

Are Pediatricians Diagnosing Obese Children?

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Background: Pediatric obesity is the most prevalent nutritional disorder in American children. The detrimental social, psychological, and physiological effects of obesity call for pediatricians to address this health concern. The literature demonstrates that clinicians are underreporting the diagnosis of obesity in the pediatric setting. The primary purpose of this study was to determine if pediatricians at one pediatrics clinic in the Ochsner Health System are documenting the presence of an overweight or obese body mass index (BMI) as a diagnosis in the medical record. A secondary purpose of this study was to determine the demographics of all pediatric patients in the Ochsner Health System to be used for program development.

Methods: A retrospective medical record review was conducted. Records from April 1, 2012 to April 1, 2016, were reviewed for the presence of the diagnosis of BMI classified as obese or overweight.

Results: We analyzed a total of 175,066 records in this study. Of these records, 1.32% documented a diagnosis of obesity, and 0.5% documented a BMI score indicating overweight. The percentages of patient visits that met the Centers for Disease Control and Prevention criteria to be classified as obese or overweight were 28.66% and 30.41%, respectively. The majority of our pediatric patients were male (51.76%), white (43.31%), and 5-12 years old (43.80%).

Conclusion: This study demonstrates that pediatricians at Ochsner Health Center for Children are not diagnosing patients who have unhealthy BMI scores as overweight or obese. Interventions are needed to increase the identification of children who may benefit from receiving resources that encourage a healthy lifestyle and optimal weight maintenance.

Keywords: *Diagnosis, nutrition disorders, overweight, pediatric obesity, pediatrics*

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INTRODUCTION

Pediatric obesity is the most prevalent nutritional disorder in American children.¹ Childhood obesity is defined as a body mass index (BMI) greater than the 95th percentile for age.² The Centers for Disease Control and Prevention (CDC) demonstrated that since 1970, the rate of children who are overweight has increased 4-fold in children aged 6-11 years and 3-fold in those aged 12-19 years.¹ Currently, the rate of obesity among pediatric patients is 16.9%.³

Obesity in childhood has been linked to the development of neurologic, cardiovascular, renal, gastrointestinal, and musculoskeletal disorders.⁴ In addition, children who are obese are at a greater risk of developing asthma, dyslipidemia, sleep apnea, and hypertension.⁴ Studies have also shown that more than half of all children with obesity have concomitant metabolic syndrome.⁵ Children who are obese also have a greater risk of psychological distress, depression, and social marginalization than their peers with a healthy weight.⁶

The detrimental social, psychological, and physiological effects of obesity call for pediatricians to address this health concern at every visit. Identification is necessary for patients

to receive thorough weight-loss counseling and referrals to healthy living programs.

The literature demonstrates that clinicians are underreporting the diagnosis of obesity in the pediatric setting.⁷⁻⁹ Cook and colleagues⁷ conducted a national survey to examine the frequency of obesity diagnosis and diet and exercise counseling and found that obesity was diagnosed at 0.78% of all ambulatory visits and 0.93% of all well-child visits.

We implemented this pilot study to determine how many pediatric patient visits at Ochsner Health Center for Children received the diagnosis of being overweight or obese. The purpose of this study was to determine if the pediatricians at one pediatrics clinic in the Ochsner Health System are documenting a BMI score indicating overweight or obesity as a diagnosis in the medical record. A secondary purpose of this study was to determine the demographics of all pediatric patients in the Ochsner Health System. This demographics information will aid in the development of a health promotion intervention geared toward our specific pediatric population.

Table. Documented Diagnoses of Obesity and Overweight vs Actual Diagnosis of Obese and Overweight Body Mass Index in Clinic Visits Between April 1, 2012 and April 1, 2016

		Patient Visits n=175,066	Percentage of Patient Visits
Documented diagnoses	Obese	2,311	1.32
	Overweight	875	0.50
Patients with body mass index indicating overweight or obese	Obese	50,174	28.66
	Overweight	53,237	30.41

METHODS

We conducted a retrospective medical record review at Ochsner Health Center for Children in New Orleans, LA, a single pediatrics clinic in the Ochsner Health System. For the primary outcome, we examined records from April 1, 2012 to April 1, 2016, and reviewed each record for the presence of a BMI score classified as obese or overweight. In addition, we calculated the percentages of children who were either overweight or obese. The CDC's BMI reference was used to define overweight and obese status.² The CDC defines overweight as a BMI equal to or greater than the 85th percentile to the 95th percentile for children of the same age and sex and obese as a BMI greater than the 95th percentile for children of the same age and sex.²

For the secondary outcome, we examined the demographics of all pediatric patients in the Ochsner Health System. Age, race, and sex of all current patients were documented. Pediatric patients were defined as any patient <18 years.

Inclusion criteria consisted of any child aged 0-17 years who visited the clinic for an initial visit or a follow-up appointment. No exclusion criteria were implemented. This study was reviewed by the Ochsner Institutional Review Board and met the criteria for exempt research.

RESULTS

At the time of the record review, the number of pediatric patients in the Ochsner Health System was 414,647. Of these patients, 51.76% (n=214,622) were male, 47.85% were female (n=198,388), and 0.39% were unidentified (n=1,637).

Our pediatric population was 43.31% white, (n= 179,568), 18.69% black (n=77,512), 0.75% Asian (n=3,118), and 0.02% Hispanic (n=101); 37.22% of the pediatric population were identified as other or refused to state ethnicity (n=154,348).

At the time of the study, 43.80% of pediatric patients were 5-12 years (n=181,615); 33.25% were 13-17 years (n=137,870), and 22.95% were <4 years (n=95,162).

A total of 175,066 patient visits occurred at Ochsner Health Center for Children between April 1, 2012, and April 1, 2016. We analyzed all records and found that 1.32% of records documented a diagnosis of obesity (n=2,311), and 0.50% documented a BMI score indicating overweight (n=875) (Table). However, of the 175,066 visits analyzed, 28.66% (n=50,174) and 30.41% (n=53,237) met the CDC criteria to be classified as obese or overweight, respectively.

DISCUSSION

Our pilot study demonstrated that of the 175,066 pediatric visits at the Ochsner Health Center for Children in the

previous 4 years, only 1.82% were classified as obese or overweight. These statistics do not paint an accurate picture of our pediatric population. We found that 59.07% of pediatric patients who visited the Ochsner pediatric clinic were either obese or overweight. Our current research demonstrated the gross underdiagnosis of patients who are obese or overweight.

It is important for pediatricians to focus on obesity early in life, as BMI in childhood has been shown to predict future weight patterns. Nader et al¹⁰ demonstrated that 40% of children who had a BMI greater than the 50th percentile by 3 years were overweight by 12 years, while none of the children who had a BMI below the 50th percentile was overweight by 12 years. Because 22.95% of Ochsner Health System pediatric patients are <4 years, we believe that early efforts in weight management could affect a meaningful number of our patients. To make an impact, pediatricians must first identify patients who are overweight or obese to ensure that they receive optimal counseling and resources to help them achieve and maintain a healthy weight.

A method for increasing the identification of childhood obesity may be modification of the electronic medical record (EMR). For example, if a child's weight is recorded in the vital signs section of the EMR by the medical assistant or registered nurse as overweight or obese, the pediatrician may be alerted to diagnose the patient using the appropriate International Classification of Diseases code, provide weight-loss counseling, and refer the patient to a healthy living program. A 2012 study demonstrated that modifying the EMR to include clinical practice guidelines increased the rate at which pediatricians screened and documented children who were overweight or obese.¹¹

The use of children's books may also increase pediatricians' involvement in identifying children who are overweight or obese. Studies have demonstrated that when pediatricians have concrete resources to distribute to families, they are more likely to document that they screened, counseled, and referred these patients to various health promotion programs.¹²⁻¹⁵ In addition, a children's book may help motivate children to live a healthy lifestyle and obtain an optimal weight. According to social cognitive theory, children observe a model performing a behavior, and the consequence of the action guides subsequent behaviors.¹⁶ This information calls for an intervention that can serve as an age-appropriate educational piece from which children can learn and model a desired behavior. A children's book may help engage novice readers and serve as an educational tool. The use of illustrated books may help with modification of various parameters of weight promotion.^{17,18} A key component of these books is the use of simple text and pictures that provide visual cues to what is happening in the story. In

addition, an illustrated book can help children grasp difficult-to-explain concepts, such as calories, physical activity, and energy balance.¹⁷ A large proportion of the children seen in our health system are 5-12 years. A visually enticing children's book would help to introduce the concept of healthy eating and weight management to the younger cohort (ages 5-7 years), while teaching older children to read, understand, and apply these concepts.

LIMITATIONS

A limitation of this study is that pediatricians may have documented a diagnosis of overweight or obesity in an unconventional location on the medical record. Documentation in the correct place is important so that future care can be initiated based on this diagnosis. For example, if referrals to healthy living programs were to be issued based on an unhealthy BMI, patients whose status is documented in the notes section would be missed. In addition, the number of records included in this study encompassed all patient visits between April 1, 2012 and April 1, 2016. The analyzed records included repeat office visits during which a previous diagnosis of unhealthy BMI was made. Pediatricians should be encouraged, however, to make the diagnosis of a BMI indicating overweight or obesity at every office visit to ensure that this population receives the counseling and resources necessary to obtain a healthy BMI.

CONCLUSION

This study has demonstrated that pediatricians at Ochsner Health Center for Children are grossly underdiagnosing patients with an unhealthy BMI. Consequently, these patients may not be receiving the resources necessary to live a healthy lifestyle and maintain an optimal weight. These results call for future interventions to be implemented to improve the rate at which pediatricians document the diagnosis of an unhealthy BMI in our pediatric population. Future interventions may include implementing changes to the EMR and/or a designing a children's book program to engage children in obesity prevention behaviors.

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