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A HEALTHY WEIGHT INTERVENTION for CHILDREN in a DENTAL SETTING

Mary Tavares, DMD, MPH [Senior Clinical Investigator] and
The Forsyth Institute, Boston, MA 02115

Virginia Chomitz, PhD [Senior Scientist]
Institute for Community Health, Cambridge, MA 02141

Abstract

Background—Twice as many U.S. children are overweight or at risk of being overweight as compared to 20 years ago. Dental professionals have an opportunity to participate in obesity prevention with their patients. The authors present a dental office-based healthy weight intervention protocol designed for all children and adolescents.

Conclusions—Routine dental visits offer an excellent opportunity for healthy weight interventions for children. The Healthy Weight Intervention described in this paper can be feasible and acceptable in a pediatric dental setting. It was considered useful by caregivers, providers, and well accepted by children.

Clinical Implications—Healthy eating and lifestyle behaviors can have a positive impact on systemic health as well as oral health. Better food choices can reduce dental caries; while prevention of obesity-related systemic diseases, particularly diabetes, can help to maintain good oral health.

Dental settings, given the paradigm of their standard of care, offer an excellent opportunity for healthy weight interventions. There is a synergy between food recommendations of dental providers and those for overweight prevention. Sweets and refined carbohydrates are not only implicated in tooth decay, they are also calorie intensive foods. In addition, dental care includes two preventive / diagnostic visits per year, one more than the medical model, potentially allowing for twice the annual frequency of an intervention. In a 2005 editorial, Dr. Michael Glick expressed the view that dentists should institute and monitor behavioral obesity interventions, not only for oral health reasons, but to impact their patients' general health.[1] Because weight status can be associated with oral health, Hague and Touger-Decker advocate weight screening as part of comprehensive dentistry.[2] This article describes a healthy weight intervention that can be introduced into a preventive dental visit for children.

Overweight Children: a Growing Health Problem

The 2003 – 2004 National Health and Nutrition Examination Survey (NHANES) found that 18.8% of U.S. children ages 6–11 were overweight, and 37.2% were at risk of overweight; double the prevalence of 20 years ago.[3] Overweight youth have an increased risk of Type 2 diabetes, sleep apnea, orthopedic complications,[4] hypertension and other cardiovascular risk factors,[5,6] as well as long-term psychological effects due to teasing and discrimination.[7] It is estimated that 70% of overweight children will become obese adults,[8] at further risk for chronic disease and cancer.[9] All race/ethnicity groups have seen increases in pediatric obesity, but the prevalence is higher among Hispanic, African American, multi-racial and low-income children.[10,11] These statistics prompted Healthy People 2010 to include the goal of reducing the proportion of children who are overweight or obese.[12] However, in a recent report, researchers at Johns Hopkins, using national data and assuming current trends continue, project

that by 2030, 86.3% of adults will be overweight, 51.1%, obese and the prevalence of overweight children will double.[13]

Strategies for Prevention and Intervention

While increases in obesity are determined by many factors, the energy imbalance created by increasing caloric intake and decreasing physical activity levels play a large role.[14] Table 1 summarizes the recognized behavioral strategies for promoting children's healthy weight. The American Academy of Pediatrics recommends that healthcare providers encourage healthy eating patterns, routine physical activity, and discourage TV / video time, by providing families with education and anticipatory guidance[25]. Evidence suggests that busy providers do not adequately follow these recommendations [26] and that office-based tools targeting specific behaviors may be helpful[27]. One method that is drawing favor for providing office-based obesity prevention or intervention is Motivational Interviewing (MI).[28, 29] With MI, the individual makes a self-assessment of the importance of a targeted behavior and his confidence in changing it, and goes on to set behavioral goals that reflect this confidence. Bandura's *Social Cognitive Theory*, widely used in behavior change research, specifies goal setting as an important strategy.[30] Goal setting has shown results in adult studies promoting dietary and physical activity behavior change and it is a promising office-based strategy for preventing child obesity. [29, 31]

Preventive Intervention in the Dental Office

In a recently completed pilot study, we assessed the feasibility of adapting primary dental care to include an intervention promoting awareness of child obesity risk, providing recommendations, goal-setting, and referrals. In the course of this project, we developed a "Healthy Weight Intervention" (HWI) protocol for the dental setting. This preventive intervention, based on the concepts of Motivational Interviewing, is for children of all weights. We tested the intervention with 139 children, ages 6 to 13, who returned for two or three visits over 18 months. At each preventive/diagnostic visit, a hygienist collected information about each child's obesity risk factors with respect to food, physical activity, "screen time" and meal habits. She measured height, weight, and calculated BMI (Body Mass Index) -for-age percentile. The hygienist used this information to complete an individualized "Health Report Card" with recommendations for healthy behavior modifications. At the end, the child selected a "healthy living" goal for the next 6 months and recorded this on the report card. The hygienist or dentist provided medical referral for children with a BMI $\geq$ 85%.

This pilot study allowed us to evaluate the extent that children and caregivers adopted the hygienist's recommendations, followed through with any referrals, and met their personal behavior change goals. The hygienists recorded the length of the dental visits to assess the feasibility of including this intervention in a typical hygiene visit. We obtained feedback from the caregivers in this study as well as from dental clinicians.

The preliminary results of this pilot study showed that the Healthy Weight Intervention (HWI) can be feasible and well-accepted in a pediatric dental setting. By the 6 month appointment, the hygienists were able to carry out the entire visit including the HWI in less than 40 minutes (mean time). The hygienists and clinic staff who participated in the study felt that the intervention was important and they were willing to make minor scheduling adjustments to accommodate it. At the same time, they did not think that it was a burden on their schedules. A survey of caregivers who participated was very encouraging (Table 2). Nearly all of them reported that they made changes to their child's food choices to help them meet their goals. We also convened two focus groups of practicing dentists and hygienists. They thought that practices would be more likely to incorporate the HWI if parents and families liked it; if there

was a positive impact on dental health as well as weight; and if the intervention was cost neutral. Overall, the clinicians were enthusiastic about the intervention; most thought it feasible to implement, and that their offices would consider it.

We are currently analyzing additional data from this pilot study to prepare a final report. This data will include changes in reported obesity risk behaviors as well as any changes in weight status.

Conclusions

Our preliminary findings show that a Healthy Weight Intervention can be feasible and acceptable in a pediatric dental setting. It was considered useful by caregivers, providers, and well accepted by the child participants. Healthy eating and lifestyle messages have potentially positive results for oral health and systemic health. Better food choices can reduce dental caries; while prevention of obesity-related systemic diseases, particularly diabetes, can impact oral health. Some dental professionals, have already suggested that they are well positioned to counsel patients about weight.[32, 33] Vann et al recommend that pediatric dentists "take a bold step forward and embrace a reliance on calculating and monitoring BMI in each child's dental record".[34] The American Academy of Pediatric Dentistry has set the monitoring, prevention and management of childhood overweight as an important research agenda.[35] The tools developed in our pilot study, along with those from other working groups can be the basis of dental office-based preventive obesity interventions for children and adults. Dental professionals have an obligation to help their patients. Moreover, they have the opportunity to do so.

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Table 1

Recommended behavioral strategies: promoting healthy weight for children

1) Increase time of moderate and vigorous physical activity to 60 minutes of age-appropriate activity on most days of the week.[15]
2) Decrease inactive or sedentary time to less than 2 hours of TV or screen time.[16]
3) Modify food consumption to include more high nutritive value foods such as 5 or more servings of fruits and vegetables and 6 servings of whole grain products daily.[17]
4) Consume less low-nutritive foods such as sugar-sweetened beverages[18, 19] and high calorie snack foods, and fast food.[20,21]
5) Eat breakfast daily[22] and eat dinner together regularly.[23, 24]

Table 2

Feedback about HWI from Caregivers

	Yes (N=67)	% Yes (N=%)
At last visit, we gave you info on child's BMI: Was this info new to you?*	31	46.3%
Was the HWI Report Card helpful for making healthy changes for your family?	65	97.0%
What changes were made to help your child meet goals?		
Better Food Choices	64	95.5%
Less TV or screen time	54	80.6%
More Exercise	48	71.6%
More Dinner Together	46	68.7%
More Breakfast	45	67.2%
Do you think that your child was comfortable?		
a. getting weight MEASURED at the dental office?	64	95.5%
b. getting weight and BMI RESULTS in the dental office?	62	92.5%
c. getting HW Report Card in the dental office?	64	95.5%
Did being part of the HW Program make your child's dental visit too long?	22	32.8%
Do you think the dental office is a good place to get info on healthy eating/exercise?	64	95.5%
Do you think the dental office is a good place to get your child's height and weight measured?	59	88.1%
Do you think the dental hygienist is a good person to discuss height & weight goals with you and your child?	63	94.0%
Would you recommend the Healthy Weight Program to other families?	64	95.5%