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Disparities in parent confidence managing child weight-related behaviors

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Abstract

Objective—To describe ethnic disparities in parental confidence managing child weight-related behaviors.

Methods—This was a cross-sectional survey of 59 parents of children with obesity between 4 and 7 years of age presenting to a tertiary care pediatric weight management clinic. Parents completed a validated measure assessing their confidence managing their child's weight-related behaviors (parent confidence score). Student's *t*-tests and linear regression analyses were used to determine parent and child characteristics associated with parent confidence score.

Results—Families were ethnically diverse with half being of Hispanic ethnicity. Mean parent confidence score was 159 (SD 66) with 71% of parents with parent confidence scores below the clinical cut-off for the measure. Parent confidence score was lower among Hispanic (mean 133, SD 67) compared to non-Hispanic parents (mean 184, SD 55, $p < 0.01$). Parent confidence score was most strongly associated with parental ethnicity ($\beta = -0.39$, $p = 0.002$, adjusted $R^2 = 0.14$).

Conclusion—Parental confidence managing weight-related behaviors was low among parents of young obese children, especially those of Hispanic ethnicity.

Practice implications—This study highlights the need to assess parental confidence in managing weight-related behaviors as part of pediatric obesity care and to provide counseling to improve parental management of weight-related behaviors in a culturally-appropriate manner.

Keywords

Child obesity; Parent confidence; Motivational interviewing; Ethnic disparities

1. Introduction

In the United States, the prevalence of obesity (BMI percentile for age 95th percentile for age) is 22% in children of Hispanic ethnicity, compared to 20% in African American children and 14% in Caucasian children [1]. In young children this disparity is even more significant with an obesity prevalence rate of 17% among Hispanic children aged 2–5 years

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Conflict of interest

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compared to 11% among African American and 4% among Caucasian children in this age group [1]. Because parents strongly influence a child's behaviors and environment, their role in helping to manage a child's weight is critical [2–4]. It is therefore important to understand whether there are any ethnic differences in factors that influence a parent's ability to manage a child's weight.

Social cognitive theory proposes that self-efficacy, the belief in one's capabilities to execute the actions required to complete tasks or accomplish goals, is important to initiating and sustaining behavior change [5,6]. Applied to childhood obesity management, social cognitive theory would suggest that a parent's capability to manage a child's weight-related behaviors is associated with their confidence in doing so. Motivational interviewing uses techniques to elicit why and how families can make health behavior changes in order to build confidence in implementing changes that will positively influence a child's weight [7,8]. The use of motivational interviewing for childhood obesity treatment has shown success [7,8], but parents of Hispanic ethnicity have reported lower levels of satisfaction with traditional childhood obesity treatment than non-Hispanic parents [9]. Better understanding how confidence levels differ between Hispanic and non-Hispanic parents may offer insight into the best communication strategies for counseling Hispanic parents about childhood obesity management. Additionally, because parenting ability and confidence are influenced by psychosocial factors like the severity of a child's behaviors, the psychological well-being of the parent, and environmental stressors and support [10–12], it is important to consider whether any of these factors are related to potential differences in confidence levels between different patient populations.

Several studies have evaluated parental confidence implementing lifestyle changes that require modification of a child's diet and activity patterns, for example parental confidence in decreasing a child's sugared beverage consumption or decreasing a child's screen time [13–17]. These studies have found that children of parents reporting higher levels of confidence implementing lifestyle changes have healthier lifestyle habits [16,17]. However, less is known about parental confidence managing more fundamental child behaviors like sneaking food, tantrums about food, and refusal to be physically active which require general parenting skills to manage. Studies that have assessed parental confidence managing these weight-related behaviors have found that parents of children with obesity have lower confidence levels than parents of children of normal weight [18–20]. However, these findings were in relatively homogenous populations and this construct of parental confidence managing weight-related behaviors has not been studied in the United States where large disparities in childhood obesity rates exist [1].

The focus of this study was to examine levels of parental confidence managing the weight-related behaviors of children presenting to a tertiary care pediatric obesity clinic and to determine whether there are differences in parental confidence managing weight-related behaviors among parents of different ethnicities. We hypothesized that there would be differences in confidence levels among parents of different ethnic groups and that lower confidence levels would be associated with more problematic weight-related behaviors in children.

2. Methods

2.1. Study design and participants

A cross-sectional survey of 59 parents was conducted with parents of children between the ages of 4 and 7 years with the diagnosis of obesity (BMI percentile for age ≥ 95th percentile) presenting to a tertiary care weight management clinic. Participants were included regardless of whether the child had previously been seen in the weight management clinic, with the number of prior visits to the clinic accounted for in analysis. Participants were excluded if the parents were not able to read English or Spanish or if the child had an obesity-related genetic syndrome, a primary obesity-related endocrine disorder, or a significant developmental disorder (autism or mental retardation) recorded in their electronic health record (EHR) after formal diagnostic evaluation by a geneticist, endocrinologist, developmental specialist, or behavioral health specialist. This study was approved by the Nemours Institutional Review Board.

2.2. Procedure

Potential participants were identified by reviewing all appointments scheduled in the weight management clinic during the study period, as documented in the EHR. Recruitment phone calls were made to all potential participants a week prior their scheduled appointment to the clinic. Potential participants were approached immediately before their appointment to participate in the study if they had agreed by telephone to participate or if they were unable to be reached prior to the appointment. Parents who agreed to participate in the study completed a battery of validated measures using Research Electronic Data Capture (REDCap) survey software [21] on a tablet computer during the visit. The measures were translated into Spanish by a certified Spanish translator with experience translating medical and research documents. The Spanish version of the measures was evaluated by two Spanish-speaking research staff members and qualitative interviews were conducted with three Spanish-speaking parents about the measures prior to their use.

2.3. Parent characteristics

As part of the measures completed at the visit, parents provided demographic data about themselves including age, gender, race, ethnicity, marital status, educational level, and relationship to child. They also provided information about their weight and height (for calculation of a self-reported BMI). Tuft's Survey of Wellbeing of Young Children's (SWYC) Family Questions was used to screen for family psychosocial risk [22]. The SWYC Family Questions are derived from four validated sources: the Two-Item Conjoint Screener (TICS) which screens for parental substance use (sensitivity 79% and specificity 78%), the Children's Sentinel Nutrition Assessment Program (C-SNAP) which screens for food insecurity (sensitivity 97% and specificity 83%), the Patient Health Questionnaire-2 (PHQ-2) which screens for parental depression (sensitivity 83% and specificity 92%), and the Woman Abuse Screening Tool (WAST-Short) which screens for domestic violence (sensitivity 83% and specificity 92%) [23–26].

2.4. Child characteristics

As part of the measures completed at the visit, parents provided demographic data about the child including age, gender, race, ethnicity, and insurance status. Information was also collected from the child's EHR including: BMI-z score from the clinical visit, BMI percentile for age from the clinical visit, number of completed visits to the weight management clinic, history of a clinical encounter with a behavioral health specialist (yes or no), and documentation of a behavioral health problem in the child's problem list by a healthcare provider (yes or no).

2.5. Child weight-related behaviors and parental confidence managing weight-related behaviors

The Lifestyle Behavior Checklist (LBC) was used to assess parental perceptions of weight-related behavior severity in their child and parental confidence managing these weight-related behaviors [18–20]. This measure has demonstrated high internal consistency ($\alpha = 0.97$) and moderate test–retest reliability ($r_s = 0.87$ for the problem behavior score and 0.66 for the parent confidence score) [18–20]. The LBC consists of two subscales: the problem behavior score and the parent confidence score.

The LBC problem behavior score assesses a parent's perceptions about how problematic 25 weight-related behaviors are in their child using a 7-point Likert scale, from 1 (Not at all) to 7 (Very Much). Examples of behaviors assessed include “Throws a tantrum about food”, “Hides food”, “Complains about doing physical activity”, and “Complains about being overweight”. Higher scores indicate parental perception of more problematic child weight-related behaviors. Scores range from 25 to 175, with a score greater than 50 defined as clinically abnormal based on studies differentiating children with and without obesity [18]. The LBC parent confidence score assesses parental confidence managing these same 25 weight-related behaviors using a 10-point rating scale, from 1 (certain I can't do it) to 10 (certain I can do it). Higher scores indicate increasing parental confidence managing weight-related behaviors. Scores range from 25 to 250, with scores less than 204 defined as clinically abnormal in studies differentiating parents of obese and non-obese children [18].

2.6. Statistical analysis

Descriptive statistics were used to summarize the parent and child characteristics and LBC scores. The following variables were classified dichotomously: ethnicity (Hispanic vs. not), insurance status (Medicaid vs. other), marital status (married or partnered vs. not), and parental education (did not graduate high school vs. graduated high school). Student's *t*-tests were calculated to determine any differences in LBC parent confidence scores based on categorical child and parent characteristics. Pearson product moment correlation coefficients were calculated to determine if there was an association between LBC parent confidence score and continuous child and parent variables, including LBC problem behavior score. Linear regression analyses were used to determine the best model for LBC parent confidence score. Child and parent characteristics were included in the model as indicated by *t*-test and Pearson product moment correlation results. All tests were two tailed with alpha set at 0.05. SPSS version 22 was used.

3. Results

3.1. Child and parent characteristics

The study population was diverse with more than half of Hispanic ethnicity and 41% of parents completing the survey in Spanish (Table 1). The majority of children had Medicaid and more than three-fourths were morbidly obese (BMI% 99). Nearly 20% of children had documentation of a behavioral health diagnosis in the EHR and had seen a behavioral health specialist. The majority of participants were mothers and were married or partnered. Mean parental age was 34 years and mean self-reported BMI was 32 kg/m². More than a quarter of parents did not graduate from high school and screened positive for depression. All parents who did not graduate from high school were of Hispanic ethnicity.

3.2. Parental confidence managing weight-related behaviors and perception of child weight-related behavior severity

Mean LBC parent confidence score was 159 (SD 66) with median score of 164 (range 108–220) and 71.2% of LBC parent confidence scores being below the clinical cut-off. Parents reported the lowest levels of confidence managing the following weight-related behaviors: whines about food (mean score 6, SD 3), yells about food (mean score 6, SD 4), refuses to eat certain foods (mean score 6, SD 3), and throws a tantrum about food (mean score 6, SD 3). Mean LBC Problem Score was 65 (SD 28) with median score of 56 (range 45–86) and 59.3% of scores being above the clinical cut-off. The weight-related behaviors rated as most problematic by parents were: eats too much (mean score 4, SD 2), requests food continuously between meals (mean score 4, SD 2), and eats too quickly (mean score 4, SD 2).

3.3. Associations between parental confidence managing weight-related behaviors and child and parent characteristics

LBC parent confidence score was significantly lower among Hispanic parents compared to non-Hispanic parents and among parents who did not graduate from high school compared to those who did graduate from high school (Table 2). There was no significant difference in LBC parent confidence score among other subgroups based on child and parent characteristics (Table 2). There was no significant association between LBC parent confidence score and child age, child BMI-z score, parent age, self-reported parental BMI, or number of visits to the clinic.

3.4. Associations between parental confidence managing weight-related behaviors and parental perception of child weight-related behavior severity

There was no significant association between LBC Parent Confidence and LBC problem behavior scores for the total study population, but there was a significant negative association between LBC Parent Confidence and LBC problem behavior scores among non-Hispanic families (Table 3).

3.5. Regression models to describe associations with parental confidence managing weight-related behaviors

In linear regression analyses, the strongest model for LBC parent confidence score included only parental ethnicity ($\beta = -0.39$, $p = 0.002$, adjusted $R^2 = 0.14$, Table 4).

4. Discussion and conclusion

4.1. Discussion

The findings from this study contribute to a deeper understanding of parental factors that are important to consider when providing counseling and education to families of young children seeking obesity treatment. Parents of young children seeking obesity treatment reported low parental confidence managing weight-related behaviors, suggesting that building parental confidence in this area may be an important area for intervention.

Hispanic parents especially reported low confidence levels. There may be cultural differences in parent perception and management of weight-related behaviors [27] or disparities in the quality of clinician–parent communication around the topic of managing weight-related behaviors [9,28]. The disparity in parental confidence between parents of different ethnicities highlights the need to develop culturally-appropriate interventions that address the concerns of Hispanic parents, who have demonstrated lower levels of satisfaction with traditional child obesity treatments than non-Hispanic parents [9,28]. There were also disparities in parental confidence between parents of different educational levels, although this association became non-significant when ethnicity was included in regression analyses. Nevertheless, this finding highlights the need to also consider parental literacy level when providing education and counseling to parents of children with obesity.

Prior studies have demonstrated that there is a relationship between low parental confidence implementing lifestyle changes and unhealthy child diet and activity habits [16,17]. Similarly, among non-Hispanic participants in our study, parental confidence managing weight-related behaviors was lower if the child had more problematic weight-related behaviors. Consistent with social cognitive theory, parents who have a lower level of confidence may experience more difficulty managing their child's behaviors thus leading to more problematic weight-related behaviors. Conversely, children's weight-related behaviors may be so difficult to manage that this causes increased parental frustration and decreased parental confidence managing weight-related behaviors. In either case, interventions designed to improve parental confidence managing weight-related behaviors have the potential to enhance child weight treatment and therefore improve outcomes. Novel interventions that integrate positive parenting skills with essential education about the physiologic effects of obesity and their impact on behaviors are needed.

For the Hispanic population, parental confidence managing weight-related behaviors was not associated with a parent's report of child weight-related behaviors. While parental confidence is certainly important to address in child obesity interventions this finding suggests that parental confidence should not be the only focus. For example, it is also important to increase parental awareness of and motivation to manage a child's weight [14] and address factors that may impact a parent's ability to manage a child's weight, including

lack of time, support, finances, and skills [2]. Conversely, there may be parents who prefer and need more directive guidance and for whom motivational interviewing may not be the best modality of treatment [28,29].

There were several limitations to the study. The sample size was relatively small because the number of children with obesity between the ages of 4 and 7 years presenting for tertiary weight management care is limited. However, the differences between Hispanic and non-Hispanic parents were robust even with the small sample size. As these are children presenting for tertiary weight management care, the findings may not be generalizable to other children with less significant weight problems. However, it is worthwhile to learn from parents who are seeking weight management treatment for their children as this represents a subgroup whose children have the most significant burden of obesity and whose experience may provide insight into what parental factors are important to address in childhood obesity treatment efforts more broadly.

There were also limitations to the measures used in this study. For example, provider documentation of a child's behavioral health diagnosis in the EHR may not always be accurate. Parent self-reported weight and height are often subject to social-desirability bias. Additionally, the Spanish version of the LBC has not been validated. However, our study sought to understand the diversity issues in childhood obesity and it was therefore important to include Hispanic parents who were Spanish-speaking. Future studies with larger populations should validate the Spanish version of the LBC used in this study. Finally, parental confidence is not a stable construct and may change over time, especially with treatment or psychosocial stress. There was an attempt to control for the number of visits that a family had completed prior to completing the survey and for family psychosocial stressors, but future studies should evaluate parental confidence and child weight-related behaviors as dynamic variables to determine how they may change over time and with treatment.

4.2. Conclusions

This study found that parental confidence managing weight-related behaviors was low among a diverse cohort of parents of young obese children, especially those of Hispanic ethnicity and with low educational levels. Among non-Hispanic parents, parental confidence managing weight-related behaviors was associated with how problematic a child's weight-related behaviors were perceived to be by the parent.

4.3. Practice implications

This study highlights the need to better understand the factors that influence parental confidence among different patient populations, to assess parental confidence in managing weight-related behaviors as part of routine pediatric obesity care, and to provide counseling to improve parental management of weight-related behavior in a culturally appropriate and literacy sensitive manner. Identifying and enhancing parental confidence around the management of weight related behaviors may be an easy way to enhance pediatric obesity treatment and improve child health.

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Table 1Parent and child characteristics.^a

Child characteristics	
Female	30 (50.8)
Race and ethnicity	
African–American	8 (13.6)
Caucasian	18 (30.5)
Hispanic	30 (50.8)
Other	3 (5.1)
Insurance	
Medicaid	39 (66.1)
Private	20 (33.9)
Age (years)	6.2 (1.0)
Behavioral health diagnosis	11 (18.6)
Behavioral health visit	19 (15.3)
BMI percentile	99.3 (0.7)
Obese	14 (23.7)
Morbidly obese	45 (76.3)
Parent characteristics	
Race and ethnicity	
African–American	6 (10.2)
Caucasian	20 (33.9)
Hispanic	29 (49.2)
Other	4 (6.8)
Spanish as primary language	24 (40.7)
Relationship to child	
Mother	56 (94.9)
Father	3 (5.1)
Parent age (years)	34.2 (6.9)
Parent self-reported BMI (kg/m ²)	32.2 (6.2)
Parent marital status	
Single	13 (22.0)
Married or partnered	37 (62.7)
Separated or divorced	6 (10.2)
Other	3 (5.1)
Parent educational status	
Did not finish high school	16 (27.1)
Finished high school/GED	14 (23.7)
Started college/trade school	9 (15.3)
Finished college/trade school	20 (33.9)
Psychosocial screen	
Food insecurity screen positive	4 (6.8)

Child characteristics	
Substance use screen positive	4 (6.8)
Parent depression screen positive	20 (33.9)
Domestic violence screen positive	3 (5.1)

^a All descriptive statistics are presented as *N*(%) or mean (SD).

Table 2

Subgroup comparisons of parental confidence managing weight-related behaviors.

	LBC parent confidence score ^a [mean (SD)]		<i>t(df)</i>	<i>p</i>
	Yes	No		
Child characteristics				
Is the child male?	158 (61)	159 (72)	−0.03 (56.0)	0.98
Is the primary insurance Medicaid?	150 (71)	175 (54)	1.49 (48.6)	0.14
Has the child been diagnosed with a behavioral health problem?	151 (60)	160 (68)	0.45 (16.5)	0.66
Has the child seen a behavioral health specialist?	149 (66)	160 (67)	0.48 (11.1)	0.64
Parent characteristics				
Is the parent Hispanic?	133 (67)	184 (55)	3.16 (54.1)	0.01
Did the parent screen positive for depression?	153 (70)	162 (65)	0.50 (36.2)	0.62
Did the parent graduate from high school?	172 (66)	123 (62)	2.56 (25.2)	0.02
Is the parent married?	157 (62)	161 (74)	0.22 (38.1)	0.83

^aLifestyle Behavior Checklist (LBC) parent confidence score: measures parental confidence managing a child's weight-related behaviors.

Table 3Association between parent confidence score^a and problem behavior score.^b

	<i>r</i>
Total study population	0.03
Hispanic parents	0.19
Non-Hispanic parents	−0.40 [*]

^aLifestyle Behavior Checklist (LBC) parent confidence score: measures parental confidence managing a child's weight-related behaviors.^bLifestyle Behavior Checklist (LBC) problem behavior score: measures parental perception of child weight-related behavior severity.^{*}*p* < 0.05.

Table 4

Linear regression models for parent confidence.

Association with parent confidence score	<i>B</i>	β	<i>p</i>	95% Confidence interval for <i>B</i>	Adjusted means (SD)
Adjusted $R^2 = 0.109$					
Parent Hispanic	−39.32	−0.30	0.08	−83.05 to 4.40	157 (27)
Parent education, less than high school	−20.05	−0.14	0.40	−67.56 to 27.46	
Problem behavior score	−0.11	−0.05	0.73	−0.72 to 0.51	
Adjusted $R^2 = 0.134$					
Parent Hispanic	−38.83	−0.30	0.06	−79.77 to 2.11	159 (27)
Parent education, less than high school	−21.71	−0.15	0.35	−67.64 to 24.33	
Adjusted $R^2 = 0.135$					
Parent Hispanic	−50.81	−0.39	0.002	−82.87 to −18.75	159 (26)
Adjusted $R^2 = 0.094$					
Parent education, less than high school	−48.80	−0.33	0.01	−85.70 to −11.89	159 (22)