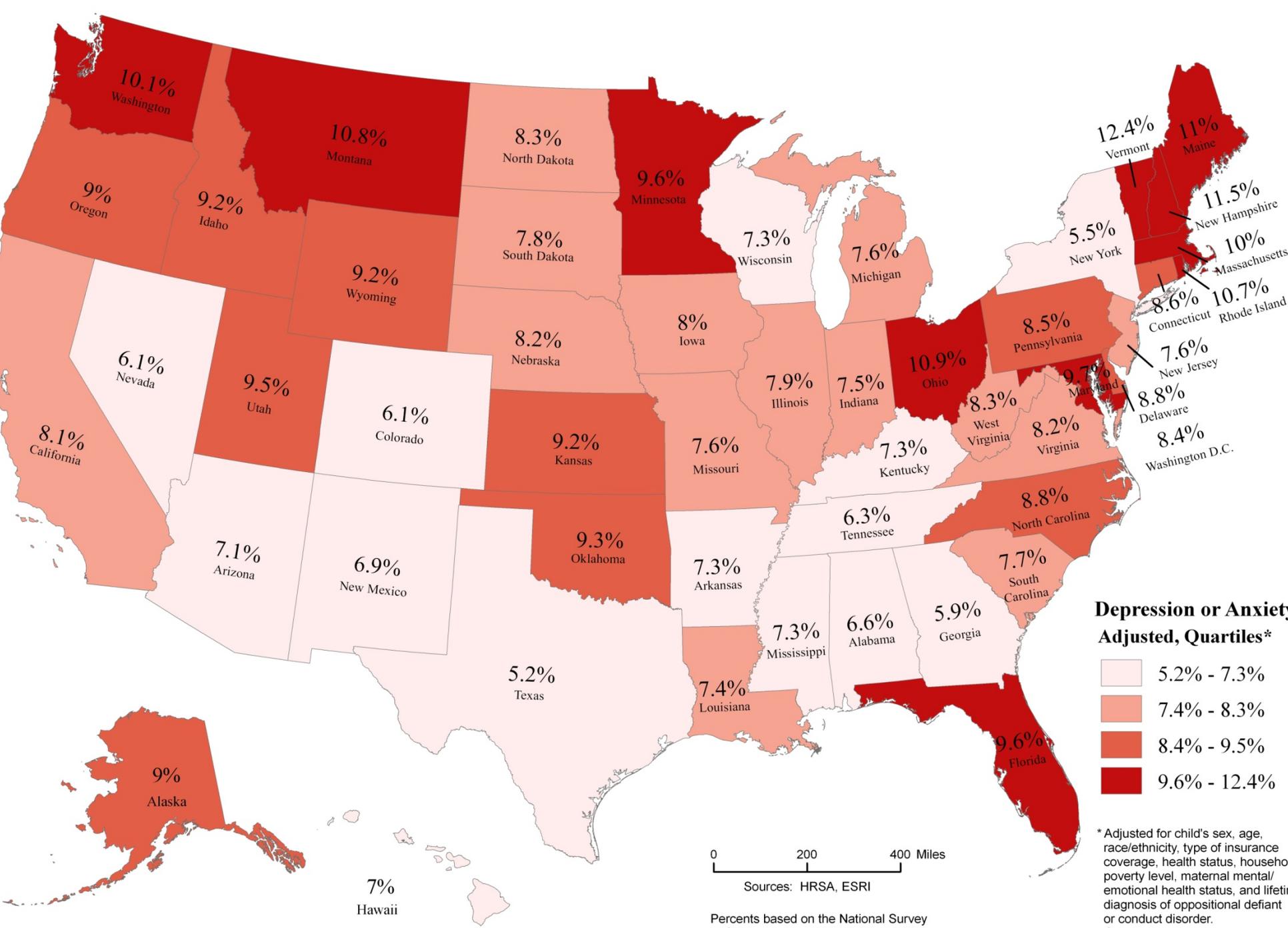
Prevalence: Depression/Anxiety

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- **7.8%** of children aged 6-17 ever diagnosed with depression or anxiety (**3.9 m**); **4.7%** currently diagnosed (**2.3 m**)
 - ▣ 4.7% ever diagnosed with depression; 5.5% ever diagnosed with anxiety
 - ▣ 51.3% ever diagnosed with depression also diagnosed with anxiety; 44.2% ever diagnosed with anxiety also diagnosed with depression;
 - ▣ 33.5% ever diagnosed with depression or anxiety also diagnosed with ODD/CD
- **Sociodemographic & health factors:**
 - ▣ Male; Older (12-17); White and NH Multiracial;
 - ▣ Living in household without two biologic/adoptive parents;
 - ▣ Being poor or near poor;
 - ▣ Having public insurance;
 - ▣ Having physical or mental health problems;
 - ▣ Poor maternal mental health; and
 - ▣ Attending an unsafe school



State	Percentage
Alaska	8.9%
Alabama	7.2%
Arizona	7.5%
Arkansas	8.2%
California	7.3%
Colorado	5.9%
Connecticut	7.8%
Delaware	10%
Florida	8.8%
Georgia	4.8%
Hawaii	5.7%
Idaho	10.4%
Illinois	6.8%
Indiana	8.7%
Iowa	8.5%
Kansas	9.7%
Kentucky	9%
Kentucky	9%
Louisiana	8.9%
Maine	12.4%
Maryland	8.5%
Massachusetts	10.1%
Michigan	7.9%
Minnesota	8.6%
Mississippi	7.1%
Missouri	8.1%
Montana	11.5%
Nebraska	8.9%
Nevada	5.6%
New Hampshire	11.8%
New Jersey	6.5%
New Mexico	6.3%
New York	5.9%
North Carolina	9.2%
North Dakota	8%
Ohio	11.4%
Oklahoma	9.9%
Oregon	9.3%
Pennsylvania	10%
Rhode Island	11.5%
South Carolina	7.2%
South Dakota	7.4%
Tennessee	7.5%
Texas	5.5%
Utah	8.2%
Vermont	14.4%
Virginia	7.6%
Washington	10.3%
Washington D.C.	6.8%
West Virginia	11.2%
Wisconsin	7.4%
Wyoming	9.7%



**Depression or Anxiety
Adjusted, Quartiles***

- 5.2% - 7.3%
- 7.4% - 8.3%
- 8.4% - 9.5%
- 9.6% - 12.4%

* Adjusted for child's sex, age, race/ethnicity, type of insurance coverage, health status, household poverty level, maternal mental/emotional health status, and lifetime diagnosis of oppositional defiant or conduct disorder. Georgia is reference.

0 200 400 Miles

Sources: HRSA, ESRI

Percents based on the National Survey of Children's Health, 2007 (N = 64,076)

Multivariate Results: Diagnoses

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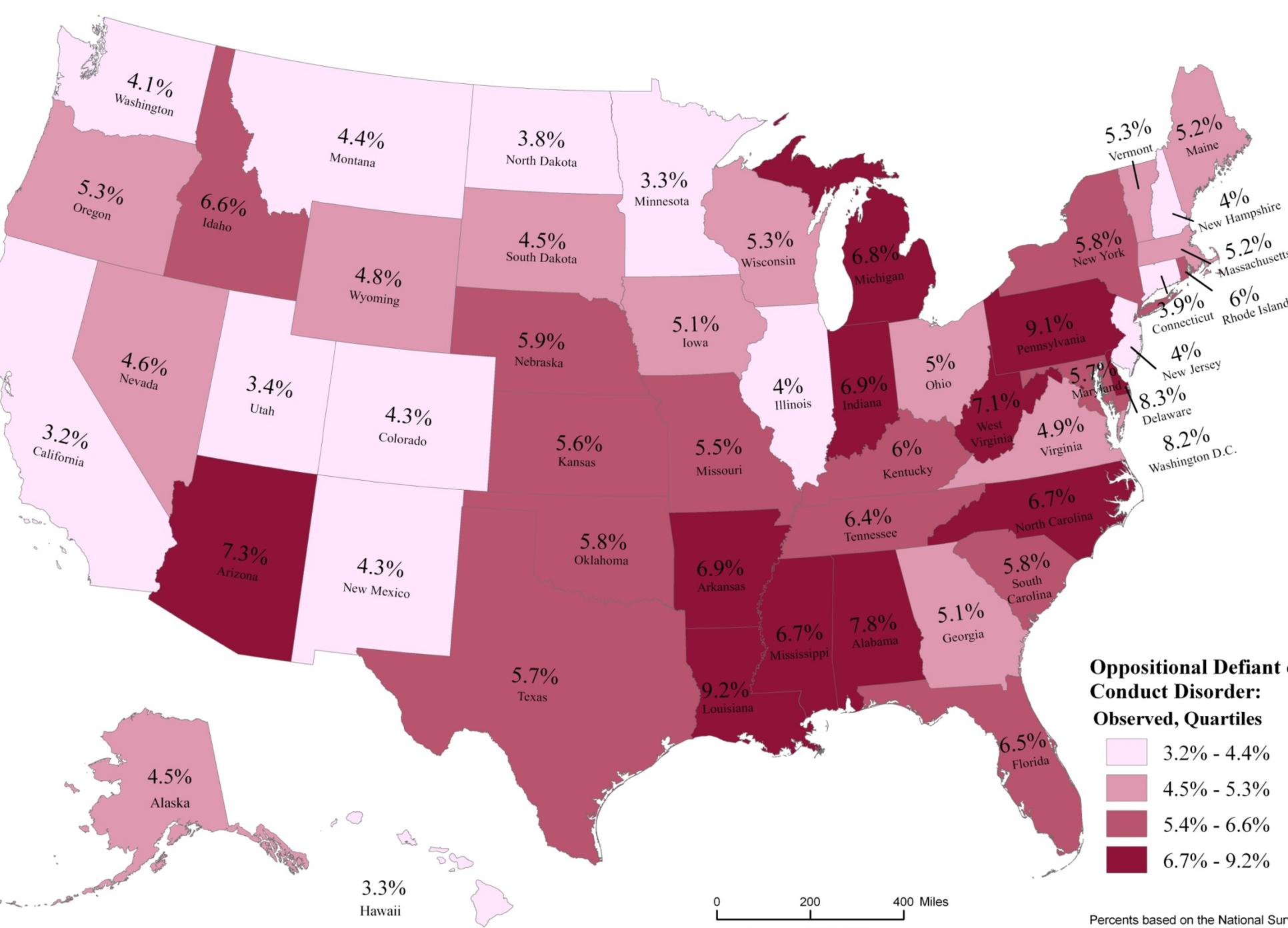
- Adjusted Odds Ratios: State of Residence
 - ▣ Higher odds of ever being diagnosed with depression or anxiety in 18 states (ref = GA)
 - ▣ Children in 8 states (MA, ME, NH, RI, VT*, MT, OH, WA) had ≥ 2 times the odds of ever being diagnosed.
- Adjusted Odds Ratios: Sociodemographic factors associated with higher odds of ever being diagnosed:
 - ▣ Older age,
 - ▣ public insurance,
 - ▣ poor physical or mental health, and
 - ▣ poor maternal mental health .

Prevalence:

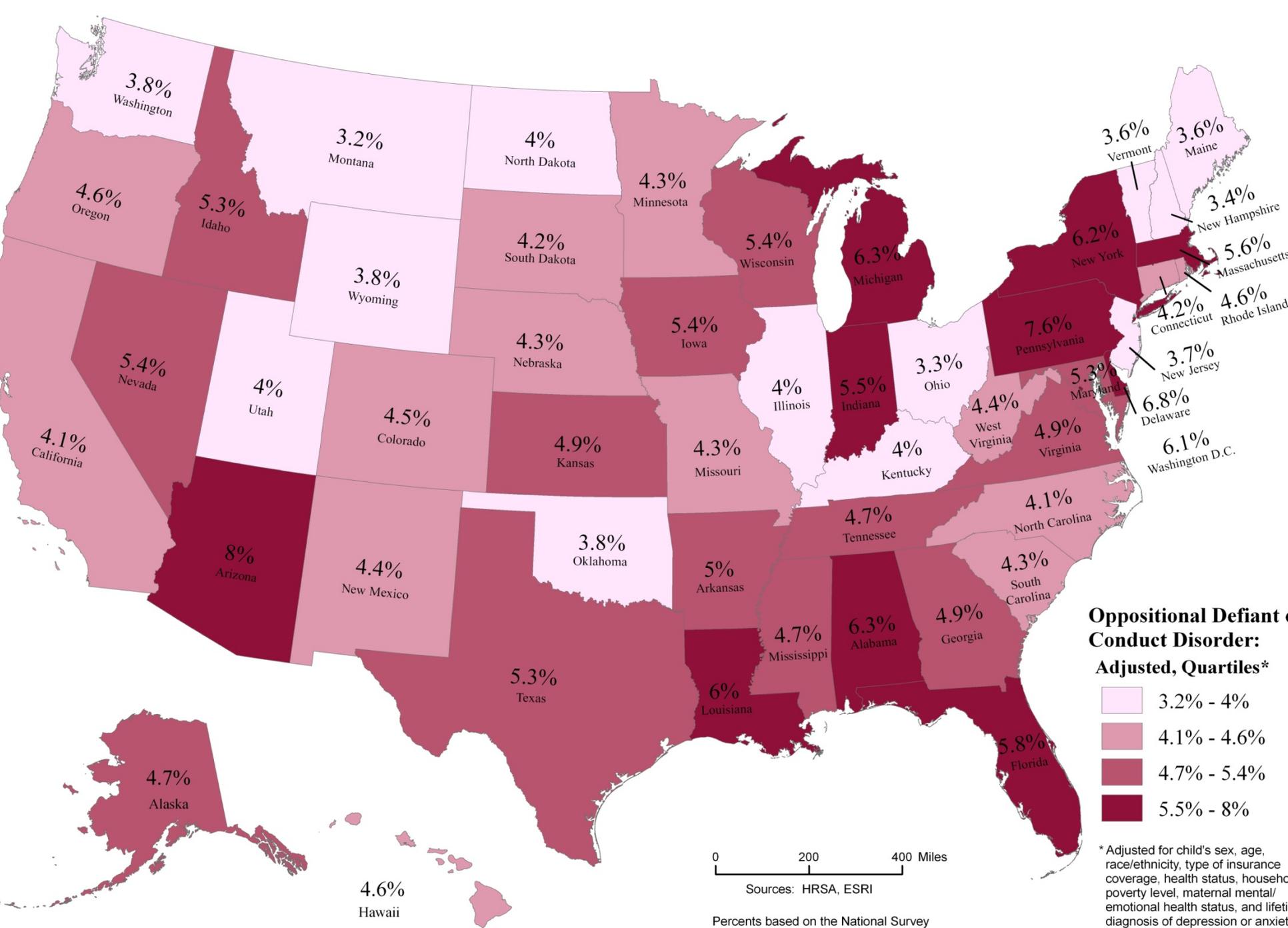
Behavioral/Conduct Problems (ODD/CD)

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- **5.4%** of children aged 6-17 ever diagnosed with Behavioral/Conduct Problems (**2.7 m**); **4.0%** currently diagnosed (**1.9 m**)
 - 34.3% ever diagnosed with ODD/CD also ever diagnosed with depression
 - 35.5% ever diagnosed with ODD/CD also ever diagnosed with anxiety
 - 48.4% ever diagnosed with ODD/CD also ever diagnosed with either depression or anxiety
- **Sociodemographic & health factors:**
 - Male; NH Black;
 - Living in household without two biologic/adoptive parents;
 - Being poor or near poor;
 - Having public insurance;
 - Having physical or mental health problems;
 - Poor maternal mental health; and
 - Attending an unsafe school.



State	Percentage
Alaska	4.5%
Alabama	7.8%
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Arkansas	6.9%
California	3.2%
Colorado	4.3%
Connecticut	3.9%
Delaware	4%
Florida	6.5%
Georgia	5.1%
Hawaii	3.3%
Idaho	6.6%
Illinois	4%
Indiana	6.9%
Iowa	5.1%
Kansas	5.6%
Kentucky	6%
Kentucky	6%
Louisiana	9.2%
Maine	5.2%
Maryland	5.7%
Massachusetts	5.2%
Michigan	6.8%
Minnesota	3.3%
Mississippi	6.7%
Missouri	5.5%
Montana	4.4%
Nebraska	5.9%
Nevada	4.6%
New Hampshire	4%
New Jersey	4%
New Mexico	4.3%
New York	5.8%
North Carolina	6.7%
North Dakota	3.8%
Ohio	5%
Oklahoma	5.8%
Oregon	5.3%
Pennsylvania	9.1%
Rhode Island	6%
South Carolina	5.8%
South Dakota	4.5%
Tennessee	6.4%
Texas	5.7%
Utah	3.4%
Vermont	5.3%
Virginia	4.9%
Washington	4.1%
Washington D.C.	8.2%
West Virginia	7.1%
Wisconsin	5.3%
Wyoming	4.8%



Percentages based on the National Survey of Children's Health, 2007 (N = 64,076)

Multivariate Results: Diagnoses

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- Adjusted odds ratios: State of Residence
 - ▣ Children in Arizona and Pennsylvania had ≥ 2 times the odds of ever being diagnosed (ref = CA).

- Adjusted odds ratios: Sociodemographic factors associated with higher odds of ever being diagnosed:
 - ▣ Being NH Black,
 - ▣ having public insurance,
 - ▣ poor physical or mental health, and
 - ▣ poor maternal mental health.

Prevalence: Treatment

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All Children 6-17 Years

- Nearly 10% of children aged 6-17 years old received some kind of mental health treatment or counseling in the past 12 months.
- State-level: Prevalence of treatment ranged from 6.4% (TX) to 15.5% (PA)
- Region-level: Prevalence of treatment ranged from 7.5% in Region VI to 13.1% in Region I.

Children 6-17 Years with Diagnosis

- Overall, 55% of children ever diagnosed with a mental health condition received mental health treatment or counseling the past 12 months (62% of those currently diagnosed)
- Prevalence of treatment varied by state of residence:
 - Dep/Anx: 42.6% (NV) – 72.7% (TN)
 - ODD/CD: 31.7% (LA) -- 78.4% (PA)
 - Either: 35.0% (LA) -- 67.3% (ND)

Multivariate Results: Treatment

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- Depression/Anxiety: Odds of not receiving treatment higher in 4 states, ID, KY, LA, NV (ref = TN)
- ODD/CD: Odds of not receiving treatment higher in 17 states (ref = PA)
 - ▣ AOR > 10.0 in LA
 - ▣ AOR > 6.0 in OK, NV, MS, IL, FL
- Either: Odds of not receiving treatment higher in 16 states (ref = ND)
 - ▣ Driven by results for children with behavioral conditions

Multivariate Results: Treatment

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- Higher odds of not receiving past-year treatment associated with being uninsured.

- Lower odds of not receiving past-year treatment associated with:
 - ▣ Being NH multiracial;
 - ▣ Having ever been diagnosed with other mental health condition; and
 - ▣ Having a mother in poor mental health.

Limitations

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- ❑ Data based on parent report without clinical validation
- ❑ No information on nature, extent, or setting of mental health treatment or counseling
- ❑ Cross-sectional data
- ❑ Telephone survey

Discussion: Questions of Interest

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1. **What is the prevalence of diagnosed conditions?**

- ▣ 7.8% or 3.8 m school-aged children have been diagnosed with depression/anxiety
- ▣ 5.4% or 2.7m of school-aged children have ever been diagnosed with a behavioral condition like ODD or CD

2. **What percentage of children receive treatment?**

- ▣ 9.9% of 6-17 year olds have received some kind of mental health treatment or counseling in past 12 months, regardless of diagnosis
- ▣ $\approx 50\%$ of children ever diagnosed with an emotional or behavioral condition received treatment or counseling in past 12 months

3. **How do these estimates vary across the nation?**

- ▣ After adjustment, greater state-level variation in the odds of ever being diagnosed with depression/anxiety than ODD/CD
- ▣ State-level variation for not receiving treatment greater for those with ODD/CD than depression or anxiety.

Discussion

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- 1. Estimates have changed since 2003 NSCH:** Prevalence of depression or anxiety increased from 5.4% to 7.8% while prevalence of ODD/CD decreased from 6.3% to 5.4%.
 - Increase in diagnosis of emotional conditions;
 - Increase in the accuracy of diagnosing developmental conditions and behavioral mental health
- 2. State-of-residence associated with diagnosis:**
 - Even after controlling for child and family-level factors, significant state-level differences observed for being diagnosed with depression or anxiety;
 - Suggests that state-level practices/approaches to pediatric mental health may have impact on early identification.

3. State-of-residence associated with treatment:

- Even after controlling for child and family-level factors, significant state-level differences observed for receiving past-year treatment among those with ODD/CD;
- Could reflect children “aging out” of behavioral diagnosis and therefore not needing treatment however patterns are the same for those with current diagnosis.

4. Access to treatment remains a concern for nearly half of all children ever diagnosed and 40% of those with a current diagnosis:

- More information is needed about what parents consider to be treatment as well as the nature, extent, and setting of treatment received.

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Questions and Feedback

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