Calories, Caries and Kids:
Assessing the Attitudes and Actions of Dental Professionals
Toward Childhood Obesity and Sugared Beverages

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Introduction
Childhood Obesity

- Obesity is BMI at or above the 95th percentile for children and teens of the same age and sex
- Overweight is BMI at or above the 85th percentile
Childhood Obesity

- In 2011-2012, 17 percent of children ages 2-18 were obese
- 32 percent were either overweight or obese
- 8 percent of infants and toddlers had high weight for recumbent length
Childhood Obesity

- In 2011-2012, 22 percent of Hispanic children, 20 percent of non-Hispanic black children, and 17 percent of White, non-Hispanic children were found to be obese.
Childhood Obesity

- In 2011-2012, 22 percent of Hispanic children, 20 percent of non-Hispanic black children, and 17 percent of White, non-Hispanic children were found to be obese.

- Children ages 3-5 who are overweight or obese are 5 times more likely to be obese as an adult.
Sugar-Sweetened Beverages and Obesity
Sugar-Sweetened Beverages and Obesity

- SSBs are the single largest category of caloric intake in children ages 2-18
Sugar-Sweetened Beverages and Obesity

- SSBs are the single largest category of caloric intake in children ages 2-18
- Teens ages 14-18 drink an average of 260 calories of added sugars from SSBs a day
Sugar-Sweetened Beverages, Obesity and Caries
Role of Oral Health Care Professionals
Survey Report Topics

- Literature Review
- Research Questions
- Theoretical Framework
- Survey Development
- Methods
- Results and Discussion
- Survey Shortcomings
- Research Directions
Research Questions
Research Questions

1. What are the current behaviors of pediatric dentists regarding information and other interventions about healthy weight and the consumption of SSBs?

2. If they are not currently offering the services, what are their intentions to provide interventions regarding healthy weight and the consumption of SSBs?

3. What are their attitudes toward the two behaviors?

4. What are the perceived factors to discourage the behaviors, or major and minor barriers?

5. What factors would encourage pediatric dentists to provide healthy weight and SSB interventions to parents of child patients?
Theoretical Framework:
Theory of Planned Behavior
Theory of Planned Behavior

Behavioral Attitudes

Subjective Norms

Perceived Behavioral Control

Intention

Behavior
Survey Development and Methods
Top References


Top References


Survey Items: Behaviors

- Are you currently offering childhood obesity information or other healthy weight interventions for patients?
- Always 5, Sometimes 3, Never 1
Survey Items: Intentions

- Are you currently offering childhood obesity information or other healthy weight interventions for patients?
- Always 5, Sometimes 3, Never 1
- Which of the following obesity intervention methods would you consider using?
- Mark all that apply
Survey Items: Behaviors and Intentions

- Weigh children and measure their height
- Calculate and interpret a BMI score for children ages 2 and older
- Provide educational materials on childhood obesity
- Provide parents with a self-administered screening tool for childhood obesity
- Note signs of being overweight or obese in the child’s chart
Survey Items: Behaviors and Intentions

• Talk to parents about observations if a child shows signs of being overweight or obese
• Offer weight-related dietary counseling in my practice
• Offer weight-related motivational interviewing or other behavior-modification programs in my practice
• Refer children identified as overweight or obese to a specialist
• Follow up weight maintenance counseling and other interventions with additional communication, such as phone calls, text messages, or emails
Survey Items: Behavioral Attitudes

- Dentists have a role in helping children achieve a healthy weight because of the importance of weight to general health.
- Strongly agree 5, Neutral 3, Strongly disagree 1
Survey Items: Subjective Norms

- Parents are receptive to obesity counseling in the dental office
- Strongly agree 5, Neutral 3, Strongly disagree 1
Survey Items: Perceived Behavioral Control

• Below are potential barriers to offering information or other services about obesity and weight management to parents of child patients. Please indicate the degree to which you perceive each as a barrier to offering this service in your practice.

• Major Barrier 5, Minor barrier 3, Not a barrier 1
Methods

- Pediatric Dentist Survey
- 1,615 responses or 22 percent of the sample
Methods

- Pediatric Dentist Survey
  - 1,615 responses or 22 percent of the sample
- Dental Hygienist Survey
  - 2,361 responses or 7 percent of the sample
Results and Discussion
Respondent Demographics

- Gender representative
- Sole proprietors in suburban private practice
- Younger and more likely to be employees
Behaviors and Intentions: Obesity

- 17 percent currently offer childhood obesity interventions
- 67 percent interested in establishing a plan
Behaviors and Intentions: Obesity

- 17 percent of pediatric dentists currently offer childhood obesity interventions
- 8 percent of dental hygienists offer childhood obesity interventions
- 67 percent of pediatric dentists interested in establishing a plan
- 50 percent of dental hygienists interested in establishing a plan
Behaviors and Intentions: Obesity

- 17 percent of pediatric dentists currently offer childhood obesity interventions
- Curran et al: 3 percent of GPs and 6 percent of PDs provide obesity interventions
- Braithwaite et al: 7 percent of PDs feel comfortable discussing weight issues
- Bell et al: 80 percent of DHs said BMI isn’t discussed in dental visits
- 67 percent of pediatric dentists interested in establishing a plan
- Curran et al: 50 percent interested
### Behaviors and Intentions: Obesity

Obesity intervention methods currently performed. (Rating Average for Always 5, Sometimes 3, Never 1)

If not performed, would considered using. Mark all that apply. (Response Percent)

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Rating Average</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note signs of being overweight or obese in the child’s chart</td>
<td>4.10</td>
<td>74%</td>
</tr>
<tr>
<td>Weigh children and measure their height</td>
<td>3.71</td>
<td>72%</td>
</tr>
<tr>
<td>Talk to parents about observations if a child shows signs of being overweight or obese</td>
<td>3.64</td>
<td>54%</td>
</tr>
<tr>
<td>Provide educational materials on childhood obesity</td>
<td>2.92</td>
<td>77%</td>
</tr>
<tr>
<td>Offer a referral for children identified as overweight or obese</td>
<td>2.85</td>
<td>70%</td>
</tr>
<tr>
<td>Calculate and interpret a Body Mass Index (BMI) score for children ages 2 and older</td>
<td>2.75</td>
<td>61%</td>
</tr>
<tr>
<td>Offer weight-related motivational interviewing or other behavior-modification programs in my practice</td>
<td>2.72</td>
<td>31%</td>
</tr>
<tr>
<td>Follow up on interventions with additional contact</td>
<td>1.81</td>
<td>19%</td>
</tr>
<tr>
<td>Provide parents with a self-administered screening tool for childhood obesity</td>
<td>1.61</td>
<td>58%</td>
</tr>
</tbody>
</table>
Behaviors and Intentions: SSBs

- 94 percent of pediatric dentists currently offer interventions on SSBs
- 93 percent interested in establishing a plan
- 86 percent of dental hygienists currently offer interventions on SSBs
Behaviors and Intentions: SSBs

- 94 percent of pediatric dentists currently offer interventions on SSBs
- Lee et al: 70 percent of PDs offer caries-related dietary counseling
- Braithwaite et al: 24 percent of PDs offer nutritional counseling
- Sim et al: 70 percent of PDs ask about frequency of juice consumption
- Bell et al: 50 percent of DHs offer nutritional counseling to (adult) patients
- 93 percent of pediatric dentists interested in establishing a plan
## Behaviors and Intentions: SSBs

<table>
<thead>
<tr>
<th>Intervention methods for SSBs currently performed (Rating Average for Always 5, Sometimes 3, Never 1)</th>
<th>Rating Average</th>
<th>Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>If not performed, would considered using. Mark all that apply. (Response Percent)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Answer Options</strong></td>
<td><strong>Rating Average</strong></td>
<td><strong>Response Percent</strong></td>
</tr>
<tr>
<td>Talk to parents about my observations if a child shows signs of high risk for caries</td>
<td>4.86</td>
<td>93%</td>
</tr>
<tr>
<td>Note signs of high caries risk in the child’s chart</td>
<td>4.80</td>
<td>92%</td>
</tr>
<tr>
<td>Provide educational materials on sugar-sweetened beverages</td>
<td>3.78</td>
<td>94%</td>
</tr>
<tr>
<td>Offer motivational interviewing or other behavior-modification programs about the consumption of sugar-sweetened beverages</td>
<td>3.59</td>
<td>59%</td>
</tr>
<tr>
<td>Provide parents with a self-administered screening tool for consumption of sugar-sweetened beverages</td>
<td>2.09</td>
<td>72%</td>
</tr>
<tr>
<td>Offer a referral to a dietitian or nutritionist for children who have high consumption of sugar-sweetened beverages</td>
<td>1.55</td>
<td>58%</td>
</tr>
<tr>
<td>Follow up on interventions with additional contact</td>
<td>1.42</td>
<td>33%</td>
</tr>
</tbody>
</table>
Behavioral Attitudes

- 73 percent agreed that they have a role in helping children maintain healthy weight

- 47 percent expressed agreement on a willingness to discuss childhood obesity with parents
Behavioral Attitudes

- 73 percent of pediatric dentists agreed that they have a role in helping children maintain healthy weight.
- 47 percent expressed agreement on a willingness to discuss childhood obesity with parents.
- 98 percent of pediatric dentists agreed on their role of helping children have a prudent consumption of SSBs.
- 98 percent expressed a willingness to discuss SSB consumption with parents.
Behavioral Attitudes

- 73 percent of pediatric dentists agreed that they have a role in helping children maintain healthy weight
- 47 percent expressed agreement on a willingness to discuss childhood obesity with parents
- 38 percent of dental hygienists are willing to discuss childhood obesity issues
- 98 percent of pediatric dentists agreed on their role of helping children have a prudent consumption of SSBs
- 98 percent expressed a willingness to discuss SSB consumption with parents
- 98 percent of dental hygienists are willing to discuss SSB consumption with parents
Subjective norms: Parent Perceptions

- 14 percent agreed that parents are receptive to obesity counseling in the dental office.
- 7 percent agreed that parents think it is important for dentists to screen children for obesity.
- 21 percent thought screening for obesity would make them appear more professional/knowledgeable.
Subjective norms: Parent Perceptions

- 14 percent agreed that parents are receptive to obesity counseling in the dental office.
- 81 percent think parents are receptive to advice about consumption of SSBs.
- 7 percent agreed that parents think it is important for dentists to screen children for obesity.
- 84 percent agreed that parents think it is important for dentists to provide counseling about SSBs.
- 21 percent thought screening for obesity would make them appear more professional/knowledgeable.
- 72 percent agreed that SSB advice would make them appear more professional/knowledgeable.
Subjective norms: Parent Perceptions

- 9 percent had been asked for advice from parents about obesity
- 85 percent had been asked for advice about SSBs
<table>
<thead>
<tr>
<th>Subjective norms: Parent Perceptions</th>
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</thead>
<tbody>
<tr>
<td><strong>Barriers to providing healthy weight interventions</strong> (Rating average for Major Barrier 5, Minor barrier 3, Not a barrier 1)</td>
</tr>
<tr>
<td>Lack of parental motivation</td>
</tr>
<tr>
<td>Lack of parental acceptance of advice about weight management from a dentist</td>
</tr>
<tr>
<td>Fear of appearing judgmental of parents and/or child patients</td>
</tr>
<tr>
<td>Fear of offending the parent</td>
</tr>
<tr>
<td>May create parent dissatisfaction with my practice</td>
</tr>
</tbody>
</table>
## Subjective norms: Parent Perceptions

<table>
<thead>
<tr>
<th>Barriers to providing healthy weight interventions</th>
<th>Rating Average</th>
<th>Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of parental motivation</td>
<td>4.17</td>
<td>.250</td>
</tr>
<tr>
<td>Lack of parental acceptance of advice about weight management from a dentist</td>
<td>4.15</td>
<td>.0004</td>
</tr>
<tr>
<td>Fear of appearing judgmental of parents and/or child patients</td>
<td>4.14</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Fear of offending the parent</td>
<td>4.10</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>May create parent dissatisfaction with my practice</td>
<td>3.62</td>
<td>&gt;.0001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barriers to providing SSB interventions</th>
<th>Rating Average</th>
<th>Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of parental motivation</td>
<td>3.26</td>
<td>.070</td>
</tr>
<tr>
<td>Lack of parental acceptance of advice about nutrition from a dentist</td>
<td>2.38</td>
<td>.005</td>
</tr>
<tr>
<td>Fear of appearing judgmental of parents and/or child patients</td>
<td>2.16</td>
<td>.089</td>
</tr>
<tr>
<td>Fear of offending the parent</td>
<td>2.00</td>
<td>.019</td>
</tr>
<tr>
<td>May create parent dissatisfaction with my practice</td>
<td>1.96</td>
<td>.017</td>
</tr>
</tbody>
</table>
Actual Parent Attitudes

- Scarcity of research
- Primarily qualitative with small groups
- Generally positive
- Similar barriers
Perceived Control Factors
# Perceived Control Factors for Obesity

<table>
<thead>
<tr>
<th>Barriers to providing healthy weight interventions (Rating average for Major Barrier 5, Minor barrier 3, Not a barrier 1)</th>
<th>Rating Average</th>
<th>Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of time in the daily clinical schedule</td>
<td>3.57</td>
<td>.0005</td>
</tr>
<tr>
<td>Lack of trained personnel in my office to perform this service</td>
<td>3.54</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Lack of personal knowledge or training about childhood obesity</td>
<td>3.20</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Lack of knowledge about how to start the conversation</td>
<td>3.15</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Lack of reimbursement from 3rd-party payers</td>
<td>3.00</td>
<td>.222</td>
</tr>
<tr>
<td>Lack of appropriate referral options</td>
<td>2.99</td>
<td>.443</td>
</tr>
<tr>
<td>No additional fees charged to parents for the services</td>
<td>2.85</td>
<td>.316</td>
</tr>
<tr>
<td>Lack of available patient education materials on childhood obesity</td>
<td>2.82</td>
<td>.058</td>
</tr>
<tr>
<td>Dietary recommendations about childhood obesity are ambiguous and/or confusing</td>
<td>2.66</td>
<td>.026</td>
</tr>
<tr>
<td>Concern over legal risks</td>
<td>2.52</td>
<td>.143</td>
</tr>
<tr>
<td>Lack of training in communication skills</td>
<td>2.44</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>May be seen by state dental board as practicing medicine</td>
<td>2.16</td>
<td>.103</td>
</tr>
</tbody>
</table>
81 percent of dental hygienists indicated that the availability of continuing education courses on childhood obesity would encourage them to provide interventions related to childhood obesity issues with parents.
Perceived Control Factors for Obesity: Educational Barriers

- Childhood Obesity and Healthy Weight Counseling
- Nutrition and Nutritional Counseling
- Communication Training
- Knowledge of How to Start the Conversation
Perceived Control Factors for Obesity: Clinical Issues

- 88 percent of pediatric dentists would be interested in advising about weight management if a link between obesity and dental disease is found.

- 85 percent of dental hygienists agreed.
Perceived Control Factors for Obesity: Incentives

- More approaches that add little time to a dental visit
- More parents asking about obesity and weight counseling
- More continuing education courses on childhood obesity
- Clearer clinical guidelines on nutrition and obesity
- Stronger clinical evidence of a link between childhood obesity and dental disease
- More courses on childhood obesity for dental staff
- Increased availability of patient education materials
- Increased credibility and satisfaction from parents
## Perceived Control Factors for SSBs

<table>
<thead>
<tr>
<th>Barriers to providing SSB interventions (Rating average for Major Barrier 5, Minor barrier 3, Not a barrier 1)</th>
<th>Rating Average</th>
<th>Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of reimbursement from 3rd-party payers</td>
<td>2.13</td>
<td>.001</td>
</tr>
<tr>
<td>Lack of appropriate referral options</td>
<td>2.12</td>
<td>.126</td>
</tr>
<tr>
<td>Not enough time in the daily clinical schedule</td>
<td>2.09</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>No additional fees charged to parents for the services</td>
<td>2.01</td>
<td>.013</td>
</tr>
<tr>
<td>Lack of trained personnel in my office to perform this service</td>
<td>1.87</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Lack of available patient education materials on SSBs</td>
<td>1.83</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Lack of knowledge about how to start the conversation</td>
<td>1.65</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Concern over legal risks</td>
<td>1.56</td>
<td>.041</td>
</tr>
<tr>
<td>Lack of training in communication skills</td>
<td>1.56</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>Lack of personal knowledge about the consumption of SSBs</td>
<td>1.52</td>
<td>&gt;.0001</td>
</tr>
<tr>
<td>May be seen by state dental board as practicing medicine</td>
<td>1.45</td>
<td>.024</td>
</tr>
</tbody>
</table>
Research Directions

- Continue to dissect successful intervention programs for useful clues
- Find out more about parent attitudes regarding effective interventions
- Conduct additional studies to determine what intervention methods are most successful
Conclusion
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