A Childhood Obesity Intervention Model for Clinical and School-Based Dental Settings

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Childhood Obesity- Is There A Role for the Dental Profession in this Health Crisis?
What We Will Cover:

- How have dental providers reacted to providing health promotion interventions?
- A case example of creating and implementing a healthy weight intervention.
- What have we learned, and where to do we go from here?
Why Obesity and Dental Settings?

- Observation
  - Children’s Amalgam Trial
  - Alert staff!
  - Measurements

- Opportunity
  - NIH RFA
  - Community and Academic Collaborations!
It would benefit all patients if dentists were included in the support network for people trying to lose weight.

Dr. Michael Glick  
Editor  
Journal of American Dental Association  
May, 2005
How do dental providers react to providing health promotion interventions?

- Tobacco Cessation
- Hypertension (Blood Pressure)
- Nutrition / Eating Habits / Obesity
Tobacco Cessation

- 105 dentists – lacked knowledge of cessation programs – irrelevant to their roles – assess & advise, not manage. (Kunzel et al, JADA Aug 2005)

- Hygienists offer cessation counseling, not dentists. (Rosseel et al, Br Dent J Apr 2009)

- Majority of dentists ask about smoking, few help or refer! Barriers = lack of relevance, patient hostility, negative provider attitude toward prevention. (Watt et al, Oral Health Prev Dent Feb 2004)
Hypertension (Blood Pressure)

- 207 dentists: 98% trained in school,
  27% think it is a good idea,
  5% measure routinely!
  (Greenwood et al, Br Dent J Sept 2002)

- 85% taught to measure BP, seen as important,
  but only 30% do it. (Soares et al, Pac Health Dialog Mar 2004)

- 204 dentists: 25-50% measure. Depends on patient / provider age.
  (Pyle et al, Spec Care Dent Sep-Oct 1999)
70 pediatric dentists – nutrition important, but 25% provide counseling. Factors = training, age, confidence, gender. *(Barithwaite et al, Ped Dent Nov-Dec 2008)*

378 hygienists – 18% referred patients with eating disorders. Issues = perception of severity, knowledge, self-efficacy. *(DeBate et al JBHSR 2006)*

135 pediatric dental residents – formal curriculum in obesity management = more confidence. Will measure weight, not BMI. *(Hisaw et al, Ped Dent Nov-Dec 2009)*
Nutrition / Eating Habits / Obesity in Children

Survey of Maine Dentists and Hygienists

- BMI recording: 98% = Never/rarely
- Referral to PCP: 75% = Never/rarely
- Routinely address weight: 63% = Never/rarely
- Address physical activity: 52% = Never/rarely
- Address soda consumption: 99% = Often/always
- Address healthy eating habits: 85% = Often/always

Maine Center for Public Health
Barriers to Health Promotion

- Training
- Knowledge
- Confidence
- Perception of relevance / importance
- Patient reactions / perceptions
- Lack of coordinated services and referral
- Time
- Reimbursement
Internal / External Barriers

- Perceived external barriers
  - Office isn’t set up for counseling
  - Not reimbursable
- Perceived personal barriers (self-efficacy)
  - Skills training
Norms/Expectations/Habits and Dentistry

- We are a surgical profession
- We didn’t go to school to be counselors
- Adversarial relationship with 3rd party payors affects reimbursement
- Inertia, habits of practice
Overcoming Internal (Provider) Barriers

• Use national, evidence-based standards for feedback.
• Structured conversation provided by patient’s responses and intervention tools.
• Intervention based on accepted behavior change theories.
• Referrals encouraged and made easy.
Healthy Weight Intervention
For Children in a Dental Setting

A case example of creating and implementing a provider health promotion intervention.
Should Dental Staff Get Involved?

What on earth does it have to do with teeth?
Not their job!
Don’t know what to do.
Not nutritionists.
Why would they listen to us?
Why a Dental Setting?

- Dental personnel see average child twice a year.
  - Pediatrician visits = once a year.
- Synergy between dental preventive message and healthy weight message.
- Greater opportunity (time) for dental hygienists to talk to child and parent.
- Parental involvement is part of dental care.
- Close relationships between dentists, hygienists, and patients.
- We should take any additional opportunities to get the healthy weight message to our patients.
Obesity, Systemic Disease and Oral Health

Diagram:
- Diabetes
- Obesity
- Inflammation
- Periodontal Disease
- Cardiovascular Disease
Preventing Obesity Can Lead to Better Oral Health

Decreasing Obesity Risk Behaviors

- Better Diet
  - Less Dental Caries

- Increased Activity
  - Lower Diabetes Risk
    - Better Oral Health
      - Periodontal Health

- Less TV & “Screen Time”
  - Less Dental Caries
Healthy Weight Intervention
For Children:
Feasibility in a Dental Setting

• Pilot study
• 139 children ages 6-13
• Two community clinics in diverse urban areas
• Goals:
  • Develop an intervention for primary care dental settings
  • Assess feasibility
  • Assess acceptability
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- Address healthy eating habits: 85% = Often/always

Maine Center for Public Health
Healthy Weight Intervention

- **Components of intervention:**
  1. Assessment of obesity risk factors.
     - Diet, activity, screen time, meal habits.
  2. Height, weight, body fat, & BMI.
  3. Information and recommendations:
     - Healthy Weight Report Card
     - Goal setting
     - Referral to Pediatrician if needed.
  4. Follow-up every 6 months.
Healthy Weight Intervention

- For **ALL** children – **ALL** weights.
- Individualized approach shown to be best intervention.
- Motivational Interviewing Principles
  - Goal-setting = excellent tool for behavioral change.
Goal-Setting Strategies in Nutritional Counseling

- Recognizing a need for change
- Establishing a goal
- Adopting a goal-directed activity and self-monitoring it
- Self-rewarding goal attainment

HEALTHY KIDS REPORT CARD

**Name** ___________________________  **Date** ___________________________

<table>
<thead>
<tr>
<th>What you’re eating and drinking and your exercise &amp; TV habits:</th>
<th>How are you doing?</th>
<th>Choose 1 or more of these things that you are most ready to change or improve.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast most days?  Yes ☐ No ☐</td>
<td>☐ Great! You have good meal habits.</td>
<td>☐ I will increase my physical activity to _____ days a week.</td>
</tr>
<tr>
<td></td>
<td>☐ Can you eat breakfast more often?</td>
<td>☐ I will increase my physical activity to _____ hours per day.</td>
</tr>
<tr>
<td>How many days a week I exercise or play outside:</td>
<td>☐ Great! You’re active 5 or more days a week.</td>
<td>☐ I will add _____ fruits or vegetables each day.</td>
</tr>
<tr>
<td></td>
<td>☐ Good! You’re active 3 or more days a week.</td>
<td>☐ I will add _____ fruits or vegetables each day.</td>
</tr>
<tr>
<td></td>
<td>☐ Can you be active a little more?</td>
<td>☐ I will add _____ fruits or vegetables each day.</td>
</tr>
<tr>
<td>How many hours I watched TV or played computer or video games yesterday:</td>
<td>☐ Great! You watched TV or played games for 2 or less hours.</td>
<td>☐ I will limit my TV and game time to _____ hours per day.</td>
</tr>
<tr>
<td></td>
<td>☐ Can you watch TV or play games a little less?</td>
<td>☐ I will limit my TV and game time to _____ hours per day.</td>
</tr>
<tr>
<td>How many fruits and vegetables I ate yesterday:</td>
<td>☐ Great! You ate 5 or more fruits and vegetables.</td>
<td>☐ I will add _____ fruits or vegetables each day.</td>
</tr>
<tr>
<td></td>
<td>☐ Can you eat a few more?</td>
<td>☐ I will add _____ fruits or vegetables each day.</td>
</tr>
<tr>
<td>How many snacks (like candies, cookies, chips, or cheeses) I ate yesterday:</td>
<td>☐ Great!</td>
<td>☐ I will choose to eat healthier snacks?</td>
</tr>
<tr>
<td></td>
<td>☐ Can you eat a few less?</td>
<td>☐ I will choose to eat healthier snacks?</td>
</tr>
<tr>
<td></td>
<td>☐ Can you choose to eat healthier snacks?</td>
<td>☐ I will choose to eat healthier snacks?</td>
</tr>
<tr>
<td>How many juices I drank yesterday:</td>
<td>☐ Great! You drank 1 juice or less.</td>
<td>☐ I will drink no more than _______ each day.</td>
</tr>
<tr>
<td>How many sugary drinks I drank yesterday:</td>
<td>☐ Great! You did not drink sugary drinks.</td>
<td>☐ I will drink no more than _______ each day.</td>
</tr>
<tr>
<td></td>
<td>☐ Can you drink a little less?</td>
<td>☐ I will drink no more than _______ each day.</td>
</tr>
</tbody>
</table>

**Your Height and Weight:**

<table>
<thead>
<tr>
<th>Height _______ inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight _______ pounds</td>
</tr>
<tr>
<td>BMI _______</td>
</tr>
<tr>
<td>BMI Percentile _______</td>
</tr>
</tbody>
</table>

*What is Body Mass Index (BMI) Percentile? It shows how your child's weight is in proportion to his or her height compared with that of other children of the same age and gender.

<table>
<thead>
<tr>
<th>BMI Percentile</th>
<th>What you can do</th>
</tr>
</thead>
<tbody>
<tr>
<td>85% and above</td>
<td>You may be overweight. Please make an appointment with your doctor to review this report.</td>
</tr>
<tr>
<td>6-84%</td>
<td>You are in the healthy weight range. Annual check-ups are a good time to talk with your doctor about ways to stay healthy.</td>
</tr>
<tr>
<td>0-5%</td>
<td>You may be underweight. Please make an appointment with your doctor to review this report.</td>
</tr>
</tbody>
</table>

HEALTHY WEIGHT INTERVENTION
The Forsyth Institute and the Institute for Community Health
Version 10/25/99
Feasibility of Healthy Weight Intervention: Time

- The dental hygiene visit in most offices and clinics:
  - Average: 40 minutes
  - Pediatric visits: range from 20 –45 minutes

- Healthy weight intervention plus hygiene visit: ranged from 25 to 45 minutes.
## What Changed in 6 Months?

### Risk Behaviors

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>Baseline</th>
<th>6 Months</th>
<th>mean diff</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit Servings/day</td>
<td>78</td>
<td>1.92</td>
<td>2.36</td>
<td>0.44</td>
<td>0.01</td>
</tr>
<tr>
<td>Veggie Servings/day</td>
<td>78</td>
<td>1.27</td>
<td>1.56</td>
<td>0.29</td>
<td>0.009</td>
</tr>
<tr>
<td>Juice/day</td>
<td>78</td>
<td>1.58</td>
<td>1.88</td>
<td>0.31</td>
<td>0.08</td>
</tr>
<tr>
<td>Soda servings/day</td>
<td>78</td>
<td>1.38</td>
<td>0.86</td>
<td>-0.55</td>
<td>0.003</td>
</tr>
<tr>
<td>Snack food servings/day</td>
<td>78</td>
<td>1.63</td>
<td>1.51</td>
<td>-0.11</td>
<td>0.43</td>
</tr>
<tr>
<td>Exercise # of days/week</td>
<td>78</td>
<td>4.41</td>
<td>4.18</td>
<td>-0.23</td>
<td>0.44</td>
</tr>
<tr>
<td>Eat dinner at table/ # days/week</td>
<td>78</td>
<td>3.77</td>
<td>5.11</td>
<td>1.35</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Eat Breakfast/ # days/week</td>
<td>78</td>
<td>5.15</td>
<td>6.06</td>
<td>0.91</td>
<td>0.01</td>
</tr>
<tr>
<td>TV/Video/comp &gt;2 hrs/ # days/week</td>
<td>78</td>
<td>3.94</td>
<td>3.74</td>
<td>-0.19</td>
<td>0.66</td>
</tr>
<tr>
<td>Eat in front of TV/# days/week</td>
<td>78</td>
<td>2.85</td>
<td>1.97</td>
<td>-0.87</td>
<td>0.01</td>
</tr>
</tbody>
</table>
Feedback from Parents at 12 Months

<table>
<thead>
<tr>
<th>Feedback from Parents at 6 months (N=53)</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>At last visit, we gave you info on child's BMI: Was this info new to you?*</td>
<td>39.6%</td>
</tr>
<tr>
<td>Was the HWI Report Card helpful for making healthy changes for your family?</td>
<td>98.1%</td>
</tr>
<tr>
<td>What changes were made to help your child meet goals</td>
<td></td>
</tr>
<tr>
<td>Better Food Choices</td>
<td>96.2%</td>
</tr>
<tr>
<td>Less TV or screen time</td>
<td>79.3%</td>
</tr>
<tr>
<td>More Exercise</td>
<td>67.9%</td>
</tr>
<tr>
<td>More Breakfast</td>
<td>60.4%</td>
</tr>
<tr>
<td>More Dinner Together</td>
<td>62.3%</td>
</tr>
<tr>
<td>Do you think that your child was comfortable</td>
<td></td>
</tr>
<tr>
<td>a. getting weight MEASURED at the dental office?</td>
<td>94.3%</td>
</tr>
<tr>
<td>b. getting weight and BMI RESULTS in the dental office?</td>
<td>92.5%</td>
</tr>
<tr>
<td>c. getting HW Report Card in the dental office?</td>
<td>96.2%</td>
</tr>
</tbody>
</table>
## Feedback from Parents at 12 months (cont’d)

<table>
<thead>
<tr>
<th>Question</th>
<th>% Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did being part of the HW Program make your child's dental visit too long?</td>
<td>24.5%</td>
</tr>
<tr>
<td>Do you think the dental office is a good place to get info on healthy eating/exercise?</td>
<td>94.3%</td>
</tr>
<tr>
<td>Do you think the dental office is a good place to get your child's height and weight measured?</td>
<td>84.9%</td>
</tr>
<tr>
<td>Do you think the dental hygienist is a good person to discuss height &amp; weight goals with you and your child?</td>
<td>92.5%</td>
</tr>
<tr>
<td>Would you recommend the Healthy Weight Program to other families?</td>
<td>94.3%</td>
</tr>
</tbody>
</table>
Focus Groups with dentists & hygienists

100% - would like to implement intervention
- Hygienists welcome expansion of their roles
- Approve concept of standardizing healthy habits message

50% concerned about logistics
- Pediatric practices had more concerns
  - Time
  - Parental attitudes

Link with oral health viewed as important for implementation and sustainability
Healthy Weight Intervention
in a Dental Setting:
Summary

- Adapts primary dental care model to include a healthy weight intervention.
- Adapts materials from an effective school-based program.
- Goal: Develop an intervention that can be accommodated in a child’s standard dental hygiene appointment.
What have we learned?

- Providers need:
  - Skills training
  - Package approach, simplified
  - Congruent with provider values
The *stages of change theory*
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