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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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
% 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

Rates of Parent-reported ADHD Diagnosis (4-17 years)
Ever, current, medicated in 2007

Parent-reported ADHD Dx (%)

Percent

Proportional Allocation of ADHD Groups to Medication Status

<table>
<thead>
<tr>
<th>Status</th>
<th>Percentage</th>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever, not current</td>
<td>24%</td>
<td>2.4 million</td>
</tr>
<tr>
<td>Current, not medicated</td>
<td>25%</td>
<td>2.1 million</td>
</tr>
<tr>
<td>Current, Medicated</td>
<td>51%</td>
<td>3.7 million</td>
</tr>
</tbody>
</table>

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

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

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
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

Boys

Girls

Age, Yrs

Currently Taking Medication

Currently Medicated  |  Current Diagnosis but Not Medicated
Rates (%) of ADHD Treatments among CSHCN with ADHD

- ADHD Meds: 74%
- Behavioral Therapy: 44%
- Dietary Supplements: 10%
- Both ADHD Meds and Behavioral Therapy: 31%
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.
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
- Behavioral: 33.7%
- Meds Only: 22.1%
- Beh and Meds: 19.1%
- Neither: 25.1%

6 to 17 years
- Behavioral: 31.1%
- Meds Only: 43.9%
- Beh and Meds: 12.4%
- Neither: 12.4%
Discussion

- Many factors impact treatment choices
  - Family preference
    - Culture/race
  - Practitioner preference
    - For example, pediatricians vs. psychiatrists
    - Shared decision making
  - Accessibility of ADHD medication
    - Insurance and geography
    - Medication shortages
  - 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

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; \( \frac{3}{4} \) 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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