Facilitators and Barriers to Twice Daily Tooth brushing among Children with Special Health Care Needs

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Children with Special Health Care Needs (CSHCN)

- Approximately 15% of US children and youth meet definition for CSHCN.
  - CSHCN are a growing segment of US population.

Oral Health

- CSHCN are at elevated risk for poor oral health.
- Oral health is connected to overall health.
- #1 health care need in CSHCN is dental services.
- Twice daily tooth brushing is effective at preventing dental caries.
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Goals of Study

• Examine tooth brushing among pre-school CSHCN  
  -Similar to typically-developing children?
• Describe facilitators and barriers to twice daily tooth brushing in CSHCN  
  -Identify modifiable behaviors or beliefs
Methods
Methods

- Cross-sectional
- Semi-structured interviews
- Caregivers of pre-school (ages 24 to 60 months) CSHCN
- Current enrollees, on the waiting list for, or graduates of an early intervention center
- Non-fluoridated community in Washington State
Key Measures

• Facilitators: “What helps or makes it easier to brush your child’s teeth as often as you’d like?”
• Barriers: “What makes it difficult to brush your child’s teeth as often as you’d like? What gets in the way?”

• Tooth brushing: “About how often are you brushing [your child’s teeth] now?”
Coding of Facilitators and Barriers

• Coding themes from Huebner and Riedy for facilitators and barriers
  - Oral health beliefs
  - Social norms
  - Emotional reactions
  - Self-standards
  - Self-efficacy
  - Tooth brushing skills
  - External factors
Coding of External Factors

• External factors
  - Time pressures
  - The child’s oral aversion
  - The child’s compliance
  - Effects of other siblings
  - Having a variety of tooth brushing supplies
  - The child’s level of fatigue
  - Multiple caregivers
  - Size of the child’s mouth
Key Measures

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Data Analysis

• Descriptive analysis
  - Caregivers
  - Children
  - Professional dental use and home oral hygiene
  - Facilitators and barriers

• Bivariate analysis of identified facilitators and barriers and tooth brushing frequency
  - $X^2$ comparison
Results
Descriptive Statistics

• 90 caregivers
  - 19 to 66 years old, with mean 32 years
  - Most were non-Hispanic white.

• 90 children
  - 23 to 62 months, with mean 37 months
  - Most common conditions included developmental delay, Down Syndrome, and Autism Spectrum Disorders.
## Children’s Professional Dental Service Use (n=90)

<table>
<thead>
<tr>
<th></th>
<th>% (count) or Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental visit (ever)</strong></td>
<td>80 (72)</td>
</tr>
<tr>
<td><strong>Preventive dental visit in past 12 months</strong></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>21 (19)</td>
</tr>
<tr>
<td>1</td>
<td>32 (29)</td>
</tr>
<tr>
<td>2</td>
<td>38 (34)</td>
</tr>
<tr>
<td>3</td>
<td>8 (7)</td>
</tr>
<tr>
<td>4</td>
<td>1 (1)</td>
</tr>
</tbody>
</table>

21% + 32% = 53%
<table>
<thead>
<tr>
<th>Description</th>
<th>% (count) or Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Started brushing (yes)</td>
<td>98 (88)</td>
</tr>
<tr>
<td>Age started (months)</td>
<td>11.95 ± 6.52</td>
</tr>
<tr>
<td>Brushing frequency (if started)</td>
<td></td>
</tr>
<tr>
<td>&lt; 1 time / day</td>
<td>5 (4)</td>
</tr>
<tr>
<td>1-2 times / day</td>
<td>45 (40)</td>
</tr>
<tr>
<td>≥ 2 times / day</td>
<td>50 (44)</td>
</tr>
<tr>
<td>Uses fluoridated tooth paste (if started brushing)</td>
<td>62 (53)</td>
</tr>
</tbody>
</table>

5% + 45% = 50%
Facilitators of Tooth Brushing

• Most commonly reported facilitators
  - External support: 55%
  - Self-efficacy: 33%
  - Skills: 28%

• Associations between reported facilitators and brushing frequency
  - Having a variety of supplies (p = .02)
Barriers to Tooth Brushing

• Most commonly reported barrier
  - External barriers: 90%

• Associations between reported barriers and brushing frequency
  - Skills (p = .02)

• No caregiver described aspects of their child’s special need(s) as a barrier.
Discussion
Discussion

• Similar to typically-developing children?
  - Not exactly...but not too far off

• Modifiable behaviors or beliefs?
  - Certainly, but not unique to this CSHCN
Limitations

• Responses to interview questions
  - May be inaccurate
  - May be based on socially desirable standards

• Convenience sample
  - Limits generalizability
Conclusions

For future interventions: enhance caregivers’ skills in routine tooth brushing

Anticipatory guidance can be provided in already existing avenues
Conclusions

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Acknowledgements

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• Dr. Beth Ellen Davis
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