

Parental attitude towards healthy weight screening/counselling for their children by dentists

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Abstract

Objective: To obtain information about parental attitude towards healthy weight screening/counselling during dental visits of their children.

Methods: The study was conducted at the King Saud University College of Dentistry Interns Clinic at Darraiyah University Campus, Riyadh, Saudi Arabia, from October to December 2013, and comprised a sample of 6-to-11-year-old children and their parents. A questionnaire was used to record height/weight data, history of body weight counselling and parental opinion regarding healthy weight screening and counselling. SPSS 17 was used for data analysis

Results: Of the 61 children, 35(57.4%) were boys and 26(42.6%) were girls. The overall mean age was 7.9±1.7 years (range: 6-11 years). Besides, 40(65.6%) children were accompanied by their fathers and 21(34.4%) by their mothers. Overall 13(21.3%) children were overweight and 7(11.5%) obese. Moreover, 54(88.5%) parents found the healthy weight screening and counselling for their children valuable, whereas 46(75.4%) endorsed the screening/counselling during the dental visit of their children.

Conclusion: Most parents found healthy weight screening and counselling to be valuable, and endorsed its administration during dental visits for their children.

Keywords: Obesity, Children, Dentists, Parents, Attitude. (JPMA 66: 943; 2016)

Introduction

Overweight (OW) and obesity (OB) have been defined by the World Health Organisation (WHO) as "abnormal or excessive fat accumulation that may impair health".¹ According to a WHO report, there were 1.5 billion overweight (body mass index [BMI] ≥ 25) adults worldwide in 2008, with one-third of them being obese (BMI ≥ 30).¹ The number of OW/OB children has increased markedly in many countries.^{2,3} Similar trends have been observed in Arabian Gulf countries, with rate of increase in obesity most pronounced in Saudi Arabia and Kuwait.⁴ In Saudi Arabia, El-Mouzan et al.⁵ reported that 23% of 5-18-year-old Saudi children were overweight and 11.3% were obese. They also emphasised that measures were needed to prevent further increase in OW/OB in school-age children and adolescents in Saudi Arabia.⁵

Obese children are at risk for serious health problems such as hypertension (HT),⁶ impaired glucose tolerance (IGT) and type 2 diabetes mellitus (T2DM),⁷ liver disease,⁸ asthma,⁹ and obstructive sleep apnoea (OSA).¹⁰ Obese

children may have lower quality of life,¹¹ and demonstrate more negative self-perceptions, decreased self-worth, increased behavioural problems, and lower perceived cognitive ability.¹²

Obese children may have a higher risk for dental caries,¹³ dental trauma,¹⁴ and periodontal disease.¹⁵ A recent study in 4-18-year-old Saudi obese population found an association of obesity with dental trauma and dental erosion.¹⁶

As healthcare professionals, dentists have regular contact with both children and their parents, with access and ability to improve their awareness of obesity as a health concern, and offer guidance on healthy dietary habits and regular physical activity. Suitability of dentists' involvement in recognising children at risk for OW and OB, and in counselling patients/parents on how to adopt a healthy lifestyle has been comprehensively described.¹⁷

A recent study in Saudi dental students and interns found that a majority of dental students/interns endorsed a role for dentists in identification/prevention of OW/OB, particularly in children.¹⁸ However, parental opinion about healthy weight screening and counselling by dentists has not been ascertained. The present study was planned to ascertain parental attitude towards healthy weight screening and counselling during dental visits of their children.

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Subjects and Methods

The study was conducted at the King Saud University (KSU) College of Dentistry Interns Clinic at Darraiyah University Campus (DUC), Riyadh, Saudi Arabia, from October to December 2013, and comprised a sample of 6- to-11-year-old children and their parents. The sample size was determined considering the analytical plan, level of confidence ($\alpha = 0.05$) and margin of error 0.5. The required sample size was 54. The clinic provides primary dental care services to patients of all age groups, including children. Children are accompanied by their parents, and mostly have optimal medical health. Every third child presenting in the clinics was selected. Those with known underlying medical conditions were excluded. Informed consent was obtained from the parents and verbal assent from the children before weight/height measurement.

Height and weight of all selected children were recorded by two examiners. Height was measured without shoes in centimetres and weight with one layer of clothing in kilogrammes, both up to one decimal point, using single weight and height machine (SECA, Germany). The machine was calibrated with another similar machine. The screening instrument developed by Nainar¹⁹ was utilised to make initial assessment whether the patient was overweight. Further, every child's BMI was calculated, and individual weight status was also determined utilising the WHO's age- and gender-specific and the International Obesity Task Force (IOTF) tables.^{2,20} Children with BMI higher than +1 standard deviation (SD) were labelled as overweight and those higher than +2 SD as obese.⁵

Simple 5-item counselling was provided to all the selected children and their parents, irrespective of the child's weight status.²¹

These included suggestions like, the child should eat breakfast every day;²² the child should avoid/limit sugar-sweetened beverages (soft drinks and fruit drinks);²³ the child should have physical activity for at least one hour every day for healthy weight;²⁴ the child should limit screen time to less than 2 hours per day;²⁵ and the child should get adequate night-time sleep.²⁶

A questionnaire was used to record demographic and height/weight data, any history of earlier weight counselling HCPs, and to obtain parental opinion on weight screening and counselling for their children during the dental visit. The questionnaire was pre-tested on children not participating in the main study. Appropriate changes were made to improve its comprehension by parents. Interviews were conducted with the parents to complete the questionnaire.

Ethical approval was obtained from KSU's College of Dentistry Research Centre (CDRC). The study form/questionnaire and the consent forms were also approved by CDRC's ethical committee. Approval for the study proposal was obtained from the KSU College of Dentistry Internship Programme Review Board.

SPSS 17 was used for data analysis. Frequency distribution analyses and chi-square test were undertaken to determine difference in parental response based upon their child's weight status. T-test was used to determine any significant difference ($p \leq 0.05$) in mean weight, BMI scores and height of healthy weight and OW/OB children. Normality of these variables was tested using Shapiro-Wilks Test.

Results

Of the 61 children, 35(57.4%) were boys and 26(42.6%) were girls. The overall mean age was 7.9 ± 1.7 years (range: 6-11 years). Besides, 40(65.6%) children were accompanied by their fathers and 21(34.4%) by their mothers.

The overall mean weight was 26.8 ± 9 kg (range: 11.7-57.7kg), while the mean height was 124.7 ± 12.6 cm (range: 100-151cm). Initial assessment showed 20(32.8%) children were overweight. BMI computations showed 13(21.3%) children were overweight and 7(11.5%) obese.

Only 14(23%) parents had received prior nutritional counselling for their child; 10(16.4%) from their physician, 1(1.6%) from a nurse and 3(4.9%) from a dietician.

Table-1: Parental response to various questions about previous weight counselling.

Question	Number	%
Have you previously been told; that your child should eat breakfast every day for healthy weight?		
Yes	15	24.6
No	46	75.4
That your child should avoid/limit sugar sweetened beverages for healthy weight?		
Yes	22	36.1
No	39	63.9
That your child should have physical activity for at least one hour daily for healthy weight?		
Yes	8	13.1
No	53	86.9
That your child should limit screen time to less than two hours per day?		
Yes	15	24.6
No	46	75.4
That your child should get adequate night-time sleep for healthy weight?		
Yes	18	29.5
No	43	70.5

Table-2: Healthy Weight (HW) Versus OW/OB Children: Weight, Height and BMI.

Characteristic	Healthy Weight	OW/OB	p-Value
Mean Weight (Kg)	23.9 ± 6.1	32.7 ± 11.1	0.001
Mean BMI Score	15.1 ± 1.8	20.8 ± 3.2	0.02
Mean Height (cm)	125.1 ± 11.8	123.8 ± 14.3	0.753

OW: Overweight

OB: Obese

BMI: Body mass index.

Similarly, only 13(21.3%) parents had been told about the body weight of their child; 11(18.9%) by their physician and 2(3.3%) by other healthcare professionals.

Overall, 46(75.4%) of the parents said they had never been told that their child should eat breakfast every day for healthy weight, 39(63.9%) did not know that their child should avoid/limit sugar sweetened beverages, and 53(86.9%) had never been informed that their child should have physical activity for at least one hour daily (Table-1).

Moreover, 54(88.5%) parents found the healthy weight screening and counselling for their children valuable, whereas 46(75.4%) endorsed the healthy weight screening/counselling during the dental visit of their children. There were no significant differences in responses of the parents in terms of their gender ($p > 0.05$).

Of the OW/OB children, 13(65%) were boys and 7(35%) girls. The mean weight and BMI score of OW/OB children were 32.7 ± 11.1 kg and 20.8 ± 3.2 , respectively, compared to 23.9 ± 6.1 kg and 15.1 ± 1.8 of normal weight children ($p < 0.05$) (Table-2).

Besides, 11(26.8%) of the normal weight children had received nutritional counselling compared to 3(15%) of the OW/OB children. The counselling was provided by physicians only in OW/OB children. In contrast, 26(64%) normal weight children were provided counselling by the physicians, 11(27%) by dentists and 4(9.75%) by nurses. There was no meaningful difference between the normal weight and OW/OB groups in terms of answers regarding the 5-item nutrition and health related items ($p > 0.05$). Similarly, there was no significant difference in parental approval of healthy weight screening during a dental visit ($p > 0.05$).

Discussion

BMI is a measure of OW/OB status and has been "defined as a person's weight in kilograms divided by the square of his height in metres (kg/m^2)".^{1,27} Adults having BMI ≥ 25 are categorised as overweight while those having BMI ≥ 30 as obese.¹ BMI provides a relatively simple and useful estimate of OW/OB in adults irrespective of gender or age.^{1,27} However, beyond computation of BMI,

assessment of OW/OB in children also requires comparison of computed BMI with age and gender-specific BMI data and growth reference tables such as the WHO, United States Centres for Disease Control (CDC) or the IOTF.^{2,21,28}

The screening instrument developed by Nainar¹⁹ was utilised to assess whether the child was overweight. This simple approach uses the child's height and weight measurements, and without any additional computation provides an assessment of overweight status in children and adolescents. The purpose is to shorten the time spent on healthy weight assessment/counselling during the dental visit. If a child is found by a dentist to have unhealthy weight, the parents should be informed and asked to seek help from their family physician/paediatrician, or can be referred to one if not already listed with any of them.

The percentage of children with unhealthy weight (32.8%) in this study was similar to the one (34.4%) reported by El-Mouzan et al.⁵ in Saudi children. The proportion of overweight and obese children was also similar in the two studies. Given the significant numbers of OW/OB children, it was a matter of concern that less than one-fourth of the parents had received nutritional counselling or weight screening for their children in the past.

The questions about five (healthy weight) counselling items served dual purpose: first, to find out if the parents had been previously told about these counselling items; and second, to inform them about the five important items if they were not aware of them before or to reinforce even if they already knew about these items. Majority of the parents were not previously aware of these five healthy weight counselling items. It was, therefore, not surprising that a great majority of the parents found the weight screening and simple five-point counselling valuable during their child's dental visit. A recent study has found that majority of senior dental students and interns endorse their role in healthy weight screening and prevention of OW and OB.¹⁸ Given the increase of prevalence of OW/OB in many countries including Saudi Arabia,²⁴ identification and prevention of OW/OB will require involvement of all HCPs including dental professionals. Dental profession has a strong history of health education and of influencing positive behaviour changes in their patients.²⁹ With a simple educational module (consuming less than 10 minutes) incorporated within the undergraduate dental curriculum, dentists in the future can be trained to identify and help address this increasing health challenge in their communities. Similarly, dental practitioners can also incorporate this simple five-minute routine healthy weight assessment and five-item counselling in their patients' first dental visits.

The fact that the present study was conducted in a specific population with minimum adequate sample size was its limitations. Studies involving wider populations and larger sample sizes would be needed to substantiate results of the present study. Nevertheless, it is contemplated that results of the study will help in defining dentists' role in managing the challenge of increasing OW/OB child population in various parts of the world.

Conclusion

Majority of parents found healthy weight screening and counselling to be valuable, and endorsed its administration during dental visits for their children.

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References

- World Health Organization. Obesity and overweight (Fact sheet No. 311).[Online] [cited 2015 February 24]. Available from: URL: <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>
- Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ*. 2000 May 6;320(7244):1240-3.
- Wang Y, Lobstein T. Worldwide trends in childhood overweight and obesity. *Int J Pediatr Obes*. 2006; 1:11-25.
- Ng SW, Zaghoul S, Ali HI, Harrison G, Popkin BM. The prevalence and trends of overweight, obesity and nutrition-related non-communicable diseases in the Arabian Gulf States. *Obes Rev*. 2011; 12:1-13.
- El Mouzan MI, Foster PJ, Al Herbish AS, Al Salloum AA, Al Omer AA, Qurachi MM, et al. Prevalence of overweight and obesity in Saudi children and adolescents. *Ann Saudi Med*. 2010; 30:203-8.
- Koplan JP, Liverman CT, Kraak VA. Preventing Childhood Obesity: Health in the Balance. Washington, DC: National Academies Press, 2004.
- Al-Hussein FA, Tamimi W, Al Banyan E, Al-Twaijri YA, Tamim H. Cardiometabolic risk among Saudi children and adolescents: Saudi children's overweight, obesity, and life styles (S.Ch.O.O.Ls) study. *Ann Saudi Med*. 2014; 34:46-53.
- Schwimmer JB, Deutsch R, Rauch JB, Behling C, Newbury R, Lavine JE. Obesity, insulin resistance, and other clinicopathological correlates of pediatric nonalcoholic fatty liver disease. *J Pediatr*. 2003; 143:500-5.
- Nahhas M, Bhopal R, Anandan C, Elton R, Sheikh A. Investigating the association between obesity and asthma in 6-8-year-old Saudi children: a matched case-control study. *NPJ Prim Care Respir Med*. 2014; 24:14004.
- Redline S, Tishler PV, Schluchter M, Aylor J, Clark K, Graham G. Risk factors for sleep-disordered breathing in children. Associations with obesity, race, and respiratory problems. *Am J Respir Crit Care Med*. 1999; 159:1527-32.
- Schwimmer JB, Burwinkle TM, Varni JW. Health-related quality of life of severely obese children and adolescents. *JAMA*. 2003 Apr 9;289(14):1813-9.
- Van Vlierberghe L, Braet C, Goossens L, Mels S. Psychiatric disorders and symptom severity in referred versus non-referred overweight children and adolescents. *Eur Child Adolesc Psychiatry*. 2009; 18:164-73.
- Chiu SH, Dimarco MA, Prokop JL. Childhood Obesity and Dental Caries in Homeless Children. *J Pediatr Health Care*. 2013; 27:278-83.
- Granville-Garcia AF, de Menezes VA, de Lira PI. Dental trauma and associated factors in Brazilian preschoolers. *Dent Traumatol*. 2006; 22:318-22.
- Gorman A, Kaye EK, Nunn M, Garcia RI. Changes in body weight and adiposity predict periodontitis progression in men. *J Dent Res*. 2012; 91:921-6.
- Jastaniyah NT, Al-Majed I. The relationship between overweight/obesity and dental diseases among Saudi children and adolescents. Master of Science Degree Thesis. King Saud University College of Dentistry. June 2012.
- Tseng R, Vann WF Jr, Perrin EM. Addressing childhood overweight and obesity in the dental office. Rationale and practical guidelines. *Pediatr Dent*. 2010; 32:417-23.
- Wyne AH, Al-Hammad N, Nainar SM. Saudi Arabian dental students' knowledge and beliefs regarding obesity in children and adults. *J Dent Educ*. 2013; 77:518-23.
- Nainar SMH. Simplified screening for overweight in children using the 2007 WHO reference. *Pediatric Obesity*. 2012; 7: 1-8.
- World Health Organization. 2007 WHO Reference - Growth reference data for 5-19 years. [Online] 2007 [cited 2015 April 25]. Available from URL: <http://www.who.int/growthref/en/>
- Tavares M, Chomitz V. A healthy weight intervention for children in a dental setting: a pilot study. *J Am Dent Assoc*. 2009; 140:313-6.
- Nainar, SMH. Five minute nutrition workup for children in dental practice. *Gen Dent*. 2013; 61:e2-3.
- Malik VS, Schulze MB, Hu FB. Intake of sugar-sweetened beverages and weigh gain: a systematic review. *Am J Clin Nutr*. 2006; 84:274-88.
- American Academy of Pediatrics Council on Sports Medicine and Fitness, Council on School Health. Active healthy living: Prevention of childhood obesity through increased physical activity. *Pediatrics*. 2006; 117:1834-42.
- American Academy of Pediatrics Council on Communications and Media. Policy statement - media education. *Pediatrics*. 2010; 126:1012-17.
- Bell JF, Zimmerman FJ. Shortened nighttime sleep duration in early life and subsequent childhood obesity. *Arch Pediatr Adolesc Med*. 2010; 164:840-5.
- US Centers for Disease Control and Prevention. Defining overweight and obesity. [Online] [cited 2015 April 14]. Available from: URL:<http://www.cdc.gov/obesity/defining.html>
- US Centers for Disease Control and Prevention. 2000 CDC Growth Charts. [Online] 2000 [cited 2015 April 14]. Available from: URL: http://www.cdc.gov/growthcharts/clinical_charts.htm
- Pont SJ, Huizinga MM, Fields WT, Beech BM. Targeting Teeth: Pediatric Obesity and the Dental Office. *Obesity Management*. 2008; 4:104-10.