



KNOWLEDGE OF THE RECOMMENDATIONS FOR THE DIAGNOSIS AND TREATMENT OF CHILDHOOD OBESITY AMONG A GROUP OF MEDICAL STUDENTS IN MEXICO

Dear Editor:

Childhood obesity is a serious public health problem in Mexico (1), and it represents an important factor in the development of multiple cardiovascular diseases and complications, such as diabetes *mellitus* and non-alcoholic fatty liver disease, among others (2). Currently, there are recommendations for the prevention, early identification, and treatment of this condition. Among them, there are the Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents with Obesity (3), presented this year by the American Academy of Pediatrics; the Clinical Practice Guideline of Pediatric Obesity-Assessment, Treatment and Prevention by the Endocrine Society (4), published in 2017; and a Mexican Consensus developed in 2015 by an independent group of experts on prevention, diagnosis, and treatment of obesity in children (5). All these documents are open access, and the last one is in Spanish.

The objective of this study was to evaluate the knowledge of medical students about the diagnosis and treatment of childhood obesity.

This analysis was a cross-sectional study conducted from April to May 2023. Undergraduate medical interns from five schools in Puebla, Mexico, were invited via e-mail to participate in an anonymous survey on the diagnosis and treatment of pediatric overweight and obesity according to the recommendations of the Endocrine Society Clinical Practice Guideline (4). A five-point Likert scale was used to evaluate the recommendations.

We asked if they had received training on childhood obesity during their medical school studies, and 93 % ($n = 77$) reported that they had, while 7 % ($n = 6$) mentioned not having taken classes about obesity in children. We also asked if the students knew the endocrine practice guidelines of the American Academy of Pediatrics or those published by the Boletín Médico del Hospital Infantil de México, and it turned out that 64 % ($n = 53$) did not know any guide. Of the participants, 80 % confirmed that they use body mass index (BMI) and the Centers for Disease Control and Prevention (CDC) normative BMI percentiles to diagnose overweight and obesity in children and adolescents > 2 years of age. The rest of the points on diagnosis and treatment are presented in table I.

In conclusion, in this study we observed that during medical training, the students received information on childhood obesity, and most of them knew the current recommendations for the diagnosis and treatment of obesity in the pediatric age. Greater dissemination of the current guidelines for addressing childhood obesity is required. Furthermore, it is relevant to evaluate if an adequate diagnosis of obesity in children is made by young doctors in clinical practice and if the corresponding recommendations for treatment are adequately carried out.

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Table I. Likert scale of recommendations of the Endocrine Society Clinical Practice Guideline for the Assessment, Treatment and Prevention of Pediatric Obesity

Recommendation	Strongly disagree n (%)	In disagreement n (%)	Neither agree nor disagree n (%)	Agree n (%)	Totally agree n (%)
Diagnosing overweight and obesity					
We recommend using BMI and the CDC normative BMI percentiles to diagnose overweight or obesity in children and adolescents ≥ 2 years of age	1 (1.2 %)	7 (8.4 %)	8 (9.6 %)	28 (33.7 %)	39 (47 %)
We recommend diagnosing a child or adolescent > 2 years of age as overweight if BMI is ≥ 85 th percentile but < 95 th percentile for age and sex; as obese if BMI is ≥ 95 th percentile; and as extremely obese if BMI is ≥ 120 % of the 95 th percentile or ≥ 35 kg/m ² We suggest that clinicians take into account that variations in BMI correlate differently to comorbidities according to race/ethnicity, and that increased muscle mass increases BMI	2 (2.4 %)	1 (1.4 %)	10 (12 %)	48 (57.8 %)	22 (26.5 %)
We suggest calculating, plotting, and reviewing a child's or adolescent's BMI percentile at least annually during well-child and/or sick-child visits (Ungraded Good Practice Statement)	0	4 (4.8 %)	5 (6 %)	34 (41 %)	40 (48.2 %)
We suggest that a child < 2 years of age be diagnosed as obese if the sex-specific weight for recumbent length is ≥ 97.7 th percentile on the WHO charts, as US and international pediatric groups accept this method as valid	1 (1.2 %)	9 (10.8 %)	22 (26.5 %)	36 (43.4 %)	15 (18.1 %)
We recommend against routine laboratory evaluations for endocrine etiologies of pediatric obesity unless the patient's stature and/or height velocity are attenuated (assessed in relationship to genetic/familial potential and pubertal stage)	1 (1.2 %)	3 (3.6 %)	8 (9.6 %)	47 (56.6 %)	24 (28.9 %)
We recommend that children or adolescents with a BMI ≥ 85 th percentile be evaluated for potential comorbidities	0	3 (3.6 %)	7 (8.4 %)	41 (49.4 %)	32 (38.6 %)
We recommend measuring insulin concentrations when evaluating children or adolescents for obesity	1 (1.2 %)	2 (2.4 %)	15 (18.1 %)	42 (50.6 %)	23 (27.7 %)
Treating obesity					
We recommend that clinicians prescribe and support intensive, age-appropriate, culturally sensitive, family-centered lifestyle modifications (dietary, physical activity, behavioral) to promote a decrease in BMI	0	2 (2.4 %)	6 (7.2 %)	22 (26.5 %)	53 (63.9 %)
We recommend that clinicians prescribe and support healthy eating habits in accordance with the following guidelines of the American Academy of Pediatrics and the US Department of Agriculture:					
Decreased consumption of fast foods	0	1 (1.2 %)	5 (6 %)	24 (28.9 %)	53 (63.9 %)
Decreased consumption of added table sugar and elimination of sugar-sweetened beverages	0	0	10 (12 %)	23 (27.7 %)	50 (60.2 %)
Decreased consumption of high-fructose corn syrup and improved labeling of foods containing high-fructose corn syrup	0	1 (1.2 %)	15 (18.1 %)	21 (25.3 %)	46 (55.4 %)
Decreased consumption of high-fat, high-sodium, or processed foods	0	1 (1.2 %)	7 (8.4 %)	26 (31.3 %)	49 (59 %)
Consumption of whole fruit rather than fruit juices	1 (1.2 %)	1 (1.2 %)	8 (9.6 %)	27 (32.5 %)	46 (55.4 %)
Portion control education	0	1 (1.2 %)	9 (10.8 %)	19 (22.9 %)	54 (65.1 %)

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Table I (cont.). Likert scale of recommendations of the Endocrine Society Clinical Practice Guideline for the Assessment, Treatment and Prevention of Pediatric Obesity

Recommendation	Strongly disagree n (%)	In disagreement n (%)	Neither agree nor disagree n (%)	Agree n (%)	Totally agree n (%)
Treating obesity					
Reduced saturated dietary fat intake for children and adolescents > 2 years of age	1 (1.2 %)	1 (1.12 %)	8 (9.6 %)	23 (27.7 %)	50 (60.2 %)
US Department of Agriculture recommended intake of dietary fiber, fruits, and vegetables	0	2 (2.4 %)	10 (12 %)	27 (32.5 %)	44 (53 %)
Timely, regular meals, and avoiding constant “grazing” during the day, especially after school and after supper	1 (1.2 %)	2 (2.4 %)	11 (13.3 %)	27 (32.5 %)	42 (50.6 %)
Recognizing eating cues in the child’s or adolescent’s environment, such as boredom, stress, loneliness, or screen time	0	0	9 (10.8 %)	24 (28.9 %)	50 (60.2 %)
Encouraging single portion packaging and improved food labeling for easier use by consumers (Ungraded Good Practice Statement)	0	2 (2.4 %)	12 (14.5 %)	26 (31.3 %)	43 (51.8 %)
We recommend that clinicians prescribe and support the reduction of inactivity and also a minimum of 20 minutes of moderate to vigorous physical activity daily, with a goal of 60 minutes, all in the context of a calorie-controlled diet	1 (1.2 %)	1 (1.2 %)	8 (9.6 %)	23 (27.7 %)	50 (60.2 %)
We suggest that clinicians encourage and support patients to limit nonacademic screen time to 1 to 2 hours per day and decrease other sedentary behaviors, such as digital activities	0	0	9 (10.8 %)	33 (39.8 %)	41 (49.4 %)
We suggest that the health care team identify maladaptive rearing patterns related to diet and activity and educate families about healthy food and exercise habits	0	0	9 (10.8 %)	32 (38.6 %)	41 (49.4 %)
We suggest that the health care team probe for and diagnose unhealthy intrafamily communication patterns and support rearing patterns that seek to enhance the child’s or adolescent’s self-esteem	1 (1.2 %)	0	6 (7.2 %)	34 (41 %)	42 (50.6 %)
We suggest that the health care team evaluate for psychosocial comorbidities and prescribe assessment and counseling when psychosocial problems are suspected	1 (1.2 %)	0	6 (7.2 %)	34 (41 %)	42 (50.6 %)
We suggest pharmacotherapy for children or adolescents with obesity only after a formal program of intensive lifestyle modification has failed to limit weight gain or to ameliorate comorbidities We recommend against using obesity medications in children and adolescents < 16 years of age who are overweight but not obese, except in the context of clinical trials	2 (2.4 %)	10 (12 %)	19 (22.9 %)	27 (32.5 %)	25 (30.1 %)
We suggest that FDA-approved pharmacotherapy for obesity be administered only with a concomitant lifestyle modification program of the highest intensity available and only by clinicians who are experienced in the use of anti-obesity agents and are aware of the potential for adverse reactions	1 (1.2 %)	0	15 (18.1 %)	33 (39.8 %)	41 (49.4 %)
We suggest that clinicians should discontinue medication and reevaluate the patient if the patient does not have a > 4 % BMI/ BMI z score reduction after taking antiobesity medication for 12 weeks at the medication’s full dosage	1 (1.2 %)	1 (1.2 %)	20 (24.1 %)	37 (44.6 %)	24 (28.9 %)

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Table I (cont.). Likert scale of recommendations of the Endocrine Society Clinical Practice Guideline for the Assessment, Treatment and Prevention of Pediatric Obesity

Recommendation	Strongly disagree n (%)	In disagreement n (%)	Neither agree nor disagree n (%)	Agree n (%)	Totally agree n (%)
Treating obesity					
We suggest bariatric surgery only under the following conditions:					
The patient has attained Tanner 4 or 5 pubertal development and final or near-final adult height, a BMI of > 40 kg/m ² or a BMI of > 35 kg/m ² and significant, extreme comorbidities	2 (2.4 %)	4 (4.8 %)	20 (24.1 %)	32 (38.6 %)	25 (30.1 %)
Extreme obesity and comorbidities persist despite compliance with a formal program of lifestyle modification, with or without pharmacotherapy	1 (1.2 %)	3 (3.6 %)	13 (15.7 %)	35 (42.2 %)	31 (37.3 %)
Psychological evaluation confirms the stability and competence of the family unit (psychological distress due to impaired QoL from obesity may be present, but the patient does not have an underlying untreated psychiatric illness)	1 (1.2 %)	4 (4.8 %)	17 (20.5 %)	32 (38.6 %)	29 (34.9 %)
The patient demonstrates the ability to adhere to the principles of healthy dietary and activity habits	2 (2.4 %)	4 (4.8 %)	17 (20.5 %)	31 (37.3 %)	29 (34.9 %)
There is access to an experienced surgeon in a pediatric bariatric surgery center of excellence that provides the necessary infrastructure for patient care, including a team capable of long-term follow-up of the metabolic and psychosocial needs of the patient and family	0	2 (2.4 %)	20 (24.1 %)	30 (36.1 %)	31 (37.3 %)
We suggest against bariatric surgery in preadolescent children, pregnant or breast-feeding adolescents (and those planning to become pregnant within 2 years of surgery), and in any patient who has not mastered the principles of healthy dietary and activity habits and/or has an unresolved substance abuse, eating disorder, or untreated psychiatric disorder	4 (4.8 %)	10 (12 %)	23 (27.7 %)	23 (27.7 %)	23 (27.7 %)

BMI: body mass index; CDC: Centers for Disease Control and Prevention; WHO: World Health Organization; FDA: Food and Drug Administration; QoL: quality of life.

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