Frequency of medication treatment, behavioral therapy, and dietary supplements among a national sample of children with special health care needs and ADHD

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Division of Human Development and Disabilities

Learning Objectives

- Describe the relative national rates of treatment for ADHD with medication, behavioral therapy, and dietary supplements among a national sample of children with special health care needs.
- Identify two factors that are associated with receipt of behavioral therapy for ADHD among children with special health care needs.
- Report the percentage of American children with special health care needs who have ADHD and are receiving both ADHD medication and behavioral therapy treatment.

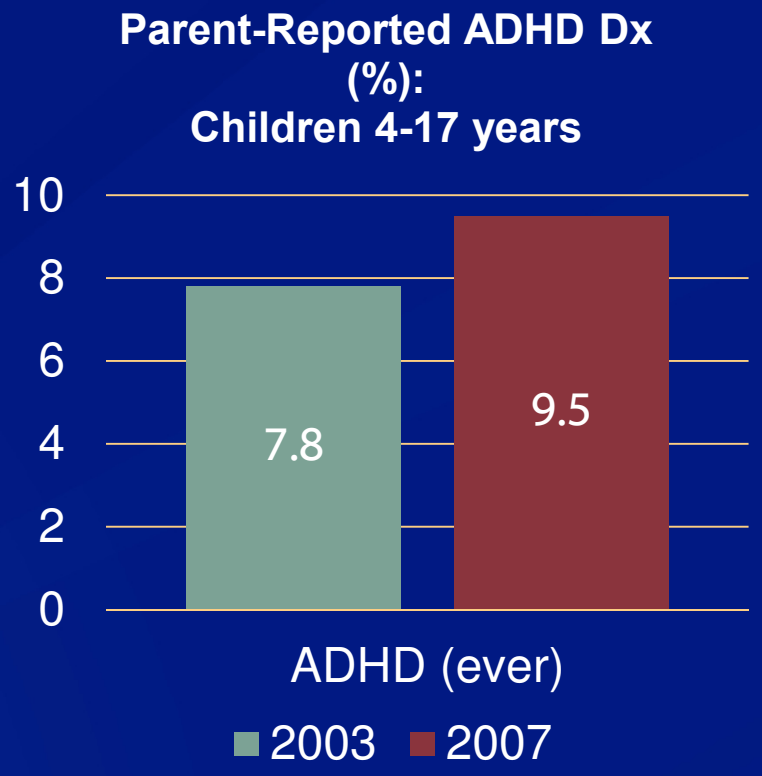
National Rates of Parent-reported ADHD and ADHD Medication Tx

BACKGROUND

Parent-reported ADHD Diagnosis (2003-2007)

Children aged 4-17 years

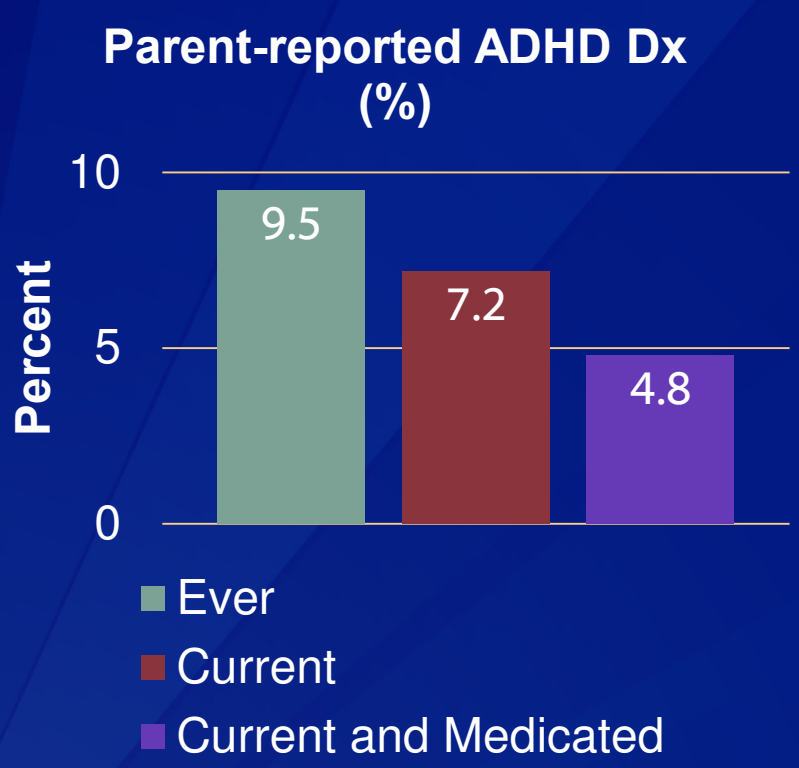
- **% children with a parent-reported ADHD diagnosis increased by 22% from 2003 to 2007**
  - An increase from 4.4 million to 5.4 million children
    - One million more children with a history of an ADHD diagnosis

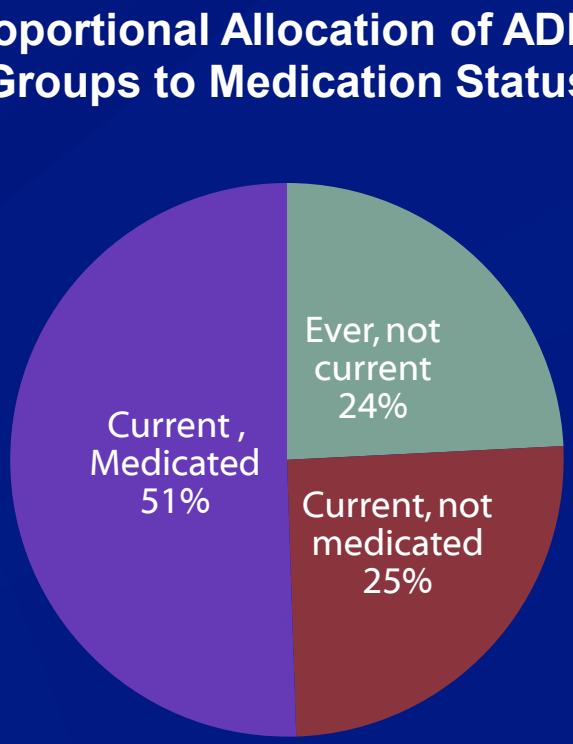


Centers for Disease Control and Prevention. Increasing Prevalence of Parent-reported Attention-Deficit/Hyperactivity Disorder among Children: United States, 2003-2007. *MMWR* 2010; 59 (44): 1439-1443.

Rates of Parent-reported ADHD Diagnosis (4-17 years)

Ever, current, medicated in 2007

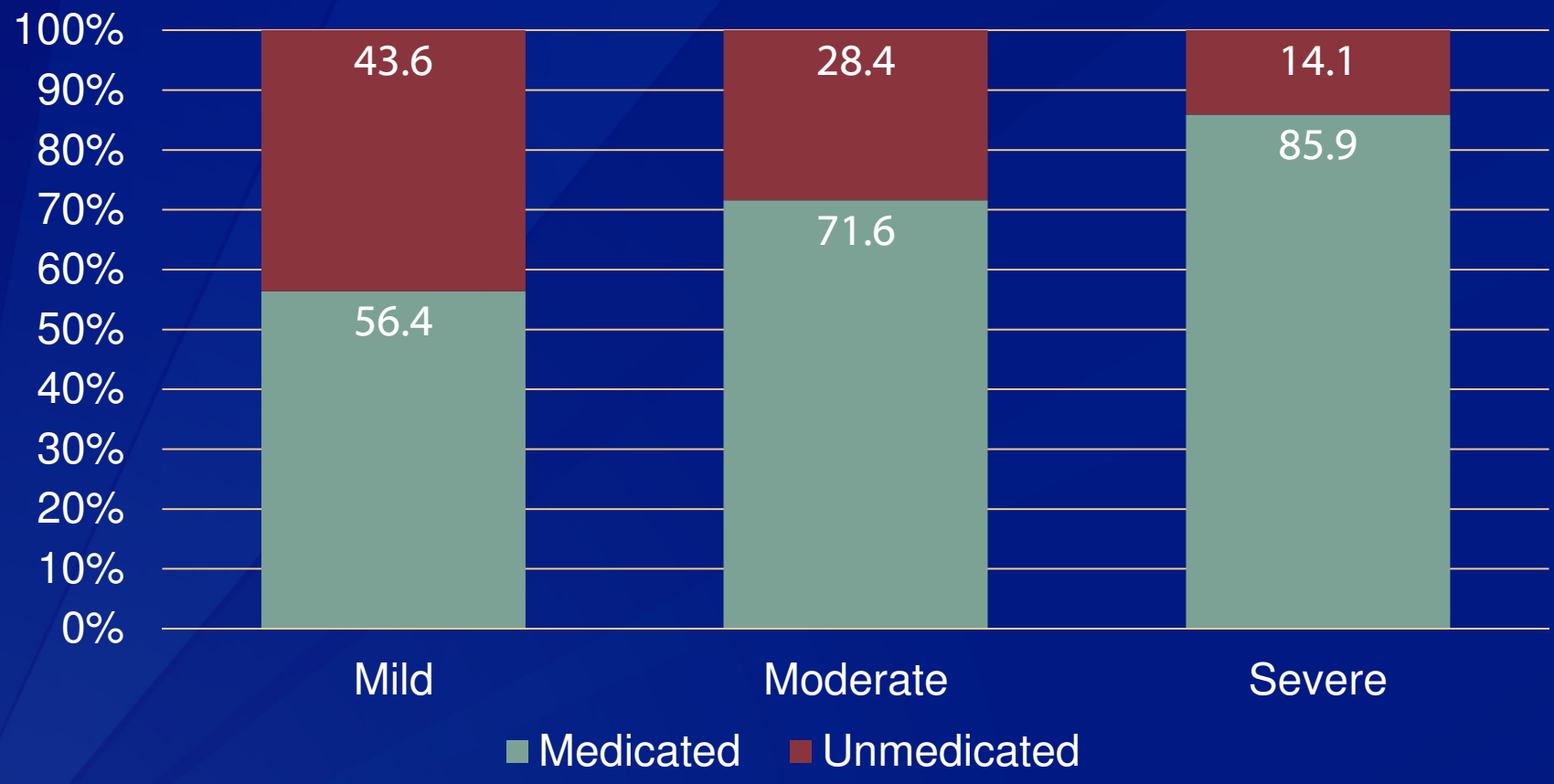




9.5% = 5.4 million children 7.2% = 4.1 million children 4.8% = 2.7 million children

Centers for Disease Control and Prevention. Increasing Prevalence of Parent-reported Attention-Deficit/Hyperactivity Disorder among Children: United States, 2003-2007. *MMWR* 2010; 59 (44): 1439-1443.

% of Children (4-17 years) with Current ADHD, taking ADHD Medication by Parent-Reported ADHD Severity



Centers for Disease Control and Prevention. Increasing Prevalence of Parent-reported Attention-Deficit/Hyperactivity Disorder among Children: United States, 2003-2007. *MMWR* 2010; 59 (44): 1439-1443.

ADHD Treatment

- **Explosion of pharmacological treatments for ADHD**
- **ADHD treatment guidelines exist**
  - American Academy of Child and Adolescent Psychiatry –2007
  - American Academy of Pediatrics –2011
    - Age-specific recommendations
      - Evidence-based behavioral therapy first for preschoolers
      - Medication and behavioral therapy for older children
  - Agency for Health Research Quality (AHRQ) comparative effectiveness for ADHD treatment among preschoolers
- **Multi-modal treatment can improve family functioning, in particular**
- **Inconsistent availability of evidence-based behavioral therapies**
- **Lack of evidence for the use of dietary supplements for the treatment of ADHD**

Rationale and Study Goals

- In 2007-2008 (National Survey of Children's Health)
  - Two-thirds of the 4.1 million children with current ADHD (nearly 1 in 20, nationally) were taking ADHD medication
  - 94% of children with ADHD met criteria for CSHCN
- National estimates for non-pharmacological ADHD treatments have not been reported in the last decade
- Study Goals
  - Estimate national rates of ADHD medication, behavioral therapy, and dietary supplement therapies for ADHD among national sample of CSHCN
  - Evaluate alignment of 2009-2010 rates against AAP's 2011 treatment recommendations

Data Source, Sample, and Statistical Approach

METHOD

National Survey of Children with Special Healthcare Needs (NS-CSHCN)

- **Directed by the Maternal and Child Health Bureau, Health Resources and Services Administration**
- **Conducted by CDC through State and Local Area Integrated Telephone Survey (SLAITS)**
  - Random-digit dialed survey; NIS sampling frame
- **Administered three times to date**
  - 2001
  - 2005-2006
  - **2009-2010 – Used in this analysis**
- **Survey goal: to assess the prevalence and impact of special health care needs among children in the US**
- **~40,000 surveys conducted per administration**

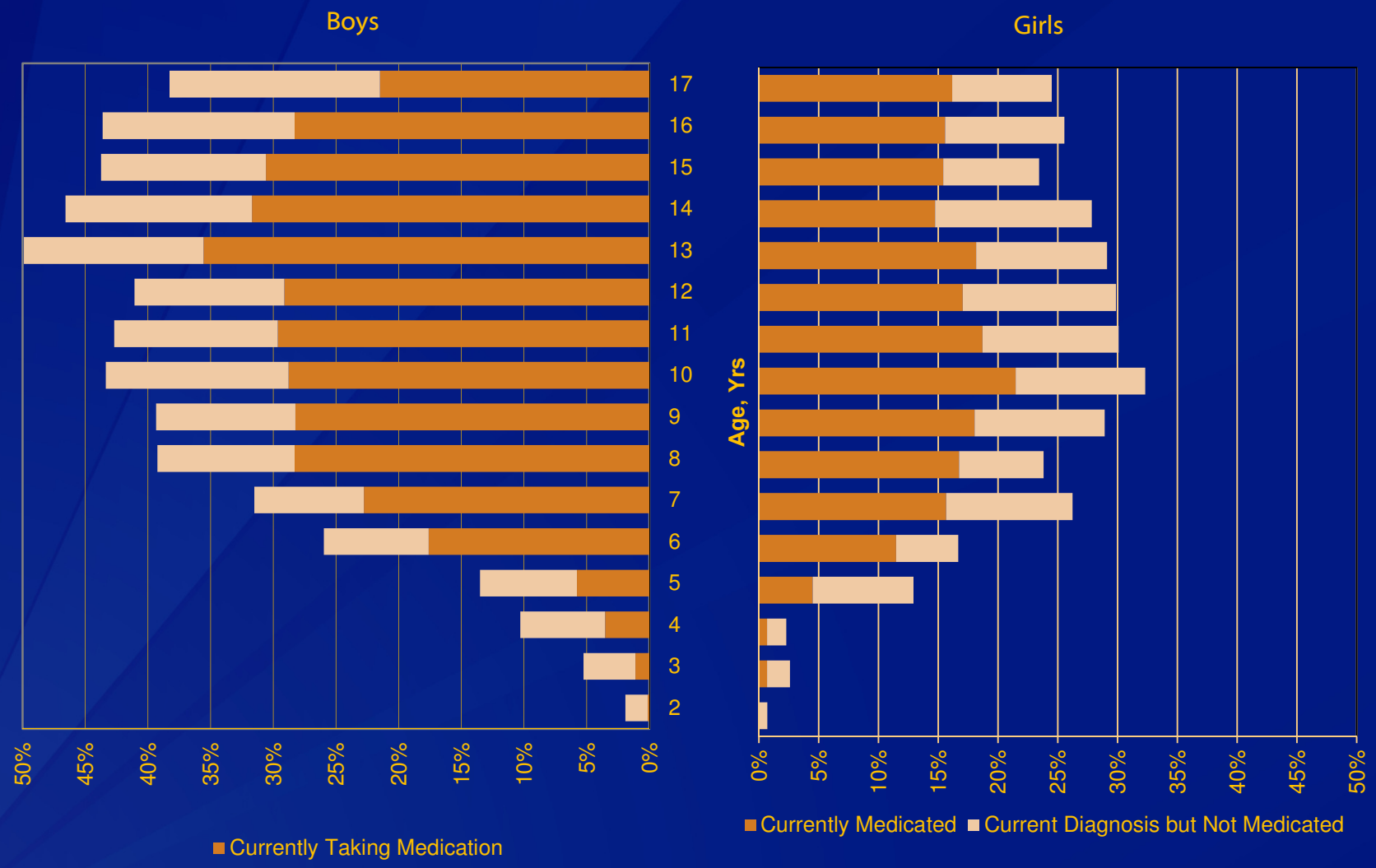
http://www.cdc.gov/nchs/slaits/cshcn.htm

Statistical Approach

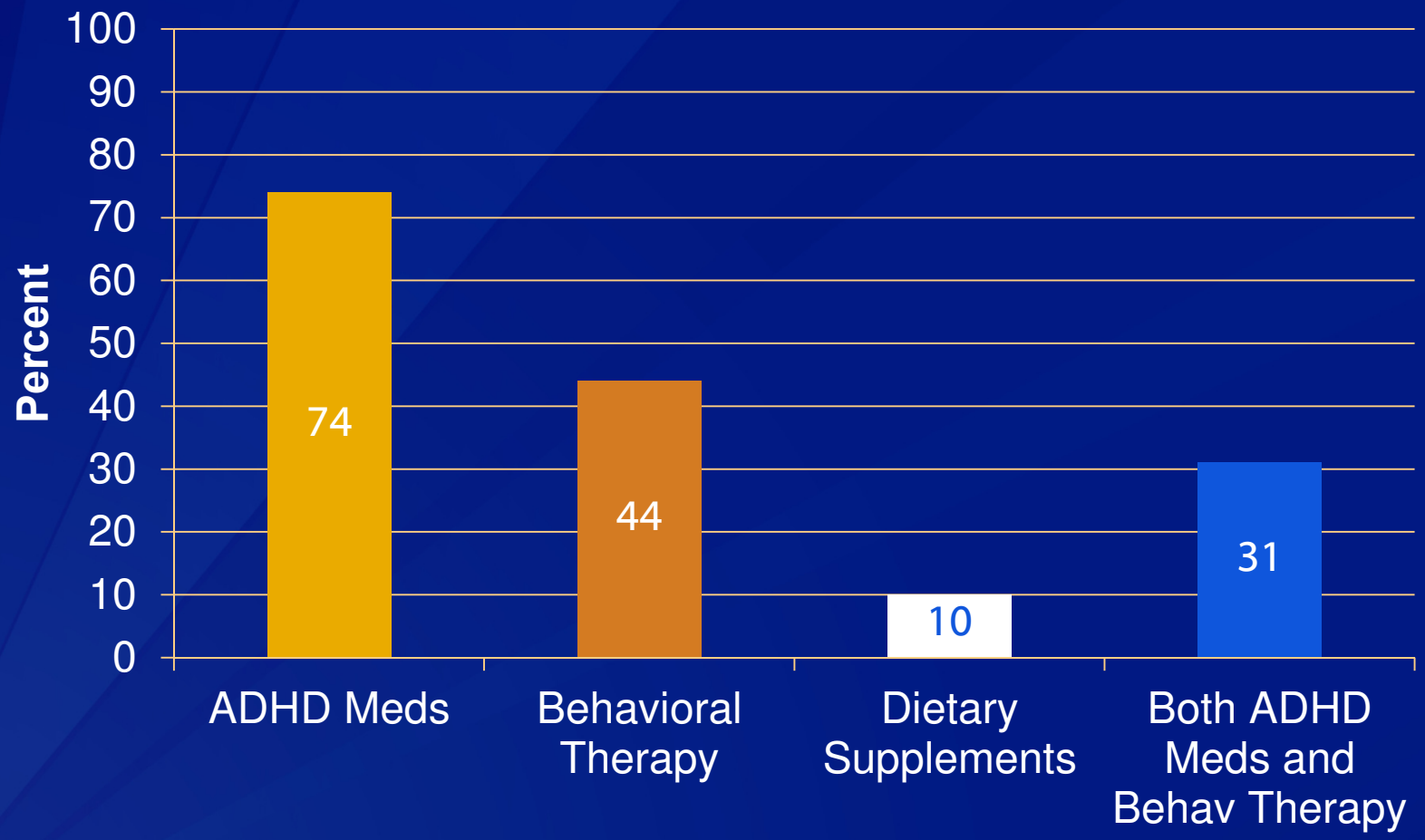
- **Data from the 2009-2010 National Survey of Children with Special Health Care Needs**
- **9,537 children 4-17 years of age with current ADHD and treatment responses**
- **Weighted (SUDAAN 10.0) estimation of:**
  - Current ADHD medication
  - Past year behavioral therapy
  - Current use of dietary supplements
- **Chi-square tests to test for differences in treatment rates by:**
  - Demographics (age, race, insurance status, geography)
  - ADHD severity
  - Mental health comorbidity (depression, ODD, anxiety, autism, developmental disability, intellectual disability)
- **Evaluation of treatment patterns against new age-specific guidelines from AAP**

RESULTS

Rates (%) of ADHD among CSHCN, by age

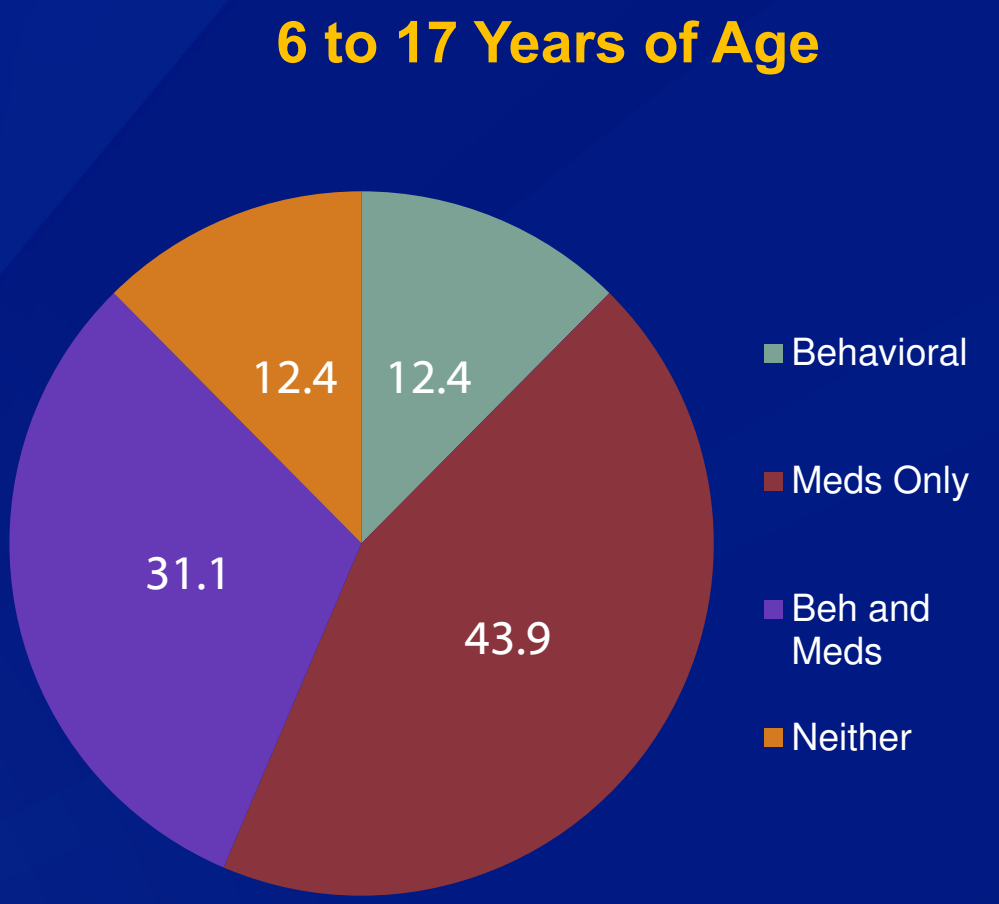


Rates (%) of ADHD Treatments among CSHCN with ADHD



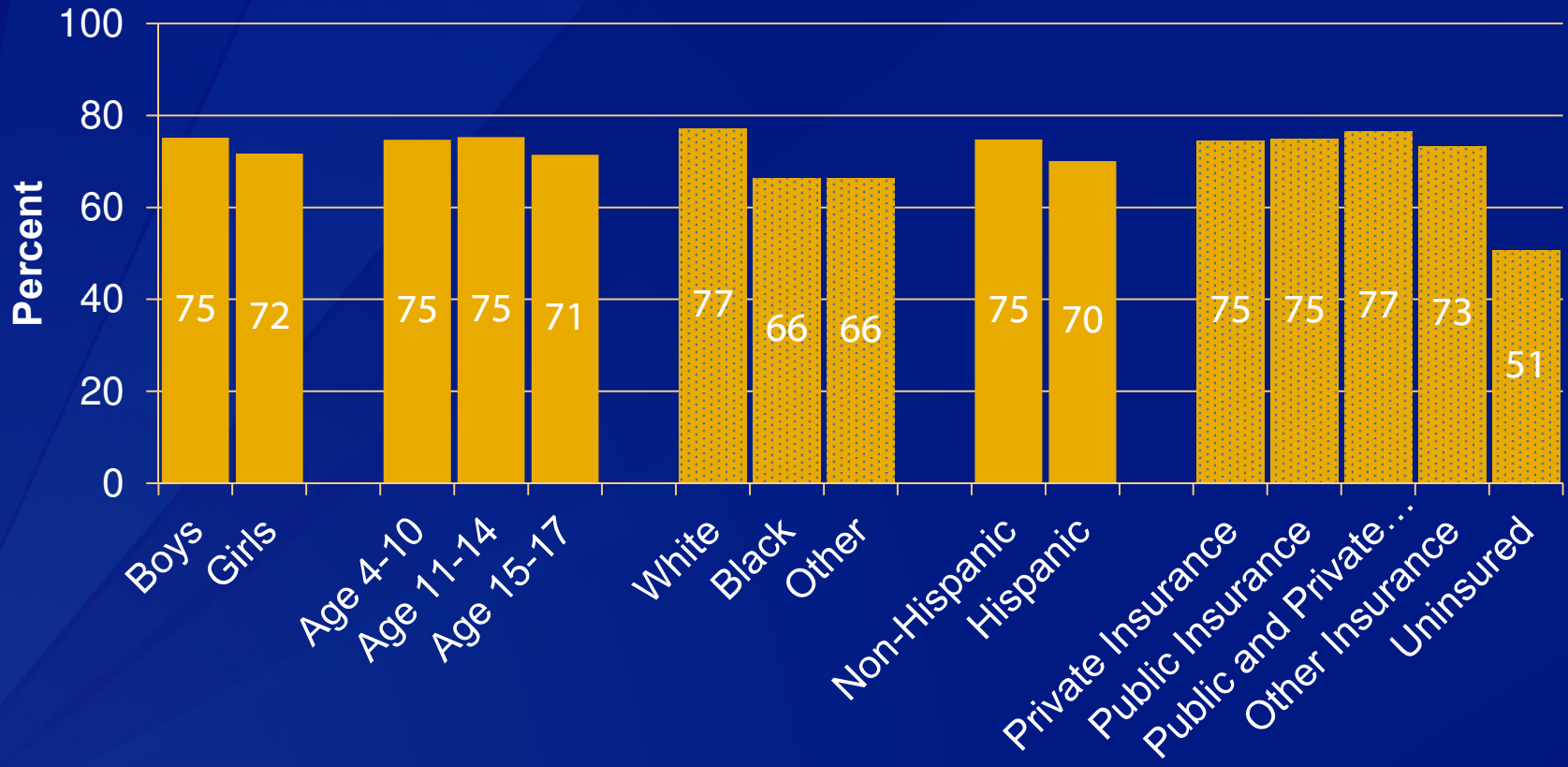
Proportional Distribution of ADHD Medication and Behavioral Treatments

- 88% of CSHCN with ADHD were treated with either ADHD medications or behavioral therapy
- 31% were engaged with multimodal treatment



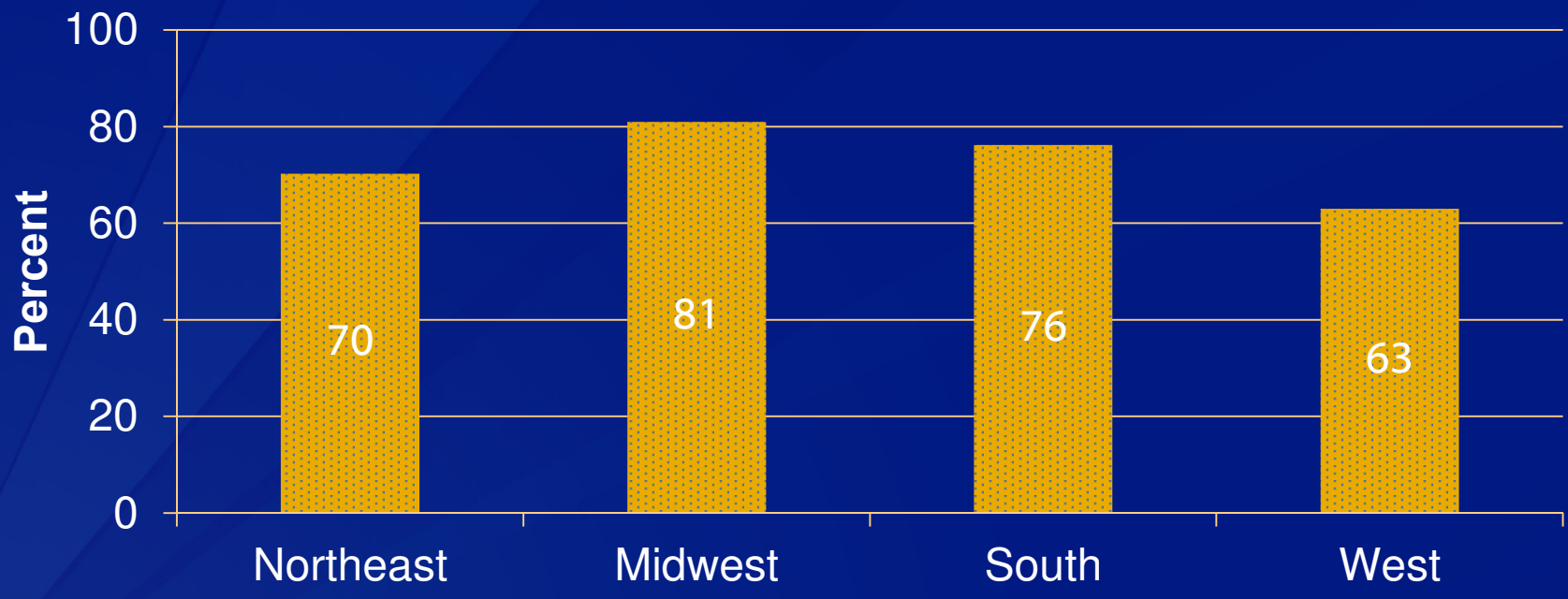
Rates (%) of ADHD Medication Treatment

- Significant differences for race; significantly higher among Whites
- Significantly higher among children with insurance
- Statistical trend for gender; higher rates of medication among boys



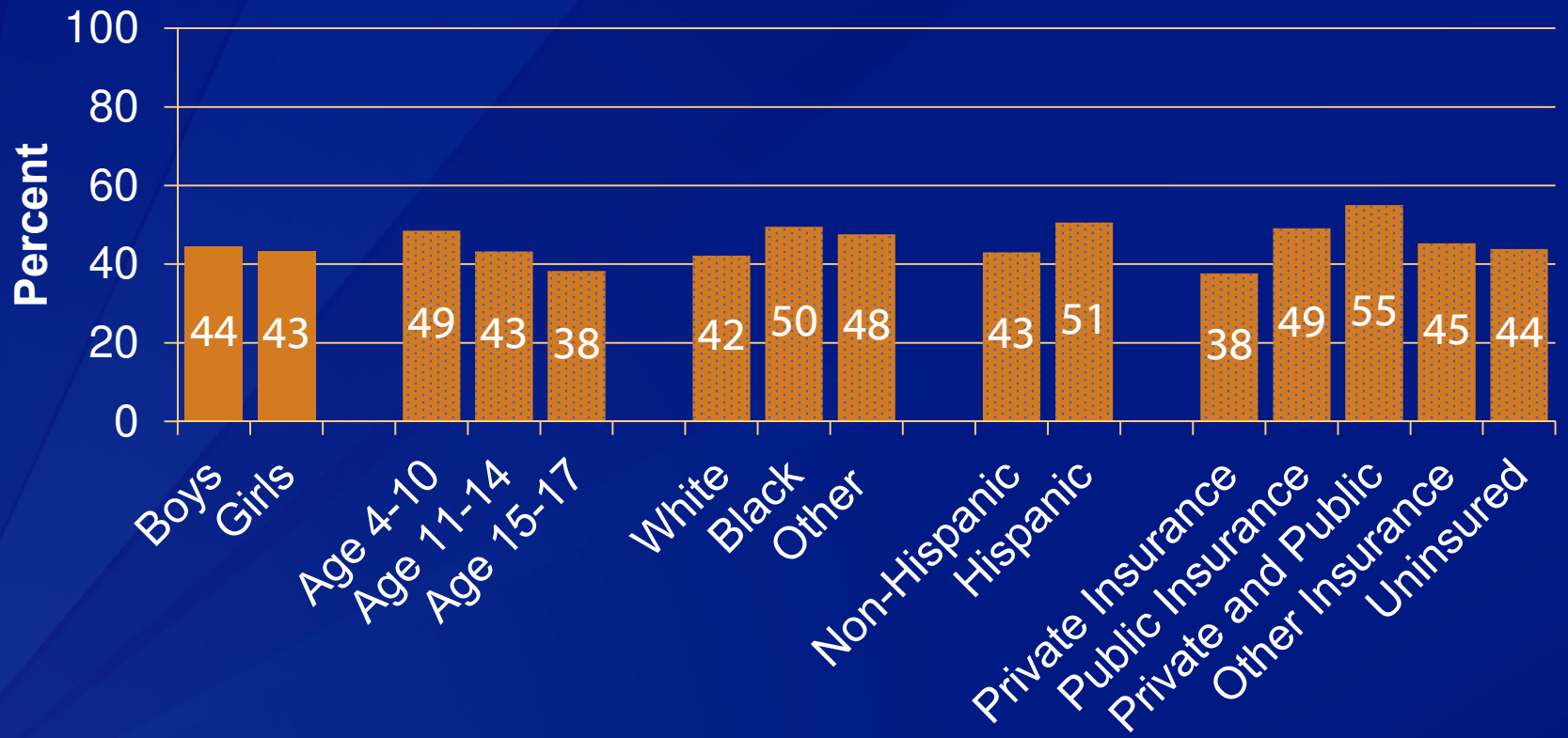
Rates (%) of ADHD Medication Treatment
Region of US

- Rates of medication treatment for ADHD was highest among states in the Midwest



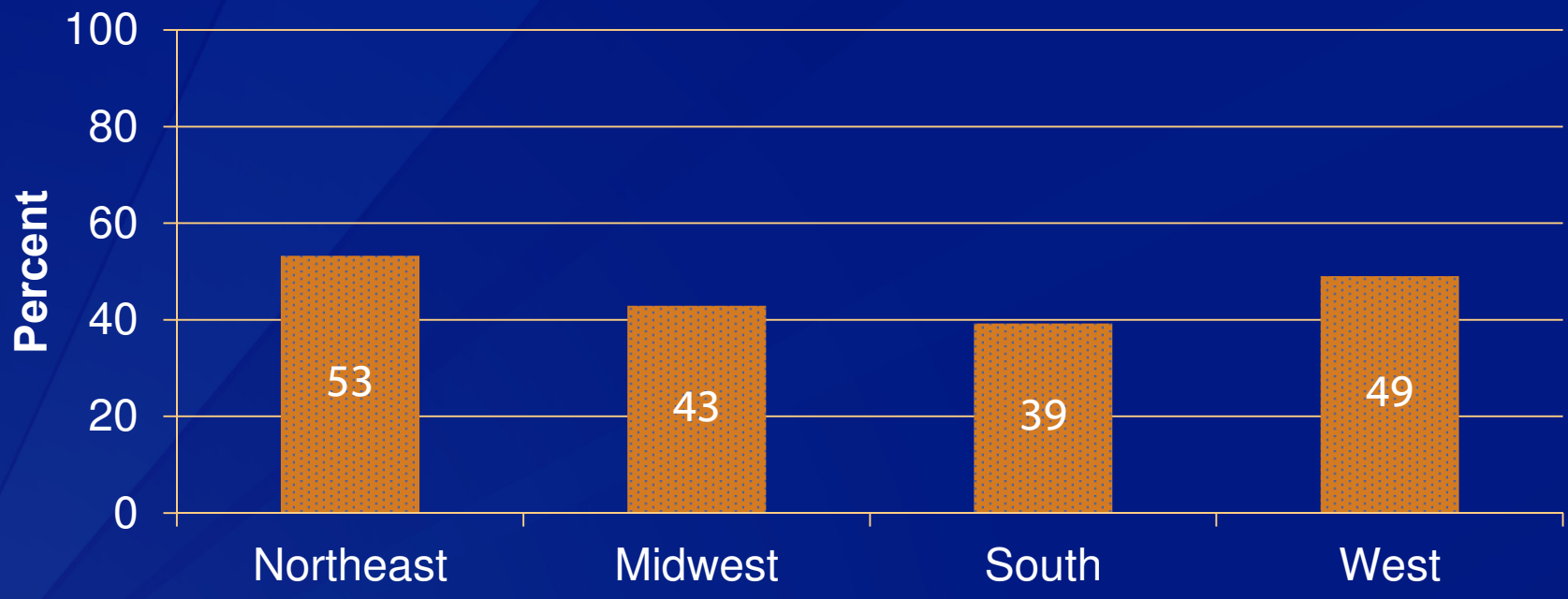
Rates (%) of Behavioral Therapy for ADHD

- Behavioral therapy for ADHD was associated with younger age, Black race, Hispanic ethnicity, and public (with or without private) insurance



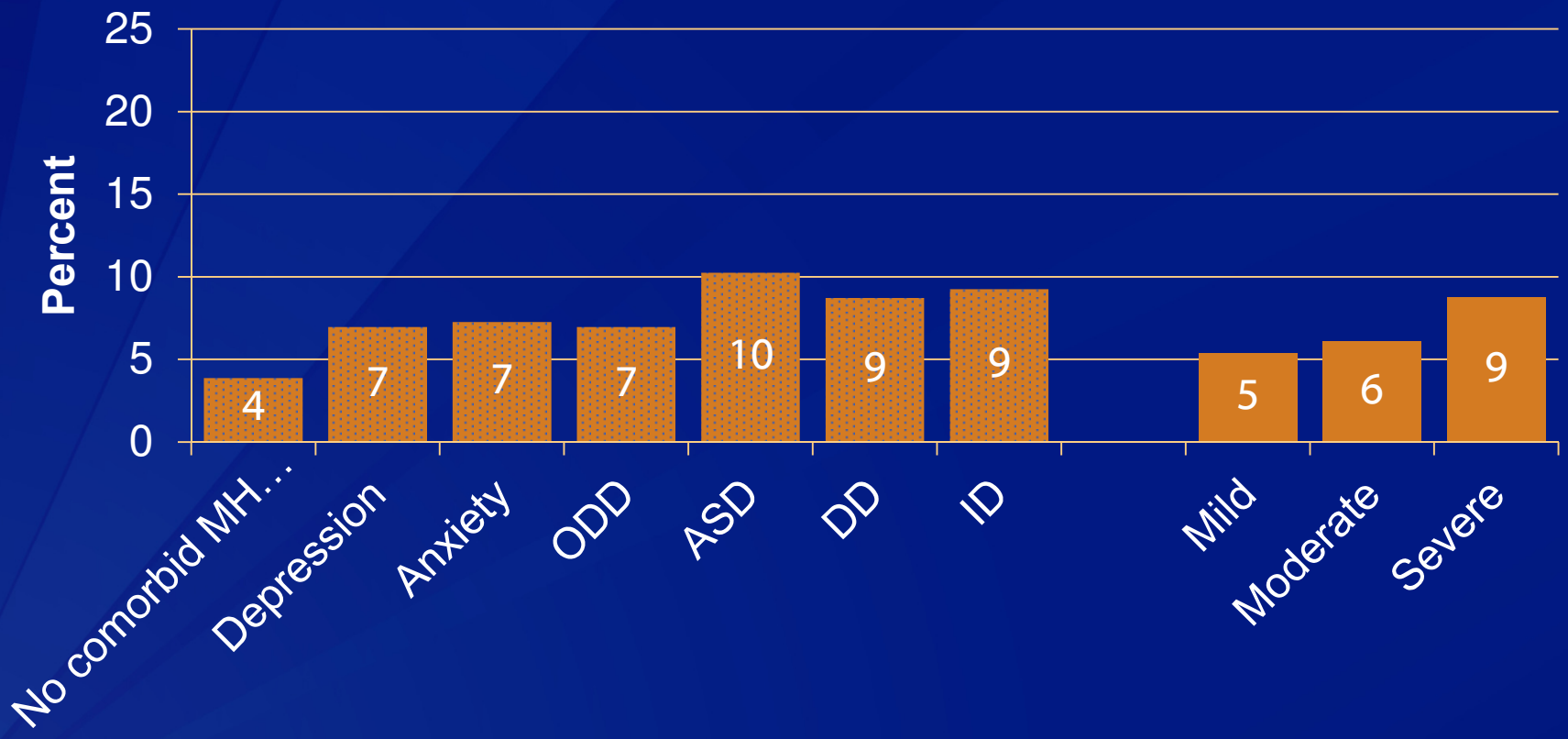
Rates (%) of Behavioral Therapy for ADHD
Region of US

- Rates of Behavioral Therapy for ADHD were highest among states in the Northeast



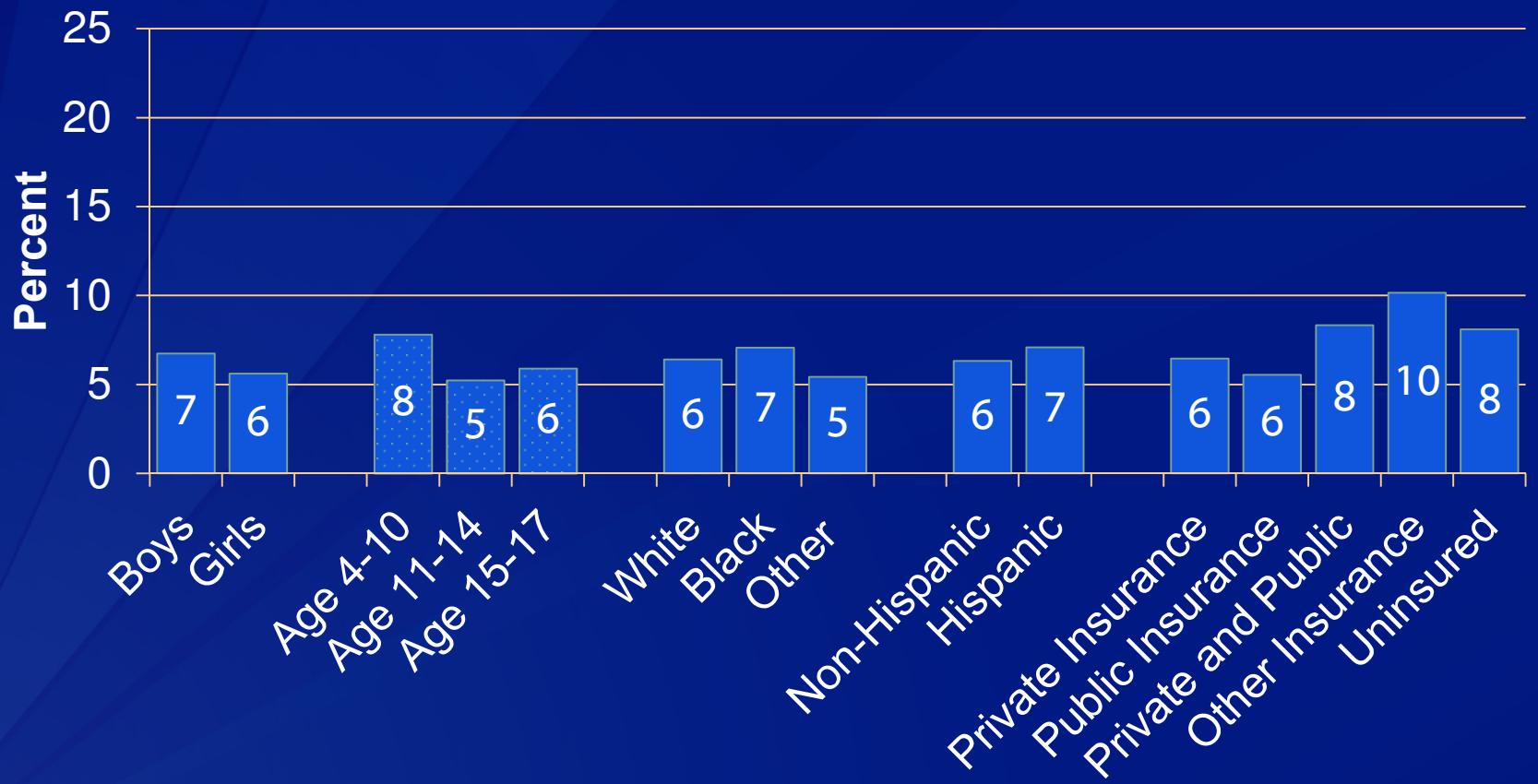
Rates (%) of Behavioral Therapy for ADHD

- Behavioral therapy for ADHD was associated with having co-occurring mental health disorders and ADHD severity



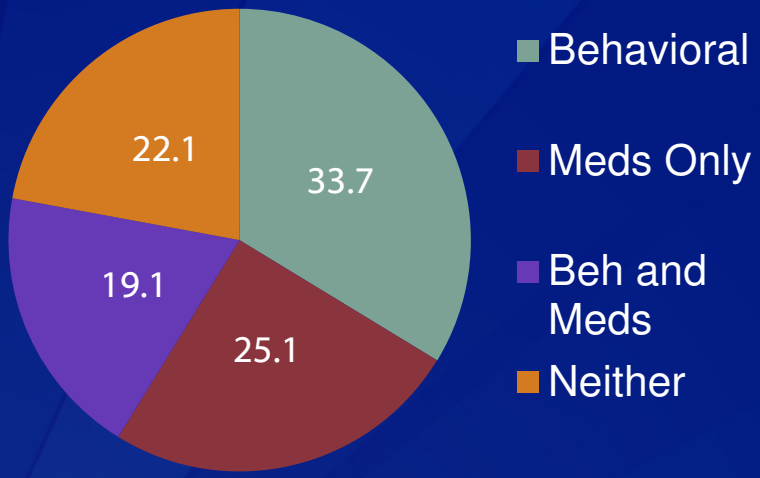
Rates (%) of Dietary Supplements for ADHD

- Dietary supplements for ADHD treatment was associated with younger age

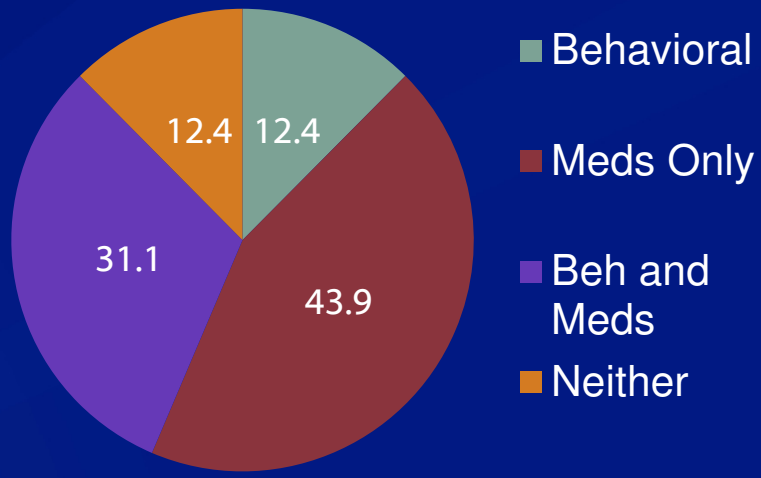


ADHD Treatment Modality, by Age Group

2 to 5 years



6 to 17 years



Discussion

- **Many factors impact treatment choices**
  - Family preference
    - Culture/race[1, 2]
  - Practitioner preference
    - For example, pediatricians vs. psychiatrists
    - Shared decision making[3]
  - Accessibility of ADHD medication
    - Insurance and geography[1]
    - Medication shortages[4]
  - Availability of high-quality (AHRQ) behavioral Tx is limited
    - PCIT
    - Triple P
    - New Forest Programme – UK
    - Incredible Years
  - Co-located staff capable of administering behavioral therapy

1. Stevens J, Harman JS, Kelleher KJ. Ethnic and regional differences in primary care visits for Attention-Deficit Hyperactivity Disorder. *Journal of Developmental & Behavioral Pediatrics* 2004; **25**:318-325.
2. Hillemeier MM, Foster EM, Heinrichs B, Heier B. Racial differences in parental reports of attention-deficit/hyperactivity disorder behaviors. *J Dev Behav Pediatr* 2007; **28**:353-61.
2. Fiks AG, Hughes CC, Gafen A, Guevara JP, Barg FK. Contrasting parents' and pediatricians' perspectives on shared decision-making in ADHD. *Pediatrics*; **127**:e188-96.
3. Food and Drug Administration. FDA Works to Lessen Drug Shortage Impact. June 2011. Accessed online October 22, 2012. http://www.fda.gov/downloads/ForConsumers/ConsumerUpdates/UCM258173.pdf

Conclusions

ADHD Treatment among CSHCN with ADHD

- Demographic factors, ADHD severity, and comorbidities were consistently associated with ADHD treatment type
- Medication was the most common ADHD treatment for school-aged CSHCN; ¾ were taking ADHD medications
- Multimodal treatment for ADHD (medication and behavioral therapy), reported by less than one-third
- These data represent an important benchmark for the new age-specific AAP guidelines for ADHD
  - 44% of preschoolers with ADHD were taking ADHD medications
- Availability of treatments and shared decision making may influence ADHD treatment choice

Thank you!

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