

Nationally Representative and State-Level Prevalence Estimates of Parent-Reported Speech or Language Disorder Diagnosis and Co-Morbidities among Children aged 0–17 years, 2016–18

Sana N. Charania, MPH¹; Suhana Ema, MPH¹; Rebecca H. Bitsko, PHD¹; Melissa L. Danielson, MSPH¹; Juliet K. Haarbauer-Krupa, PhD, FACRM²

¹ Division of Human Development and Disability, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, Atlanta, GA ² Division of Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, GA

Background

Speech or Language Disorders (SLDs) are characterized by difficulty with speech sounds or fluency, or the acquisition or use of language that impacts communication.

SLDs are common among children who are deaf or hard of hearing.

SLDs may be present with other mental, behavioral, or developmental disorders (MBDDs) and the combination of these disorders may impact diagnosis and treatment.

Objectives:

1. To estimate the state-level prevalence of parent-reported SLD and co-morbidities among U.S. children.
2. To provide nationally representative demographic comparisons of children with SLD

Methods

Data Source

Pooled data from the 2016-18 National Survey of Children’s Health (NSCH)

- Nationally representative sample
- Web-based or mail-out/mail-back paper questionnaire
- Complex sampling design

Study Design

Parents reported on:

- SLD diagnosis (ever and current)
- Co-occurring disorders: anxiety problems, attention-deficit/hyperactivity disorder (ADHD), autism spectrum disorder, behavioral or conduct problems, brain injury, cerebral palsy, depression, developmental delay, Down syndrome, intellectual disability, learning disability, Tourette syndrome

Analyses

Complete data available for 102,008 children aged 0-17 years.

- Overall weighted prevalence for SLD diagnosis, co-morbidities, and demographic characteristics
 - prevalence estimates with Clopper-Pearson 95% confidence intervals (CI) and prevalence ratios with Wald 95% CI were calculated for all estimates
 - weighted population level estimates, ranges, medians and interquartile ranges (IQRs) for state-level estimates.

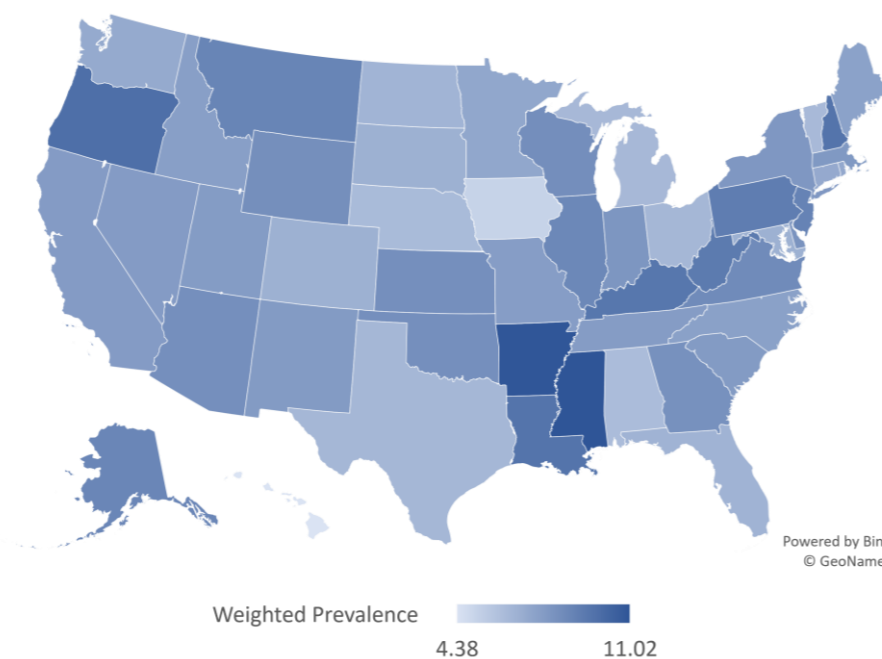
Analyses were conducted in SAS-callable SUDAAN v11.0.1 (RTI International; Cary, NC

Results

Table 1. Prevalence of Ever Receiving a Diagnosis of Speech or Language Disorder (SLD) among Children Aged 0-17 Years, by Selected Demographic Characteristics

Variable	Unweighted Sample	Weighted % with SLD (95% CI)	Prevalence Ratio (95% CI)
Total Surveyed	102,008	7.7 (7.3, 8.1)	-
Age (years)			
0-5 years	29,138	7.0 (6.3, 7.7)	1.13 (0.99, 1.28)
6-11 years	30,811	9.8 (9.0, 10.6)	1.59 (1.41, 1.78)
12-17 years	42,059	6.2 (5.7, 6.7)	Referent
Sex			
Male	52,596	10.1 (9.5, 10.8)	Referent
Female	49,412	5.1 (4.7, 5.6)	0.50 (0.45, 0.56)
Race/Ethnicity			
Non-Hispanic White	71,092	7.7 (7.3, 8.0)	Referent
Non-Hispanic Black	6,171	8.1 (7.0, 9.4)	1.06 (0.91, 1.24)
Non-Hispanic Asian	5,207	4.3 (3.4, 5.4)	0.57 (0.45, 0.71)
Non-Hispanic Other	7,961	6.6 (5.7, 7.6)	0.86 (0.74, 1.00)
Hispanic	11,577	8.3 (7.2, 9.6)	1.09 (0.94, 1.26)
Highest Level of Parent Education			
High school diploma or less	15,082	7.8 (6.9, 8.9)	Referent
At least some college or technical school	85,739	7.6 (7.3, 8.0)	0.98 (0.85, 1.12)
Federal Poverty Level (FPL)			
<200%	14,651	8.6 (7.6, 9.7)	1.18 (1.02, 1.36)
≥200%	37,321	7.3 (6.8, 7.8)	Referent

Figure 1. Weighted Prevalence Estimates of Parent-Reported SLD Diagnosis by a Health Care Provider among Children Aged 0–17 Years by State

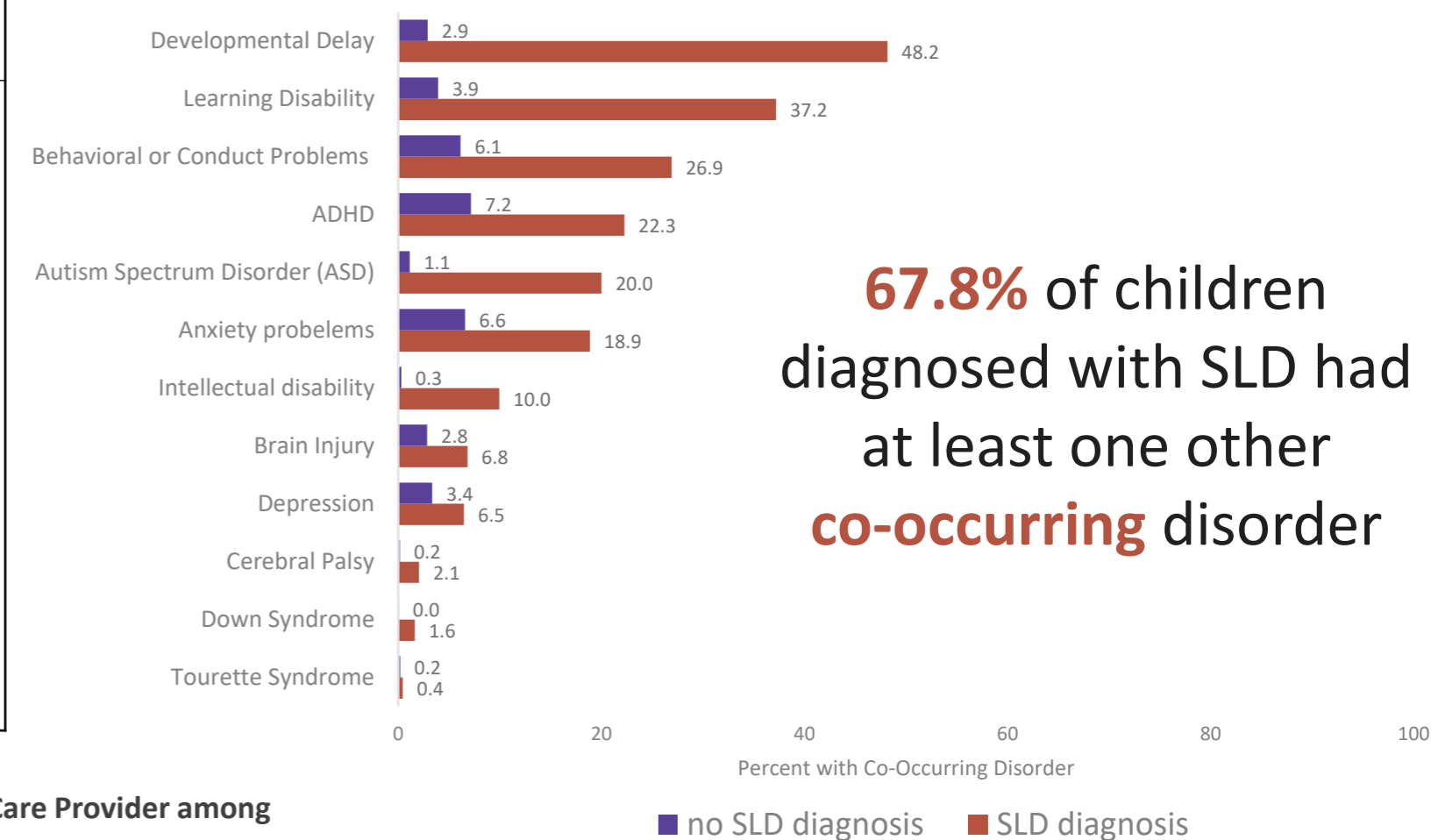


The three states with the **lowest** estimated percentages were below 6.5% (Alabama, Hawaii, and Iowa).

The three states with the **highest** estimated percentages were above 9.5% (Arkansas, Mississippi, and Oregon).

State-level estimates ranged from 4.4%–11.0% (median:7.7; IQR: 6.9, 8.4).

Figure 2. Weighted Prevalence of Parent-Reported Co-Occurring Conditions among Children Ever Diagnosed with SLD vs. those without an SLD Diagnosis



67.8% of children diagnosed with SLD had at least one other co-occurring disorder

Conclusions

State-level estimates indicate some geographic variation in the prevalence of parent-reported SLD diagnosis.

High prevalence of co-occurring disorders among children with SLD indicate the importance of considering these disorders in SLD research or programs.

Contact Info

Sana Charania, NCBDDD
YJE9@cdc.gov

