

Evaluation of Childhood Obesity to Parental Obesity in Rural FM Clinic

Nancy Bobrysh DO, PGY-3 (Nancy.Bobrysh@lvhn.org), Elaine Seaton Banerjee, MD, MPH
Lehigh Valley Health Network, Allentown, Pa.

Introduction

- Children with obesity are more likely to develop obesity-related chronic diseases, associated with increased morbidity and mortality
- The prevalence of pediatric obesity in the United States between the ages of 2-19 years old is 18.5% and affects about 13.7 million children¹
- A non-obese one and two-year-old child with at least one obese parent has a 28% chance of being an obese adult. In addition, among obese three to five-year-old children, the chance of adult obesity increased from 24% to 62% if at least one parent was obese²

Methods

- Retrospective chart review of pediatric patients (ages 2-10) of a rural Family Medicine practice with obesity (BMI [body mass index] \geq 95th percentile) and matched patients with normal weight (BMI 5th-85th percentile)
- parental charts were linked to pediatric charts to determine parental BMI
- chi-square analysis was performed to evaluate the relationship between child and parental obesity

Results

TABLE 1: DEMOGRAPHICS

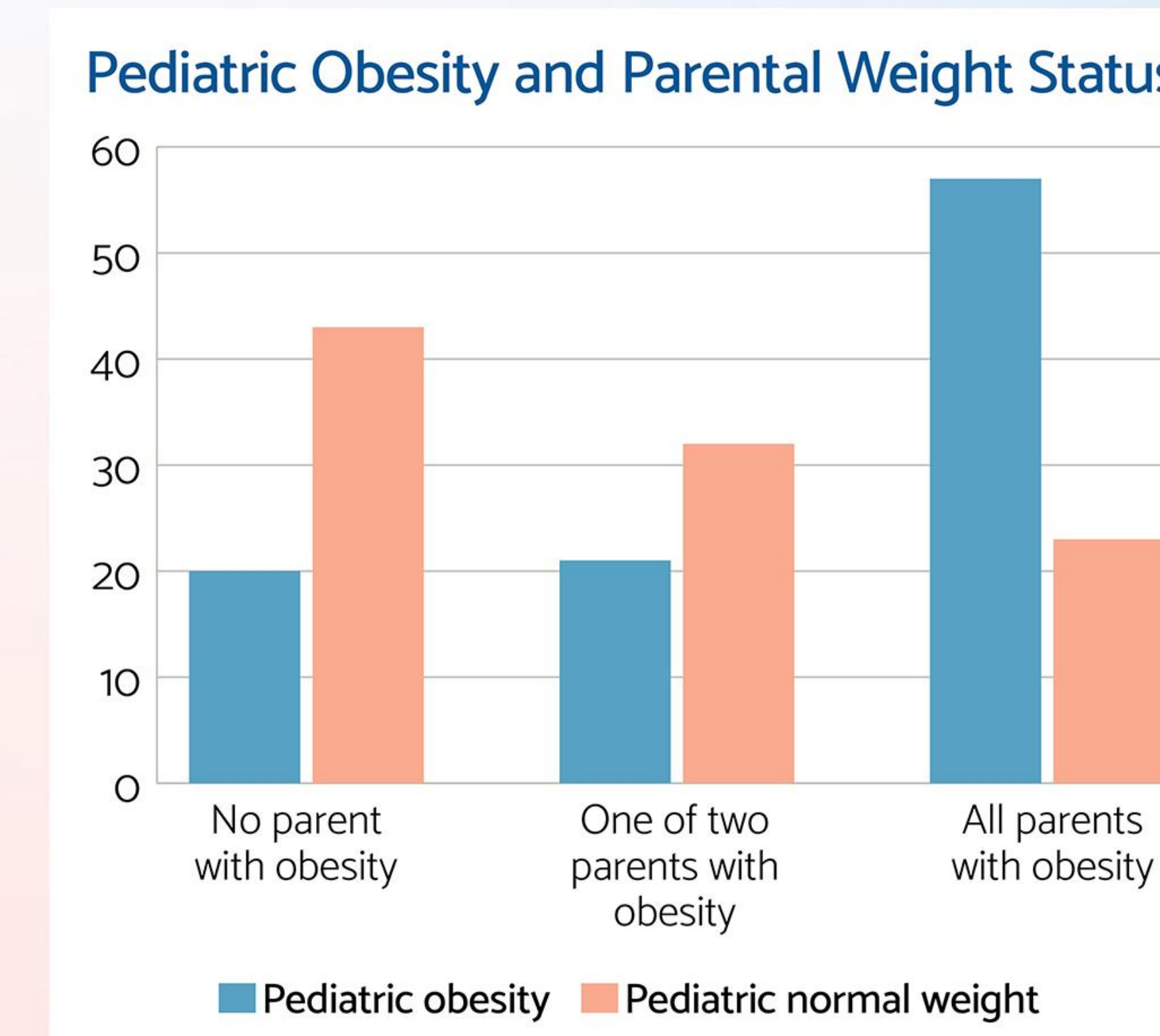
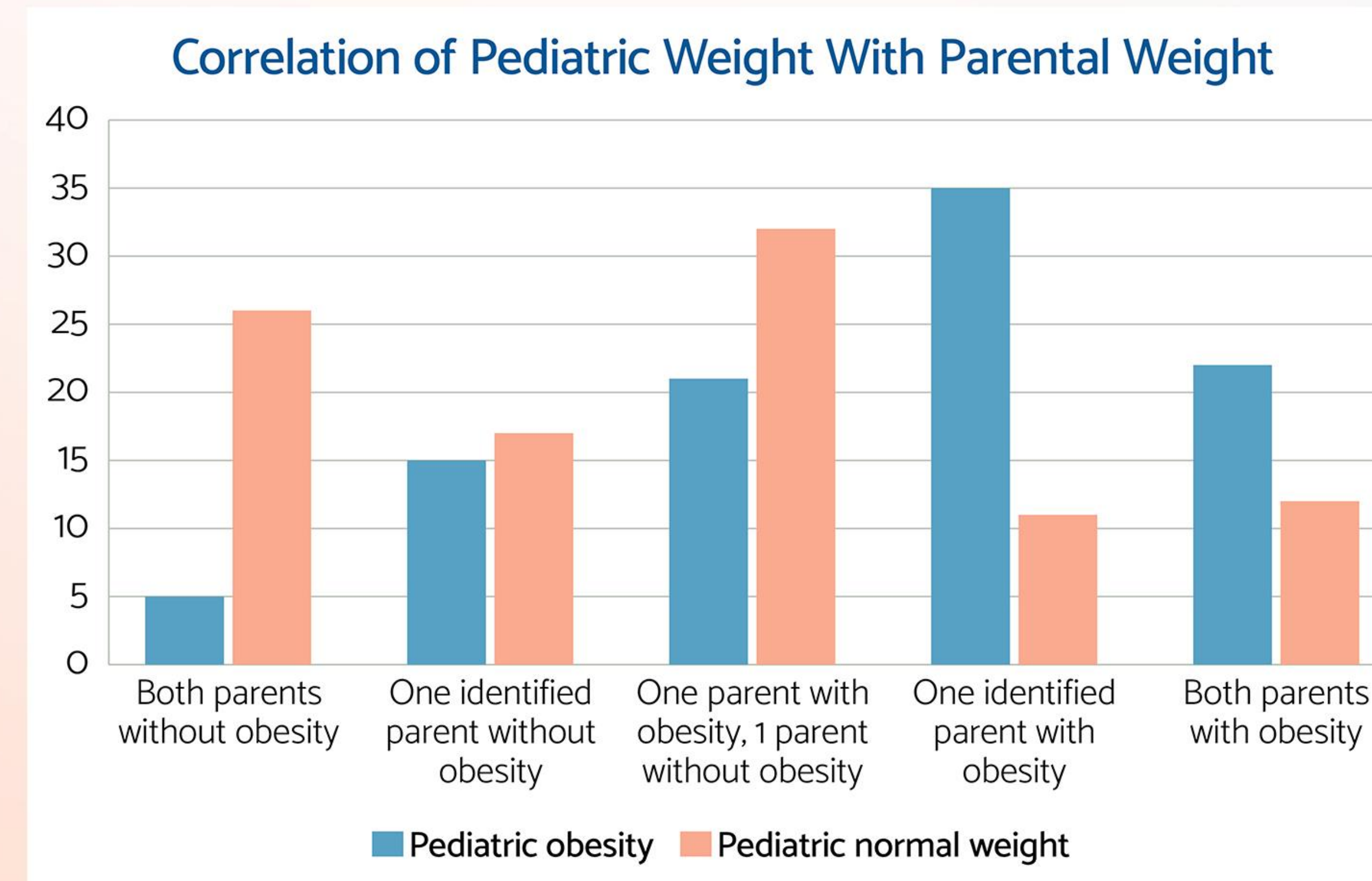
	Overall	Pediatric Obesity	Pediatric Normal Weight
Age*	6.7 (2.4)	6.7 (2.4)	6.7 (2.4)
Sex [†]			
Female	93 (47.4%)	46 (46.9%)	47 (48%)
Male	106 (52.6%)	52 (53.1%)	51 (52%)
Race [†]			
American Indian or Alaska Native	2 (1%)	1 (1%)	1 (1%)
Multi-racial	11 (5.6%)	5 (5.1%)	6 (6.1%)
Other	4 (2%)	3 (3.1%)	1 (1%)
White	179 (91.3%)	89 (90.8%)	90 (91.8%)
Ethnicity [†]			
Hispanic or Latino	18 (9.2%)	9 (9.2%)	9 (9.2%)
Non-Hispanic or Latino	176 (89.8%)	88 (89.8)	88 (89.8)
Unknown	2 (1%)	1 (1%)	1 (1%)
BMI*	19 (3.5)	21.6 (3.2)	16.4 (1)
BMI percentile*	81.3 (21.7)	98 (1.5)	64.6 (19.4)

*Reported as Mean (SD) †Reported as N (%)

TABLE 2: OUTCOMES

	Pediatric Obesity	Pediatric Normal Weight	χ^2 or t	p
Parental BMI*	34.4 (8.3)	29.4 (6.2)	6.08	<0.001
Parental obesity [†]			11.42	<0.001
At least one parent with obesity	78 (79.6%)	56 (57.1%)		
No identified parent with obesity	20 (20.4%)	42 (42.9%)		
Parental weight status [†]			32.1	<0.001
Both parents without obesity	5 (5.1%)	26 (26.5%)		
1 Identified parent without obesity	15 (15.3%)	17 (17.3%)		
1 parent with obesity, 1 parent without obesity	21 (21.4%)	32 (32.7%)		
1 Identified parent with obesity	35 (35.7%)	11 (11.2%)		
Both parents with obesity	22 (22.4%)	12 (12.2%)		
Alternative parental weight status [†]			25.13	<0.001
No parent with obesity	20 (20.4%)	43 (43.9%)		
One of two parents with obesity	21 (21.4%)	32 (32.7%)		
All parents with obesity	57 (58.2%)	23 (23.5%)		

*Reported as Mean (SD) †Reported as N (%)



- Children with obesity were significantly more likely than children with normal weight to have a parent with obesity (BMI $>$ 30 kg/m²) (80% vs 56%, p<0.001).
- The most common intervention for children with obesity was non-specific counseling (N=99, 87%); 8 children (7%) completed laboratory testing, 4 children (4%) were referred to nutrition, and 2 children (2%) were referred to endocrinology.

Conclusion

- In the rural clinic, there was a significant association between parental and child obesity
- Non-specific counseling was the major intervention
- This data suggests that further resources should be devoted to family-based obesity interventions in primary care.

Limitations

- Limitations of this data is that the demographics are 91% white
- Not all parents had their charts within our EMR and/or were not listed under the child's demographics tab, therefore some data was lost to this

1 Childhood obesity facts | overweight & obesity | CDC. <https://www.cdc.gov/obesity/data/childhood.html>. Updated 2019. Accessed Sep 1, 2020.

2 Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting obesity in young adulthood from childhood and parental obesity. *N Engl J Med*. 1997;337(13):869-873.