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Maternal Feeding Strategies, Child Eating Behaviors, and Child BMI in Low-Income African-American Preschoolers

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Abstract

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Objective: To test the hypothesis that low-income African-American preschool children would have a higher BMI if their mothers reported greater "restriction" and "control" in feeding and if mothers reported that children showed greater "food responsiveness" and "desire to drink." In addition, to test whether higher maternal "pressure to eat" would be associated with lower child BMI.

Research Methods and Procedures: A questionnaire was completed by 296 low-income African-American mothers of preschool children. It assessed three constructs on maternal feeding strategies ("restriction," "pressure to eat," and "control") and two on child eating behaviors ("food responsiveness" and "desire to drink"). Children's BMI was measured, and mothers' BMI was self-reported.

Results: The mean (standard deviation) BMI *z*-score of the children was 0.34 (1.5), and 44% of the mothers were obese (BMI $\geq$30 kg/m^2). Only maternal "pressure to eat" had a significant overall association with child BMI *z*-score ($r = -0.16$, $p < 0.01$). Both maternal "restriction" and "control" were positively associated with children's BMI *z*-score in the case of obese mothers ($r = 0.20$, $p = 0.03$ and $r = 0.24$, $p = 0.007$, respectively), but this was not so in the case of non-obese mothers ($r = -0.16$, $p = 0.05$ and $r = -0.07$, $p = 0.39$, respectively).

Discussion: Among low-income African Americans, the positive association between maternal restriction and control in feeding and their preschoolers' BMI was limited to obese mothers. Relations between parent feeding strategies and child weight status in this population may differ on the basis of maternal weight status.

Key words: preschool, feeding behaviors, mothers, parent weight status, maternal-child interaction

Introduction

The increasing prevalence of obesity in pediatric populations has prompted greater interest in the relationships among parent feeding practices, child eating behaviors, and parent and child weight status (1–10). Studies of this topic could identify potentially modifiable behaviors that might become the targets of obesity intervention and prevention efforts. However, the previous studies examining these relations have primarily focused on non-Hispanic white children from middle- and upper-income households with college-educated parents. Much less is known about low-income or minority children (10), who may be at higher risk for obesity (11–13). Examination of the relationships among parent feeding practices, child eating behaviors, and parent and child weight status in specific populations of minority families could yield useful information regarding variables that may be important to incorporate into culturally sensitive obesity intervention and prevention efforts (14,15).

Parenting strategies assessed by means of questionnaires have included controlling meal times and food choices, restricting a child's eating of high-fat or high-sugar foods,

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pressuring a child to eat more food, and using food as a reward for pro-social behavior (16). Although studies of parent feeding practices and their associations with child weight status have yielded mixed results, the two most consistent findings are related to parental "restriction" of their children's access to food and "pressure to eat," which have opposite relationships to child weight status. "Restriction" tends to be associated with higher weight in children (4,17–20), whereas parents' "pressure to eat" is associated with lower weight in children (1,2,4,17,20).

Preschool children's eating behaviors could also be risk factors for childhood obesity, but the relationship between parental reporting of children's eating behaviors and the weight of the parents or their children has been less well studied. Among older children, the obese, as compared with the non-obese, tend to eat more in response to external cues about the availability of appetizing food (21). In addition, preschool children from obese families show a greater desire to drink and are more food-responsive than children from non-obese families (5). In this case, food responsiveness refers to the child's tendency to eat if given the opportunity, and it is an extension of the concept of eating in response to external cues, which has been studied in older children (21).

Based on prior research, parenting variables such as restriction, control, and pressure to eat and child eating behaviors such as food responsiveness and desire to drink could be instrumental in identifying potentially modifiable targets for obesity intervention efforts in an understudied population such as low-income African-American families with young children. Therefore, the aims of this study were to examine, among urban, low-income African-American preschool children, the association of maternal feeding strategies and child eating behaviors with the BMI of mothers and their children. We hypothesized that parents' reporting of the feeding constructs "restriction" and "control" and the child eating constructs "desire to drink" and "food responsiveness" would be positively related to child BMI and that parents' reporting of "pressure to eat" would be negatively related to child BMI. We also explored whether these hypothesized relationships differed by the children's sex or the mothers' obesity or education status.

Research Methods and Procedures

Research Design and Setting

We conducted a survey of African-American mothers who brought their children, 24 to 59 months of age, to clinics of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC)[1] in Cincinnati, Hamilton County, OH, between April and October 2003. WIC is a federally funded program that provides supplemental food and nutrition counseling to low-income women and their children (up to 5 years of age). To be income-eligible for WIC, household income must be at or below 185% of the federal poverty level. At the time of this study, 185% of the poverty level was $34,040 per year for a family of four (22). In addition to the survey, we obtained height and weight measurements from the children's WIC records.

Sampling

Of the 17 WIC clinics in Hamilton County, OH, 7 were identified as potential sites for this study because each provided services to at least 650 African-American children who were 24 to 59 months of age and at least 70% of the clinic's clients were African-American. For purposes of this study, "mother" (i.e., the survey respondent) refers to the primary female caregiver bringing the child to the WIC clinic. This included biological mothers, grandmothers, and other legal guardians.

Research staff recruited mothers during predetermined clinic hours that had high visit volumes. High-volume periods were determined by the clinic coordinator at each site, and research staff was available for at least 50% of these times during the period of recruitment. During these hours, mothers registering their child's arrival for a clinic visit were asked to identify their race, and all consecutively arriving African-American mothers were invited to participate in the study. Mothers had to be English-speaking and at least 18 years of age. Potential study participants were to be excluded if their child had a chronic medical condition affecting feeding and/or appetite, such as cerebral palsy or congenital heart disease, but none of the mothers we approached about the study had children with such conditions.

A total of 307 eligible subjects were approached for the study; 7 (2%) of these subjects declined to participate. Of the 300 subjects, 1 was later discovered to be ineligible (the parent was less than 18 years of age), and 3 others had children whose height and weight data were missing from the WIC record, leaving a final sample of 296 subjects. All surveys were self-administered except for five that were interviewer-administered, at the participant's request, because of reading difficulties. Informed written consent was obtained from all participants, and each received $5 compensation to complete the ~10-minute survey. The Institutional Review Boards at Cincinnati Children's Hospital Medical Center and Ohio Department of Health approved the study.

Parent Feeding and Child Eating Measures

A total of 29 questions comprising five constructs (three related to parent feeding strategies and two related to the child's eating behaviors) were obtained from previously validated instruments (1,6,7). To keep the survey sufficiently brief to attain high participation rates, we

[1] Nonstandard abbreviations: WIC, Women, Infants and Children; CI, confidence interval.

Table 1. Parent feeding and child eating constructs

Construct	Items
Parent feeding	
Restriction	1. I have to be sure that my child does not eat too many sweets (candy, ice cream, cake, pastries).
	2. I have to be sure that my child does not eat too many high-fat foods.
	3. I have to be sure that my child does not eat too much of his/her favorite foods.
	4. I intentionally keep some foods out of my child's reach.
	5. I offer sweets (candy, ice cream, cake, pastries) to my child as a reward for good behavior.*
	6. I offer my child her favorite foods in exchange for good behavior.*
	7. If I did not guide or regulate my child's eating, s/he would eat too many junk foods.
	8. If I did not guide or regulate my child's eating, s/he would eat too much of her favorite foods.
Pressure to eat	1. My child should always eat all of the food on his/her plate.
	2. I have to be especially careful to make sure my child eats enough.
	3. If my child says "I'm not hungry," I try to get him/her to eat anyway.
	4. If I did not guide or regulate my child's eating, s/he would eat much less than s/he should.
Control	1. I allow my child to choose which foods to have for meals.*
	2. I decide how many snacks my child should have.
	3. I allow my child to wander around during a meal.*
	4. I decide when it is time for my child to have a snack
	5. I allow my child to decide when s/he has had enough snacks to eat*
	6. I decide the times when my child eats his/her meals.
	7. I let my child decide when s/he would like to have his/her meal*
	8. I let my child eat between meals whenever s/he wants*
	9. I insist my child eats meals at the table.
	10. I decide what my child eats between meals.
Child eating	
Desire to drink	1. If given the chance, my child would always be having a drink.
	2. If given the chance, my child would drink continuously throughout the day.
Food responsiveness	1. My child always asks for food.
	2. If given the chance, my child would always have food in his/her mouth.
	3. Given the choice, my child would eat most of the time.
	4. If allowed to, my child would eat too much.
	5. Even if my child is full, s/he finds room to eat his/her food.

* Scoring of item responses was reversed.

selected these constructs from among those available in the literature. They were selected because they focused more on behaviors than on attitudes and were the constructs that have most consistently been shown to be related to either maternal or child weight (1,6,7,16).

For parent feeding strategies, two constructs, restriction (8 items) and pressure to eat (4 items), were drawn from the Child Feeding Questionnaire (1) (Table 1). Each item had five response options: (1) disagree, (2) slightly disagree, (3) neutral, (4) slightly agree, and (5) agree. A third construct, control (10 items), was drawn from the Parental Feeding Style Questionnaire (6) (Table 1). Each item also had five response options: (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always.

For child eating behaviors, two constructs, desire to drink (2 items) and food responsiveness (5 items), were drawn

from the Children's Eating Behavior Questionnaire (7) (Table 1). Each item had five response options, ranging from (1) never to (5) always, as noted above for the construct of parental control.

Height and Weight Measures

Mothers' height and weight were self-reported, and from these data, BMI (kg/m^2) was calculated. If mothers reported being pregnant, their BMI was calculated using their self-reported pre-pregnancy weight. Of the 47 pregnant mothers, 6 had no BMI data because they failed to report their pre-pregnancy weight.

Children's height and weight were obtained from their WIC record. WIC clinics obtain height and weight measurements on children every 6 months, and 53% of the measurements used in this study were obtained on the same day that the mother completed the questionnaire. Analyses involving child BMI were conducted on 290 children because height and weight data were excluded for 1 child whose measurements were taken more than 6 months before the survey date and for 5 other children whose most current measurements were taken before 24 months of age. Children's height and weight measurements were obtained in the WIC clinics using a standard protocol. A WIC staff member measured the child's height to the nearest 0.25 inch using a wall-mounted stadiometer. An electronic or balance-beam scale was used to measure the child's weight (in light clothing without shoes) to the nearest ounce.

Covariates

The survey contained additional questions about the mother's age, education, income, employment, and marital status. Mothers were also asked whether they were currently enrolled in school and whether their child currently attended day care.

Analysis

Variable Construction. For each of the five feeding and eating constructs, we derived a score by summing the respondent's item scores and dividing by the number of completed items in the construct, giving a theoretical score for each construct between 1.0 and 5.0. A construct score was considered missing for a respondent if any item was missing from "desire to drink" and if more than one item was missing from the other four constructs. If only one item was missing from those constructs, that item score was replaced with the mean score of the other items in that construct. Applying these criteria across our 1480 scale scores (296 subjects $\times$ 5 scores per subject), we had four missing scale scores and six scale scores for which we had to impute the value for one item.

Higher construct scores indicated a greater level of a given construct. For example, a higher "restriction" score meant a greater level of a mother's restriction of her child's eating, and a higher "food responsiveness" score meant that the mother perceived that her child was more responsive to food. We hypothesized a significant negative association between "pressure to eat" and child BMI *z*-score, but a significant positive correlation between the other four constructs and child BMI *z*-score.

Maternal BMI was categorized according to standard criteria (23), with mothers considered obese if their BMI was $\geq$30 kg/m^2. Children's BMI percentile and *z*-score were calculated using the 2000 Centers for Disease Control and Prevention growth reference to standardized BMI-for-age and -sex (24), and children were placed in BMI categories according to commonly used BMI percentile cut-off points.

Statistical Testing. Pearson-product moment correlation coefficients were first used to assess the bivariate associations between each of the five feeding/eating construct scores and maternal BMI and child BMI *z*-score. We then conducted multivariate linear regression to assess these correlations after controlling for potential confounding variables. For child BMI *z*-score, we controlled for the child's age and sex plus five maternal covariates: age, education, income, employment, and marital status. For the maternal BMI, we controlled for the five maternal covariates. To assess the possibility of a nonlinear relationship between BMI and feeding/eating constructs, we also used ANOVA to examine the mean construct scores across BMI categories.

We then evaluated nine a priori two-way interactions between each of three maternal feeding construct scores and three covariates: sex of the child (boy vs. girl), maternal education (high school or less vs. more than high school), and maternal obesity ($<$30 kg/m^2 vs. $\geq$30 kg/m^2). These interactions were selected on the basis of previous research suggesting that the relationship between maternal feeding strategies and child weight might differ by the sex of the child (19) or maternal obesity (2,25). We hypothesized that maternal education might also modify the construct-BMI relations. We used two approaches to evaluate these nine interactions. First, for both subgroups of each covariate, we calculated the Pearson correlation coefficient for the construct score and child BMI *z*-score and then compared the magnitude and significance of the two correlations. For example, we compared the correlation between restriction and child BMI *z*-score for obese and non-obese mothers. For statistical testing, we constructed nine linear regression models, one for each interaction. We used child BMI *z*-score as the dependent variable, and the model contained the construct score, the covariate, and the interaction between the construct score and the covariate. We considered as significant any interaction in which the p value on the interaction term in the model was $<$0.05.

Table 2. Distribution of maternal and child BMI and mean parent feeding and child eating construct scores

	No. (%) or mean ± SD
Maternal BMI* (kg/m^2)	
<24.9	77 (26.5)
25–29.9	86 (29.7)
30–39.9	97 (33.4)
≥40.0	30 (10.3)
Child BMI percentile*	
<5	19 (6.6)
5–14.9	12 (4.1)
15–84.9	177 (61.0)
85–94.9	44 (15.2)
≥95	38 (13.1)
Parent feeding construct	
Restriction	3.78 ± 0.82
Pressure to eat	3.59 ± 0.88
Control	4.00 ± 0.50
Child eating construct	
Desire to drink	2.61 ± 1.07
Food responsiveness	2.50 ± 0.82

* N = 290 rather than 296 because 6 subjects had missing BMI data. SD, standard deviation.

Results

Sample Characteristics

The mean (standard deviation) age of the 296 survey respondents was 28 (7.7) years. Twenty-nine percent of the respondents had not completed high school, 39% had completed high school, and 32% had at least some college education. Twenty-six percent were currently attending school, 43% were employed, and 15% were married. Annual household income was reported as less than $6000 for 52% of the sample. The children (154 boys, 142 girls) had a mean age of 41.5 (9.8) months. Fifty-two percent of the children attended some day care, and these children were in day care an average of 29.5 (16.9) hours per week.

Anthropometrics and Construct Scores for Parent Feeding and Child Eating

The mean maternal BMI was 30.1 (7.1) kg/m^2, and 44% of the mothers were obese (BMI ≥30 kg/m^2) (Table 2). The mean child BMI z-score was 0.34 (1.56), and 28% of the children had a BMI at or above the 85th percentile for age and sex (Table 2). Maternal BMI and child BMI z-scores were significantly correlated [r = 0.18, p = 0.002, 95% confidence interval (CI), 0.065 to 0.29]. The internal consistency, assessed by Cronbach's α, of the items in the two constructs measuring the child's eating behavior ("desire to drink" = 0.77 and "food responsiveness" = 0.74) was higher than for the three constructs measuring parent feeding strategies ("control" = 0.68, "restriction" = 0.64, and "pressure to eat" = 0.54). Scores for all five constructs had a roughly normal distribution.

Relationships Between Maternal BMI and Parent Feeding and Child Eating Behavior

Maternal BMI was not significantly correlated with any of the maternal feeding or child eating constructs either before or after adjustment for maternal covariates (data not shown). The mean construct scores also did not differ by maternal BMI category (Table 3), except for "food responsiveness." The association of food responsiveness with maternal BMI was explained largely by mothers with the highest BMI (≥40 kg/m^2), who tended to rate their children as less food-responsive.

Relationships Between Child BMI and Parent Feeding and Child Eating Behavior

Maternal "pressure to eat" was significantly correlated with child BMI z-score (r = −0.16, p < 0.01; 95% CI, −0.27 to −0.046), suggesting that mothers of children with lower BMI reported using more pressure to get their children to eat. This significant association persisted after adjustment for the child's age and sex plus the maternal covariates (r = −0.16, p = 0.01; 95% CI, −0.27 to −0.045). This same trend was seen for the mean "pressure to eat" score across child BMI categories (Table 3), with the mothers of leaner children reporting higher scores (more pressure). The other two parent feeding scores and the two child eating scores were not significantly related to child BMI z-score either before or after adjustment for covariates (data not shown), nor did these four construct scores differ by child BMI category (Table 3). These overall findings were unchanged when we separately examined children who had BMI measured on the day the maternal survey was completed and those who had BMI measured on another day in the prior 6 months.

Assessment of Interactions

Of the nine interactions (restriction, pressure to eat, and control × maternal education, maternal obesity, and sex of the child) tested in regression models, only two were significant: restriction × maternal obesity (p = 0.005) and control × maternal obesity (p = 0.025). The finding of only these two significant interactions was not changed when the regression models contained maternal BMI as a continuous variable or maternal BMI and education as four categories rather than as two (data not shown). Restriction was positively associated with child BMI z-score among obese mothers (r = 0.20, p = 0.03; 95% CI, −0.02 to 0.36),

Table 3. Comparison of mean (± standard deviation) parent feeding and child eating construct scores by maternal and child BMI

	Parent feeding constructs			Child eating constructs	
	Restriction	Pressure to eat	Control	Desire to drink	Food responsiveness
Maternal BMI (kg/m^2)					
<24.9	3.7 ± 0.76	3.7 ± 0.86	4.0 ± 0.44	2.5 ± 1.17	1.5 ± 0.80
25–29.9	3.9 ± 0.85	3.7 ± 0.90	4.0 ± 0.49	2.6 ± 1.01	1.5 ± 0.73
30–39.9	3.8 ± 0.82	3.5 ± 0.90	3.9 ± 0.50	2.8 ± 1.04	1.7 ± 0.90
≥40.0	3.6 ± 0.94	3.5 ± 0.74	4.0 ± 0.59	2.6 ± 1.02	1.1 ± 0.69
*p**	0.63	0.33	0.62	0.38	0.02
Child BMI percentile					
<5	4.0 ± 0.63	3.9 ± 0.90	4.1 ± 0.39	2.8 ± 0.92	2.5 ± 0.69
5–14.9	4.2 ± 0.58	4.1 ± 0.64	4.0 ± 0.62	3.1 ± 1.1	2.9 ± 0.74
15–84.9	3.7 ± 0.85	3.6 ± 0.87	4.0 ± 0.50	2.6 ± 1.1	2.4 ± 0.82
85–94.9	3.8 ± 0.81	3.5 ± 0.98	4.1 ± 0.50	2.6 ± 1.1	2.5 ± 0.72
≥95	3.8 ± 0.81	3.4 ± 0.82	4.1 ± 0.48	2.6 ± 1.0	2.7 ± 0.95
*p**	0.20	0.04	0.32	0.49	0.22

* p value for one-way ANOVA.

whereas among non-obese mothers, it was negatively associated with child BMI z-score ($r = -0.16$, $p = 0.05$; 95% CI, −0.30 to −0.001). Control was positively associated with child BMI z-score in obese mothers ($r = 0.24$, $p = 0.007$; 95% CI, 0.07 to 0.40), but it was not significantly associated with child BMI z-score among non-obese mothers ($r = -0.07$, $p = 0.39$; 95% CI, −0.22 to 0.09).

Discussion

Summary of Main Findings

This is, to our knowledge, the first study to investigate relationships among parent feeding strategies, child eating behaviors, and both child and maternal BMI in low-income African-American preschool children. We found that maternal obesity modified the relationship between maternal feeding strategies and child BMI. Specifically, greater maternal restriction and control were both associated with greater BMI in the children of obese mothers. However, in children of non-obese mothers, maternal restriction was associated with lower BMI in children, and maternal control showed no significant association with children's BMI. Maternal pressure to eat was associated with lower BMI in children, and this relation was not modified by maternal obesity status.

Comparisons to Other Studies

In contrast to studies conducted with predominantly non-Hispanic white middle- to upper-income children (4,17–20), we did not find a positive association between restriction and child outcome (BMI z-score) in our sample overall. Similarly, we did not find a positive association between control and child BMI z-score in our sample. Only when we examined these relationships separately in obese and non-obese mothers did we find significant associations. Two recent studies, both with samples of non-Hispanic white families of higher social class than the families in our sample, found that the relationship between maternal restriction and child BMI differed according to the maternal weight status (2,25). In a prospective study of children born to obese and non-obese mothers, Faith et al. (2) showed that maternal restriction of children at 5 years of age was associated with higher BMI at 7 years of age for children of obese mothers but not for children of non-obese mothers. Similarly, in a prospective study of girls, Francis and Birch (25) showed that maternal restriction of daughters at 5 years of age was significantly related to BMI at 9 years of age for daughters of overweight mothers but not for daughters of normal-weight mothers. These findings suggest that prior studies may have underestimated the relationship between maternal restriction (or control) and child BMI by failing to separately examine groups of children according to maternal weight status. We found that the significant relationship between maternal restriction and child BMI was not modified by sex of the child, but one report has shown that this relationship may be stronger for boys than for girls (19).

As in other studies (1,2,4,17,20), we showed that mothers who pressure their children to eat tend to have leaner children. Faith et al. (2) found, as we did, that this relationship was not significantly different between boys and girls or between obese and non-obese mothers. However, one study, involving only girls, suggested that this inverse relationship might be stronger for daughters of overweight mothers than for daughters of normal-weight mothers (20).

To our knowledge, no study has shown a significant relationship between maternal weight status and maternal report of feeding style (2,20,25). Wardle et al. (6), using the same construct of maternal control used in our study, found that obese mothers showed somewhat less control over feeding.

Finally, we did not find any significant associations between maternal report of child eating behaviors and child BMI *z*-score, and we are not aware of others who have previously examined these associations. Contrary to our expectation, the heaviest group of mothers (BMI $\geq$40 kg/m^2) reported the lowest scores for child food responsiveness. It is possible that reporting bias caused the heaviest mothers to under-report their own weight and/or the level of food responsiveness in their children. Wardle et al. (5) showed that children in obese families were rated slightly higher on food responsiveness and desire to drink, as compared with their lean counterparts.

Limitations

First, this was a cross-sectional investigation; therefore, we cannot make any inferences about the causality or "direction" of the association between child BMI and maternal feeding strategies. Second, although our prevalence of children with BMI at or above the 95th percentile (13.1%) was consistent with national data from the WIC program (26), the number of children in this group ($n = 38$) may have been too small to accurately describe maternal feeding strategies for all obese children in the population from which we sampled. Third, the internal consistency values for our maternal feeding scales were lower than the values generally considered acceptable (Cronbach $\alpha \geq 70\%$) and lower than values obtained in predominantly non-Hispanic white samples (1,6,7). In their validation studies of the Child Feeding Questionnaire, Birch et al. (1) reported a different factor solution for both "pressure to eat" and "restriction" in a sample of Hispanic mothers than in two samples of non-Hispanic white mothers. In a small qualitative study of our Preschooler Feeding Questionnaire (10), we showed that African-American mothers may understand some questions about child feeding differently than we had intended (27). Thus, although our findings about the relationships between two mother-reported feeding strategies (restriction and pressure to eat) and BMI *z*-scores agreed with the findings of other studies in non-Hispanic whites, more qualitative and psychometric research could be undertaken to tailor instruments for use with the specific population under investigation.

Implications and Future Directions

Despite the fact that maternal weight status was shown to modify the relationship between maternal feeding strategy and child weight, our data suggest that there is not an obesity-promoting feeding style that is shared by obese or overweight mothers. This is the conclusion that was also made by Wardle et al. (6) in their study of mothers and preschool children in England. It is possible that the feeding style may need to interact with other environmental factors, such as the diet composition or television viewing, to increase a child's obesity risk.

From our cross-sectional data, we cannot explain why the positive association between maternal feeding strategy (restriction and control) and children's BMI was found only in obese mothers. However, as others have suggested (2,20,25), a mother's feeding behavior may be a response to her child's weight and/or eating behavior. Even by 2 years of age, children of obese mothers are more likely to be obese (28). Therefore, it is possible that obese mothers, beginning very early in the child's life, become concerned that the child is overeating or becoming overweight (29,30) and respond to these concerns by using feeding strategies that control the child's food intake.

In the setting of the current childhood obesity epidemic, those trying to help parents prevent obesity in their children want to know what feeding strategies parents should use with their young children. However, the association found between the feeding strategies of obese mothers and their children's weight could be a response to the children's increasing weight and not necessarily the cause of it.

Faith et al. (16) have suggested that restriction may be the most important strategy to test in future investigations; they recommend that such studies be conducted in different laboratories from those that have generated the data thus far and that they include ethnically diverse samples. Our study, based at Cincinnati Children's Hospital Medical Center, is one of the first projects to focus on parent feeding strategies and child eating behaviors in low-income African-American families. Given the current emphasis in the literature on the parent strategy of restriction, additional studies focused on the understudied population of low-income African-American preschoolers are warranted before recommendations for intervention are made on the basis of findings related to parental feeding strategies. Additionally, future studies should include longitudinal research designs that will allow for the testing of directional hypotheses and incorporate other assessment modalities such as direct observation. Ultimately, experimental studies of culturally informed interventions based on sound (and replicable) behavioral assessment findings and developed to change parental feeding behavior around restriction will be required to provide the needed answers.

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