



Published in final edited form as:

J Nutr Educ Behav. 2016 ; 48(7): 496–504.e1. doi:10.1016/j.jneb.2016.05.002.

A Qualitative Investigation of Parents' Perspectives about Feeding Practices with Siblings among Racially/Ethnically and Socioeconomically Diverse Households

Jerica M. Berge, PhD, MPH, LMFT¹, Amanda Trofholz, MPH, RD¹, Anna Schulte, BS¹, Katherine Conger, PhD², and Dianne Neumark-Sztainer, PhD, RD, MPH³

¹University of Minnesota Medical School, Department of Family Medicine and Community Health

²University of California Davis, Department of Human Development and Family Studies

³University of Minnesota, Division of Epidemiology and Community Health

Abstract

Objective—Little is known about parent feeding practices with siblings. Because this is a new area of research, qualitative research is needed to understand parents' perspectives about how they make decisions about feeding siblings and whether they adapt their feeding practices dependent on sibling characteristics such as weight status. The main objective of the current study was to describe parent feeding practices with siblings.

Design—Qualitative cross-sectional study with 88 parents with at least two siblings.

Setting—Parents were interviewed in their homes in Minneapolis/St. Paul Minnesota.

Participants—Parents were from racially/ethnically diverse (64% African American) and low-income households (77% earned < \$35,000/yr.).

Main Outcome Measure—Parents' perceptions of feeding practices with siblings.

Analysis—Qualitative interviews were coded using a hybrid deductive and inductive content analysis approach.

Results—Parents indicated that they used child food preferences, in-the-moment decisions, and planned meals when deciding how to feed siblings. Additionally, the majority of parents indicated that they managed picky eating by making one meal or giving some flexibility/leeway to siblings about having other food options. Furthermore, parents endorsed using different feeding practices (e.g., food restriction, portion control, pressure-to-eat, opportunities for healthful eating) with siblings dependent on child weight status or age/developmental stage.

Address for correspondence and reprints: Jerica M. Berge, PhD, MPH, LMFT, CFLE, Department of Family Medicine and Community Health, 717 Delaware Street SE, Room 425, Minneapolis, MN 55455, Voice: 612-626-3693, jberge@umn.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Financial disclosure: Authors have no financial disclosures to report.

Conflict of interest: Authors have no conflicts of interest to report.

Conclusions and Implications—Findings from the current study may inform future research regarding how to measure parent feeding practices with siblings in the home environment and the development of interventions tailored for families with multiple children in the home. Future quantitative research is needed to confirm these qualitative findings.

Keywords

Parent feeding practices; siblings; weight status; childhood obesity; qualitative

INTRODUCTION

Previous quantitative research on parent feeding practices has shown significant associations between controlling parent feeding practices (i.e., restriction; pressure-to-eat) and unhealthful dietary intake and higher weight status in children.¹⁻⁶ However, very little is known about parent feeding practices when there is more than 1 child in the home, even though it is common for school-aged children to have a sibling.⁷ In addition, very few studies (all quantitative) have examined whether parents adapt their feeding practices with siblings depending on child-specific characteristics such as, weight status (i.e., 1 child is healthy weight and 1 child is overweight vs. 2 siblings of similar weight status), age, gender, or child temperament.⁸ More evidence in this area, especially qualitative in nature, is necessary for developing future research questions and hypotheses, designing valid parent feeding practices measures, and creating family-based obesity prevention interventions for families with siblings.

Prior quantitative research examining parent feeding practices with siblings has been limited and inconclusive.⁹⁻¹¹ For example, research has indicated that parents use more food restriction feeding practices when they are concerned about the weight/size of 1 sibling, when 1 sibling is a picky eater, or when 1 sibling is heavier than the other sibling.^{9,10,12,13} Additionally, parents use more pressure-to-eat feeding practices with siblings who are less food responsive (i.e., don't respond to environmental food cues), thinner, or who eat slower.^{12,13} However, other studies have shown no significant associations between maternal feeding practices (i.e., restriction, pressure-to-eat) and sibling overweight and nonoverweight status,^{9,14} or that mothers use restrictive feeding practices with both children irrespective of their children's weight status.¹⁵ Qualitative studies are needed to help understand these inconsistent findings. Thus, the main research questions addressed in the current study are: (1) How do parents describe their approach to feeding siblings?; (2) Do parents engage in different feeding practices with siblings?; and (3) Do parents engage in different feeding practices based on child-specific characteristics (e.g., weight status, picky eating, age, gender, temperament)?

METHODS

Study Design and Population

Data for the current analysis are from a substudy called *Family Meals, LIVE!: Sibling Edition (SE)*,¹¹ which is linked to a larger study called *Family Meals, LIVE! (FML)*.¹⁶ *FML* is a mixed-methods, cross-sectional observational study designed to identify key family and

home environment factors related to child eating behaviors that increase or minimize the risk for childhood obesity. The *FML* study was guided by Family Systems Theory,¹¹ which recognizes multiple levels of familial influences (i.e., parent-, sibling-, family-level) on a child's eating behaviors. The sample consisted of children 6-12 years old (n=120) and their families from low-income and racially/ethnically diverse households in the Minneapolis/St. Paul area (Table 1).

SE followed families 1 year after baseline measures were collected for *FML*. One of the main aims of the *SE* study was to examine whether and how parents tailor their feeding practices in response to the eating behaviors of 2 siblings in the same household. Of the original 120 families who participated in *FML*, 88 families were eligible and consented to participate in *SE*. Eligibility criteria included: having a sibling between the ages of 2-18 years, the sibling living with the *FML* study child 100% of the time, and the sibling having the same parent/primary caregiver as the *FML* study child. If a family had more than 2 children living in the same home, the child closest in age to the *FML* study child was classified as “the sibling”. Data collection occurred during a home visit that lasted approximately 2 hours. Family members were consented/assented by trained research staff to participate in the study and the parent/primary caregiver completed an on-line survey and an in-depth qualitative interview. Comprehensive study procedures have been previously documented elsewhere.¹⁶ All study protocols were approved by the University of Minnesota's Institutional Review Board.

Qualitative Interview

A semi-structured interview was created to identify primary caregiver's/parent's perspectives on parent feeding practices with more than 1 child in the home. The interview script was developed based on a thorough literature review¹⁷ of the parent feeding practices literature^{1,3-5,8,18-20} and a review by experts in the field of parent feeding practices and childhood obesity. The interview script and questions were then pilot tested with parents (n=10) from a similar population as the full study sample. Research staff (n = 6), who would be carrying out the interviews in the full sample (see characteristics below), practiced using the interview script/questions in the pilot. Parents provided feedback on the interviewer's interpersonal style and on the interview questions. Based on parents' feedback, the interview questions were revised for the full sample interview.

Interviews were completed with the person in the home who identified themselves as the child's primary caregiver/parent. Interview questions included: (1) What is it like to be a parent of 2 (or more) children?; (2) How do you decide what to feed your children?; (3) With regard to feeding your children, how do you think you feed your children similarly?; how do you think you feed your children differently?; (4) How do you see your role as a parent during mealtimes with more than 1 child?; (5) How do you influence what [sibling #1; sibling #2] eats?; and (6) Sometimes parents find that they have 1 child who loves to eat and another 1 who needs to be reminded to eat, or 1 child who eats anything and another child who is pickier, or 1 child who is larger in size/weight and another child who is very lean/thin. How do you handle these situations?

Research team members conducting the interviews—Research team members included full-time research staff and research assistants who were graduate students. The interviewers represented a combination of African American, Caucasian, and Hispanic racial/ethnic groups to match participant race/ethnicity. Interviewers were trained using standardized qualitative interview protocols,²¹ including the use of follow-up questions in response to parent's answers to encourage more detailed responses. Interviewers were required to reach certification levels in qualitative interviewing skills and participate in pilot testing of the interviews before conducting participant interviews (see previous section).²¹ Research staff and research assistants (n=6) conducted all in-home visits in sets of 2.

Analysis

Audio-recorded interviews (n=88) were transcribed verbatim and coded using a deductive and inductive content analysis approach.^{22,23} This hybrid approach allowed for using a priori categories, such as research questions (deductive analysis) to guide the analysis, while at the same time allowing for themes to naturally emerge from the data (inductive analysis). Two members (2nd and 3rd authors of this paper) of the research team independently read and coded the interviews using NVivo 10 software (NVivo 10, 2014, QSR International Pty Ltd). Using open coding, the researchers read through each interview line-by-line to establish initial codes and capture key thoughts and concepts. Next, coding to reduce broad categories into subcategories was conducted and major concepts were identified. The major concepts were further defined, developed, and refined into main themes. All parent transcripts were analyzed and coded to ensure that saturation of themes occurred. During the coding process, the first 20 transcripts were coded by both coders and then consensed. Once the coders reached 95% inter-coder reliability,²⁴ every 5th interview was double coded and consensed. During consensus, both coders discussed questions in-person regarding quotes or placement of quotes in theme categories until 100% agreement was reached. A theme was counted if at least 1/3 of parents endorsed the theme.

RESULTS

Research Question 1: How do Parents Describe their Approach to Feeding Siblings?

Three main themes, with several sub-themes, were found related to parents' description of their overall feeding philosophy with siblings. Themes included: (1) how parents make decisions about how to feed siblings (sub-themes: child food preferences, planned meals, in-the moment decisions); (2) how parents control the feeding environment (sub-themes: pressure-to-eat, food restriction, providing opportunities for healthful eating); and (3) how parents manage picky eating in the home environment (sub-themes: make only 1 meal, give some leeway).

Theme 1: Decisions About How to Feed Siblings

Three sub-themes were found regarding how parents make decisions about how to feed siblings. First, parents reported that they asked siblings and other family members what they wanted to eat (i.e., food preferences). Second, parents said that they had planned meals. Third, parents stated that they decided in-the-moment what to feed siblings and family members.

Sibling food preferences—When asked how they decided what to feed their children, over 1/2 of parents stated that they either asked siblings what they wanted to eat for meals or decided to make a certain meal based on what they knew the sibling(s) already liked. One parent said, “whatever they say they like, or whatever they want to eat, that's what we're going to eat” [African American, mother, 30 yrs.]. Another parent stated,

Well, I just make what I know they will eat...because when I see them happy at the table eating, and talking with one another, it makes me feel real good inside and to hear them telling each other about what happened at school, or how they did at the game, or how the food looks, you know. It makes me feel real good to hear them. So I try to cook mostly what they like and...what I know they'll eat. And then I know that I've done what I should. [White, mother, 29 yrs.]

Planned meals—Over 1/4 of parents stated that they repeated standard meals or planned their meals ahead of time via menu planning and regular shopping when deciding how to feed siblings. One mother stated,

I make a menu when I go grocery shopping, it's a lot easier for me to shop for what I need...I make a menu for the week and that's what I go get and what the family has to eat. [White, mother, 28 yrs.]

Another mother stated,

I plan my meals and buy pretty much the same things every month...but I do try to make them funner...add a little bit more of a vegetable to it or more of a flavor to it...every month I add a little more bling to the meal that we had last month. [African American, 25 yrs.]

In-the-Moment Decisions—About 1/4 of parents stated that they made decisions about what to feed siblings spontaneously and closer to mealtimes. For example, many parents said it depended on “what was in the cupboard,” “what was in the fridge,” or “what they felt like cooking”. One mother said,

It's just kind of day-to-day, you know, sometimes it depends on what I got in the refrigerator, what's thawed, what's in the freezer, how much time we have together, so a lot of things kind of go into that choice. [African American, mother, 27 yrs.]

Another mother said,

It depends on how I'm feeling that day, and if I want to cook a lot of food, or if I just want to cook something quick and simple. It also depends on how the day was, and work was. [African American, mother 26 yrs.]

Theme 2: Food Control with Siblings

When asked how parents manage or control the feeding environment in the home with siblings, 3 themes arose. Themes included: pressure-to-eat feeding practices, restriction feeding practices, and providing opportunities for healthful eating to siblings.

Pressure-to-eat—Over 1/2 of parents reported using pressure-to-eat feeding practices with siblings. Parents reported feeling like they needed to “force”, “bribe” or “strongly encourage” siblings to eat. One parent said, “I have to force the vegetables on both of their plates” [Hispanic, mother, 31 yrs.] Another parent stated,

I always make him eat more...things that might put some meat on his bones. Same thing with her. I make sure she eats 1 serving each of meat, vegetable, and bread. And they both always have to have milk. [African American, grandmother, 55 yrs.]

Restriction—Over 1/3 of parents reported that they restricted certain foods from their children. For example, many parents restricted “sweets,” “candy”, or “high fat foods” from their children. One mother said, “I limit candy and other sweet things. And I really limit caffeine...I don't let either 1 of them have it.” [Hispanic, mother, 30 yrs.] Another mother stated,

I won't let them have seconds at dinner most of the time and never thirds...I just don't want them to eat too much or gain weight...then there will be a health problem to deal with [African American, mother, 29 yrs.]

Provide opportunities for healthful eating—About 1/4 of parents reported that they tried to create opportunities for siblings to eat healthful, rather than pressuring them to eat, or restricting certain foods from them. One mother said,

My role...is to try and make sure that they have a well-balanced meal...as long as there's like a vegetable, some bread, definitely milk and meat...that's like the most important thing to have as many food groups as possible. And then to try and make sure that they eat at least enough where I feel that they're fed. Like I'll say, ‘Are you full now?’ And I want to make sure because that's just my job. [African American, mother, 25 yrs.]

Another mother stated,

I always try to make sure that they have fresh fruits and vegetables that they will eat, you know, like carrots or celery sticks or something. So, I always try to make sure that I get things that are fresh and make sure that they are an option on the table...I also really try to go with leaner meats and make things from scratch. I try to do fewer preservatives, just because I feel like it's healthier for them. So when I shop for them, it's not just for their taste but it's also a lot for their health. [White, mother, 27 yrs.]

Theme 3: Managing Picky Eating

When asked how parents handle picky eating with siblings, 2 themes arose, including: making only 1 meal and giving leeway to siblings who were picky eaters.

Only 1 meal!—Almost 3/4 of parents stated that they did not make more than 1 meal regardless of whether siblings were picky eaters. In the majority of quotes, parents were very adamant about this point, such as, “I will not cook an extra meal” [African American, father,

30 yrs.] and “If they don't want to eat it, that's it. I'm not making anything else. They can't tell me they're hungry later.” [Hispanic, mother, 29 yrs.] Another mother said,

I can't stand the idea that anyone would prepare a whole meal and then somebody would be like, ‘Oh, I don't like this’ and then I'm supposed to be like, ‘Okay, I'll go back in the kitchen’...no, they're going to deal with what they got to eat in front of them. [African American, mother, 28 yrs.]

Some parents pointed out that the reason they only make 1 meals is because they “learned the hard way” not to do this. For example, when 1 or more sibling was a picky eater, some parents used to make multiple meals but became frustrated and/or worn out from doing this and stopped offering more than 1 option at meal times. One parent said,

We went through the mistake of...if 1 kid doesn't like something at the meal...I'm going to make you something different just to make sure that you eat something because you haven't eaten anything. Well, then number 2 wants something that's different than both meals you just brought out, number 3 also wants something totally different...I've done it before, and found out that that wasn't the best way so I don't, don't make separate meals anymore. [White, mother, 30 yrs.]

Give some leeway—About 1/4 of parents indicated that they gave more “leeway” or “flexibility” to siblings when they were picky about foods and allowed them to eat a different meal or food items. One parent said,

With certain foods there is a little more leeway, you know like vegetables. I can't make them eat them so, they have to at least try it and then they can eat something else. I don't want to seem like I'm so strict with them, like you eat it or you starve, it's not like that. [White, mother, 27 yrs.]

Another parent stated,

When they come to the meal and see what we're eating they might say, ‘No, no, Mama we hate it’ or ‘We don't want this, we'll make sandwiches’ or I'll say, ‘I'm going to make chicken. What do you guys want?’ He'll say rice and she'll say macaroni and I'll say ‘Okay, you get rice, you get macaroni and that's it.’ [African American, mother, 32 yrs.]

Research Question #2: Do Parents Engage in Different Feeding Practices with 2 Siblings?

When parents were asked whether they used different parent feeding practices with siblings, 2 themes emerged, including: parents agreed that they fed siblings differently and parents disagreed that they fed siblings differently.

Theme 1: Feed Siblings Differently

Over 1/2 of parents stated that they thought they approached feeding practices with siblings differently. One grandparent said,

I appreciate how each of them is different. I know they're individuals. And they have certain food tastes and I try to honor that because of the fact that we think that

children are sacred...And what you put into them is a lot to do with their spirituality...And so I try my best to explain the things that I'm making for them, and where it comes from, and how it is okay that they each prefer different foods. [Native American, grandmother, 65 yrs.]

One parent stated,

It's overwhelming having 2 kids, because they like 2 different things...if I prepare something that neither 1 of them likes, that means I have to go through and say 'What do you want? and What do you want?' That means preparing a different meal for both of them...and I usually do. [White, mother, 24 yrs.]

Theme 2: Feed Siblings Similarly

Almost 1/2 of parents said that they didn't change their feeding practices with siblings, rather, they fed them similarly. One father said,

I try to treat them the same...like I try not be so gender-specific, like old school like, 'You're the boy, so you do this. You're the girl so you do this.' I try to be more like 'Whatever you're doing is cool' and if they're playing dolls together or whatever or if they're tumbling or wrestling, it's fine, just do whatever feels like you want to do it. This is the same for eating. I don't think there is any reason to feed them differently. [White, father, 35 yrs.]

Research Questions #3: Do Parents Engage in Different Feeding Practices Based on Child Characteristics (e.g., weight status, picky eating, age, gender)?

Of the parents who reported feeding siblings differently (above), about 3/4 of those parents endorsed adjusting their parent feeding practices depending on child characteristics. Themes included: (1) food restriction or portion control when 1 of the siblings was overweight/obese, (2) pressure-to-eat feeding practices when 1 sibling was healthy weight, (3) no adjusting of feeding practices based on sibling weight status, and (4) tailoring feeding practices by age or developmental stage of the sibling.

Theme 1: Adjust Parent Feeding Practices Based on Sibling Weight Status

Restriction or portion control feeding practices—About 1/3 of parents endorsed restriction or controlling feeding practices when 1 sibling was larger in weight/size than the other sibling. One mother said,

I'll say to the bigger child, 'That's enough. You already have 2 plates already. So you're done.' Even though I know he wants more because he'll say, 'I notice we have more...' I'm like, 'No, buddy, you already have enough. You have plenty. Trust me. You have plenty.' [African American, mother, 33 yrs.]

One father said,

It's tricky and it's caused some issues, because John loves to eat and when he was younger...there was a little bit of concern that if we were to allow him to just eat the way he wanted to, that he would become obese. I mean, I'm not saying he was, but you know he had a little chub and that was fine but I was like if we let him, he

would just eat and eat and eat and eat. So we would not let him have thirds or whatever. Whereas, if Joe would have wanted thirds, we would have let him, because he's always really thin. [Mixed race, father, 37 yrs.]

Pressure-to-eat feeding practices—About 1/3 of parents identified that they used pressure-to-eat feeding practices when trying to encourage the healthy weight sibling to eat. For example, 1 mother said,

Now the other 1 [sibling], he's 6 and he's a bone so we force him to eat...so that's kind of weird, we tell the 1 [larger] to slow down and the other 1 [smaller] to eat more. [African American, mother, 29 yrs.]

Another parent stated,

Well, Jacob's the skinny 1...we're just like, 'All right, you know, you got to eat, you're too skinny, like we can put our hands around your waist' and stuff like that. We say 'Eat, eat.' [African American, mother, 26 yrs.]

Theme 2: No Adjusting of Parent Feeding Practices by Sibling Weight Status

About 1/4 of parents stated that they did not adjust their parent feeding practices based on sibling weight status. One main reason for this decision was because parents thought it would make the sibling who was overweight feel bad. One mother said,

I wouldn't change how I feed her because she's overweight...I don't want her to think that there's anything wrong with how she is. I think she's perfect...we do things together in this house. So if 1 person is struggling in an area, that means that all of us are going to struggle with it...so we'd take it on as a family and cut back on what we all eat. [White, mother, 25 yrs.]

Another parent stated,

No, I would never do that to any of them [children]...overweight or whatever, I would not want to make it a point where they would feel like I was feeding them different, you know what I mean? [African American, mother, 30 yrs.]

Theme 3: Adjust Parent Feeding Practices According to Sibling Age/Developmental Stage

About 1/3 of parents reported that they adjusted their parent feeding practices based on sibling's age or developmental stage. One parent stated, "because of their age difference, I will usually give Sam more food than I give Ryan." [White, mother, 24 yrs.]

Another parent said,

I kind of just limit their portion size, depending on their age or development...so, I'll give 1 kid a smaller amount because they are younger...if they are older they need to eat more. [Hmong, mother, 33 yrs.]

DISCUSSION

Results from the current study support and extend prior limited research on parent feeding practices with siblings.⁹⁻¹¹ First, study findings support prior research by showing that parents adjust their feeding practices depending on the weight status of the sibling.¹¹ Parents in the current study stated that they used food restriction when 1 sibling was overweight and pressure-to-eat feeding practices when 1 sibling was healthy weight. Given previous research showing harmful associations between restrictive and pressure-to-eat feeding practices and child weight and weight-related behaviors,¹⁻³ it may be important to develop interventions that teach parents with multiple children appropriate alternatives to these controlling feeding practices, such as providing opportunities for healthful eating (see below).

Second, findings extend previous parent feeding practices research with siblings by showing that parents report engaging in feeding practices that “provide opportunities for healthful eating”. Research in the nutrition field has shown that having more healthful food available and accessible in the home environment increases child intake of healthful food.²⁰⁻²¹ The current study finding both supports the importance of having healthful food available and accessible in the home environment and extends this previous research by suggesting that this may be a new type of parent feeding practice.

Results of the current study also extend prior research on feeding practices with siblings by identifying ways in which parents respond to picky eating with siblings. The majority of parents stated adamantly that they make only 1 meal for their children, regardless of whether 1 or both of the siblings were picky eaters. This finding may suggest that when there are multiple children in the home, parents are more likely to set limits on how many meals they make because of the logistics of being able to carry out family meals.

When interpreting the results of the current study it is also important to consider limitations. One limitation of the study was that the majority of parents were mothers. It would also be useful to identify father's perspectives of feeding practices in the home environment with siblings. This would potentially allow for examining differences between parent feeding practices in homes with single- versus 2-parent households. In addition, while the current study included parents from diverse racial/ethnic groups, some groups were underrepresented (e.g., Hispanic, American Indian).

IMPLICATIONS FOR RESEARCH AND PRACTICE

Overall, findings from the current study have the potential to inform: (1) the measurement of parent feeding practices with siblings, (2) the creation of new research questions and hypotheses to be used in studies with siblings, and (3) the development of tailored interventions targeting parent feeding practices with multiple children in the home. First, findings from the qualitative themes in the current study could be used to develop measures of parent feeding practices for households with siblings. One example would be to create questions about tailoring parent feeding practices dependent on sibling weight status. Understanding how parents tailor their parent feeding practices dependent on sibling

concordant or discordant weight status will inform childhood obesity interventions and clinical practice with families with siblings. Additionally, examining whether “providing opportunities for healthful eating” is a new type of parent feeding practice, separate from restriction or pressure-to-eat feeding practices, and whether this type of feeding practice is specific to having more than 1 child in the home would be useful for future research to explore and would advance the field. Furthermore, examining differences in parent feeding practices with siblings across different racial/ethnic groups would be a key next step in the research for developing tailored interventions for family-based research.

Acknowledgments

Funding Source: Research is supported by grant number R56HL116403 from the National Heart, Lung, and Blood Institute (PI: Jerica Berge) and by grant number R21DK091619 from the National Institute of Diabetes, Digestive and Kidney Disease (PI: Jerica Berge). Content is solely the responsibility of the authors and does not necessarily represent the official views of the National Heart, Lung and Blood Institute, the National Institute of Diabetes, Digestive and Kidney Disease or the National Institutes of Health.

References

- Loth KA, MacLehose RF, Fulkerson JA, Crow S, Neumark-Sztainer D. Food-related parenting practices and adolescent weight status: a population-based study. *Pediatrics*. May; 2013 131(5):e1443–1450. [PubMed: 23610202]
- Loth KA, MacLehose RF, Fulkerson JA, Crow S, Neumark-Sztainer D. Eat this, not that! Parental demographic correlates of food-related parenting practices. *Appetite*. 2013; 60(1):140–147. [PubMed: 23022556]
- Loth KA, MacLehose RF, Fulkerson JA, Crow S, Neumark-Sztainer D. Are food restriction and pressure-to-eat parenting practices associated with adolescent disordered eating behaviors? *The International journal of eating disorders*. Apr; 2014 47(3):310–314. [PubMed: 24105668]
- Birch LL, Fisher JO. Mothers’ child-feeding practices influence daughters’ eating and weight. *American Journal of Clinical Nutrition*. 2000; 71:1054–1061. [PubMed: 10799366]
- Birch LL, Fisher JO, Davison KK. Learning to overeat: Maternal use of restrictive feeding practices to promote girls’ eating in the absence of hunger. *American Journal of Clinical Nutrition*. 2003; 78:215–220. [PubMed: 12885700]
- Fisher JO, Mitchell DC, Smiciklas-Wright H, Birch LL. Parental influences on young girls’ fruit and vegetable, micronutrient, and fat intakes. *Journal of the American Dietetic Association*. 2002; 102:58–64. [PubMed: 11794503]
- Census. *Census Data for 2010*. 2010
- Birch LL, Davison KK. Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatric Clinics of North America*. 2001; 48:893–907. [PubMed: 11494642]
- Berge JM. A review of familial influences on child and adolescent obesity: What has the 21st Century taught us so far? *International Journal of Adolescent Medicine and Health*. 2010; 21(4): 546–561.
- Costanzo P, Woody E. Domain-specific parenting styles and their impact on the child's development of particular deviance: The example of obesity proneness. *Journal of Social and Clinical Psychology*. 1985; 3(4):425–445.
- Berge J, Tate A, Maclehose R, Trofholz A, Conger K, Neumark-Sztainer D. Sibling Eating Behaviors and Parent Feeding Practices with Siblings: Similar or Different. *Public Health Nutrition*. in press.
- Keller K, Pietrobelli A, Johnson S, Faith M. Maternal restriction of children's eating and encouragements to eat as the ‘non-shared environment’: A pilot study using the child feeding questionnaire. *International Journal of Obesity*. 2006; 30:1670–1675. [PubMed: 16568136]

13. Farrow C, Galloway A, Fraser K. Sibling eating behaviours and differential child feeding practices reported by parents. *Appetite*. 2009; 52(2):307–312. [PubMed: 19056439]
14. Wardle J, Sanderson S, Guthrie CA, Rapoport L, Plomin R. Parental feeding style and the intergenerational transmission of obesity risk. *Obesity Research*. 2002; 10(6):453–462. [PubMed: 12055321]
15. Saelens BE, Ernst MM, Epstein LH. Maternal child feeding practices and obesity: A discordant sibling analysis. *International Journal of Eating Disorders*. 2000; 27(4):459–463. [PubMed: 10744853]
16. Berge JM, Rowley S, Trofholz A, et al. Childhood obesity and interpersonal dynamics during family meals. *Pediatrics*. Nov; 2014 134(5):923–932. [PubMed: 25311603]
17. Spruijt-Metz D. A Review of Theories and Models Used in Adolescent Health Research and Education. Manuscript.
18. Berge JM. A review of familial correlates of child and adolescent obesity: what has the 21st century taught us so far? *International Journal of Adolescent Medicine and Health*. Oct-Dec;2009 21(4):457–483. [PubMed: 20306760]
19. Loth KA, MacLehose RF, Larson N, Berge JM, Neumark-Sztainer D. Food availability, modeling and restriction: How are these different aspects of the family eating environment related to adolescent dietary intake? *Appetite*. Jan 1.2016 96:80–86. [PubMed: 26327222]
20. Birch LL, Ventura AK. Preventing childhood obesity: what works? *International Journal of Obesity*. Apr; 2009 33(Suppl 1):S74–81. [PubMed: 19363514]
21. Crabtree, B.; Miller, W. *Doing qualitative research*. Vol. 3. Sage Publications; Newbury Park, CA: 1992.
22. Elo S, Kyngas H. The qualitative content analysis process. *Journal of Advanced Nursing*. Apr; 2008 62(1):107–115. [PubMed: 18352969]
23. Miles, MB.; Huberman, AM. *Qualitative data analysis: An expanded sourcebook*. Sage; 1994.
24. Miles, M.; Huberman, AM. *Qualitative Data Analysis*. 2nd ed.. Sage Publications; Thousand Oaks, CA: 1994.

Table 1

Sociodemographic Characteristics of Parents and Siblings in the Sibling Edition Study

	Parent n (%)	Target Child n (%)	Sibling n(%)
	N=88	N=88	N=88
Sex			
Female	83 (94)	41 (47)	49 (56)
Male	5 (6)	47 (53)	39 (44)
Mean (sd) Age in Years	34 (7)	9 (2)	9 (4)
Weight Status			
Overweight (adult ≥ 25 BMI/children ≥ 85%ile)	72 (82)	46 (52)	36 (42)
Healthy Weight (adult < 25 BMI/children < 85%ile)	15 (17)	42 (48)	50 (58)
Race			
Black/African American	56 (64)	60 (68)	61 (69)
White	16 (18)	8 (9)	8 (9)
American Indian or Alaskan Native	3 (3)	4 (4.5)	4 (4.5)
Asian	4 (5)	4 (4.5)	4 (4.5)
Mixed/Other	9 (10)	12 (14)	11 (13)
Employment Status			
Full Time	25 (28)	--	--
Part Time	18 (21)	--	--
Stay-at-home Caregiver (intentional)	10 (11)	--	--
Unemployed, Seeking Work	16 (18)	--	--
Not Working	9 (22)	--	--
Annual Household Income			
< \$20,000	45 (52)	--	--
\$20,000 - \$35,000	22 (25)	--	--
\$35,000 - \$50,000	9 (9)	--	--
\$50,000 - \$75,000	9 (9)	--	--
\$75,000+	3 (5)	--	--

*Weight status is missing for two siblings (n=2) and one parent (n=1)

Table 2

Additional Quotes Organized by Research Question and Theme from the Qualitative Analysis of Sibling Edition Study Interviews

Theme	Example Quotes *
Research Question 1: How do Parents Describe their Approach to Feeding Siblings?	
Theme 1: Decisions About How to Feed Siblings	
Sibling Food Preferences	<p>I'll say, 'what are you guys feeling like for dinner?' ... 'what would you like me to pick up at the grocery store' and they might say, 'I'm feeling like sandwiches' and I'll buy according to what they are saying. [White, father, 27 yrs.]</p> <p>I just go off of the food that they like, the stuff that I know they will eat the most of. If I notice some food is gone, and I just got it, that's the stuff I want to make sure I fix more of because I know they'll eat it and you know I won't have to worry about throwing away wasted food, yeah. [African American, mother, 32 yrs.]</p> <p>There's usually stuff on the table that I know they will eat. I think I kind of cater to everybody in the family when I cook. So I think Walter's food choices or Bai's food choices, mine or Serena's all kind of impact what I cook—I try to make sure that there's something that I know everyone is going to like. [White, father, 30 yrs.]</p>
Planned Meals	<p>Monday through Friday I make a list of what we will eat. Then I go shopping and we eat it for dinner... we always stick to it [the menu]. [White, mother, 27 yrs.]</p> <p>I pick out a meal that we're going to have the night before and during the week I shop each day for what I'm going to cook, and I'll just cook it, and I really don't have no complaints about what I cook for them, really because I think we all like the same things. [African American, mother, 29 yrs.]</p>
In-the-Moment Decision	<p>Whatever we feel like, yeah. I just want them to eat, first of all. I would like it to be something simple because I have to cook it, you know... we don't sit down and plan our meals for the week, we don't discuss what we are going to eat today. I still got to go to work, you know, it's a lot, and I have a boyfriend who don't eat nothing either. It's very chaotic. [Hispanic, mother, 35 yrs.]</p> <p>I don't decide [what to cook]. Whatever I'm in the mood to cook, I just cook. I don't decide nothing. If I want to cook at home, I'll cook at home or I'll be like, 'I want to go out to eat. What do you all want?' [African American, mother, 32 yrs.]</p>
Theme 2: Food Control with Siblings	
Pressure-to-Eat	<p>I do try to force the milk, but they don't like milk. So I've kind of switched... trying to get them interested in chocolate milk, see if that will work. It works sometimes, sometimes it doesn't. [Hmong, mother, 31 yrs.]</p> <p>If my kids eat something that's not healthy, like a Hershey bar and then they have to eat a banana or something like that. [African American, father, 37 yrs.]</p>
Restriction	<p>They only get to eat sugar cereal on the weekends because during the week they need to eat their pancakes and sausages, you know... stuff that's fulfilling... so they get their Frosted Flakes on the weekends. [African American, mother, 25 yrs.]</p> <p>They only get milk or juice with each meal and then in between it's water. [White, mother, 33 yrs.]</p>
Provide Opportunities for Healthful Eating	<p>Well, whatever I cook I try to put you know some type of fruit or vegetable with it, just a basic balanced meal from the basic food groups. A meat, a vegetable, some type of starch, a salad maybe and some bread. [African American, mother, 26 yrs.]</p> <p>I guess I would just say more guidance kind of thing. I mean I don't, unless I see a problem, you know I don't feel I need to do anything other than like I say provide good choices. [White, mother, 28 yrs.]</p>
Theme 3: Managing Picky Eating	
Cook Only One Meal!	<p>I'm the cook—I usually spend about an hour and a half in the kitchen making dinners so it comes to the point if you're not going to eat it, I'm not going back in there. [African American, father, 29 yrs.]</p> <p>They have to eat what we cook because if we let them, you know, slide or we cook a separate dish than they'll do that every time... we're pretty stubborn on that too. We just tell them flat out, this is what we made for dinner or lunch or breakfast, and you're going to have some. [White, mother, 33 yrs.]</p>

Theme	Example Quotes *
	They all eat the same thing now. I used to make different meals for the kids but it took too much time and was really stressful for me... No, we don't do that, not anymore, not no 5 different meals going on. [African American, mother, 23 yrs.]
Give Some Leeway	Sometimes it happens, they're like, 'Mom, I really don't like that.' I'll say, 'this is dinner. You're going to be hungry. You need to eat at least 5 or 6 bites of something then you can make a sandwich or have a bowl of cereal.' [African American, mother, 28 yrs.]
	Ashley doesn't like corn, so we're going to have broccoli tonight, but Andy doesn't like tuna casserole so we'll have another kind of casserole you know... I'll kind of cater to that... make at least one thing each one will like. [White, mother, 32 yrs.]
Research Question #2: Do Parents Engage in Different Feeding Practices with Two Siblings?	
Theme 1: Feed Siblings Different	
	Yes, I feed them different because they have different personalities and food preferences... when we have tacos, Danny doesn't like his with cheese, or the lettuce or the tomato. So he's just more or less eating a taco shell and meat. And Raymond, he likes everything... it's work, but it's a lot of fun work, you know, and I just like to see them happy eating... it does my heart good, yeah. [African American, mother, 24 yrs.]
	There is no reason to feed them different... they need to eat the same kinds of food, so there is no excuse to feed them different meals. [African American, 39 yrs.]
Theme 2: Feed Siblings Similar	
	Overall, I think I treat them both the same... If I make something new and one doesn't like it... I tell them both, at least try it. So one will say, 'Oh, why did Tim have to eat it all, now I have to eat it too.' [African American, 37 yrs.]
	I think one thing is you just got to make them all, you know when you tell them to eat, you got to talk to them like they're all on the same page. Because if you let Trevor slide, or Anthony slide, then the other kids they don't eat as much, or want to eat more. [Hispanic, mother, 30 yrs.]
Research Questions #3: Do Parents Engage in Different Feeding Practices Based on Child Characteristics (e.g., weight status, picky eating, age, gender)?	
Theme 1: Adjust Parent Feeding Practices Based on Sibling Weight Status	
Restriction and portion control feeding practices	I fix Max's plates because he will overeat, especially anything that's fried... he loves certain textures and fried foods like chicken. If you do not watch him, he will overeat it... So you actually have to watch him and make sure he don't sneak back in the kitchen, because he'll sneak back in the kitchen... I don't let him go back for thirds... because then it will be that chicken. I just say, 'cut it out, no, you can't have it. You're not getting thirds. If you want some more, you got to wait. If it's leftovers, you get it in the morning before you go to school but you're not getting no more tonight. It's done. Dinner is done. You can drink some water, eat a piece of fruit, that's it.' You know, once it's done, it's done. You don't get no more. [African American, mother, 33 yrs.]
	She eats more than her sister. I try to cut her down. But sometimes she waits until I go somewhere and then she will eat. The hard part is that I get really mad because she thinks that I don't love her, but I worry about her weight because her weight is 2 times bigger than all of us. She's 150 pounds and it's hard for me to kind of watch her like that. [African American, mother, 35 yrs.]
	We do try to portion foods for Jerome because he's a little on the heavier side so we will pretty much cut him off... I feel bad because you know, I know he still wants to eat, but then you know he's had plenty already, because if he's eating as much as I am... then you know that's not good. The first bowl or plate that we give to him, we usually portion out for him. And you know, he has that look, like he wants some more... we usually have to cut him off, for his own good. [African American, mother, 31 yrs.]
Pressure-to-eat parent feeding practices	She's tiny, you know. I tell her, 'Eat more. And drink more milk. You're tall and you will grow more.' I always try to encourage her [the smaller sibling]. Even if she says she's not hungry, I'll just be like 'Well, just eat a little bit.' [White, father, 38 yrs.]
	I say, 'Eat something! Eat something! No, you need to eat it, eat it all.' Because I don't think she eats enough, it's just little bits... and she is too skinny compared to her sister. [Hmong, mother, 34 yrs.]
Theme 2: No Adjusting of Parent Feeding Practices by Weight Status	

Theme	Example Quotes *
	I don't feed my children differently... I just, you know... I let them eat until they're full, as long as I can actually see they're not overdoing it. [White, mother, 36 yrs.]
	One is bigger and one is smaller, you can see my youngest is kind of healthier than my oldest daughter, but I don't feed them no different. [African American, mother, 29 yrs.]
	If one was bigger than the other one and I feel that she eat too much, you know, I wouldn't say nothing to her... or feed her differently. [White, mother, 33 yrs.]
	Theme 3: Adjust Parent Feeding Practices According to Sibling Age/Developmental Stage
	I'll give Jeffery a little smaller portions than Harvey because he's younger, and then if they are still hungry, they're welcome to get some more. And if they're not, they don't. [White, mother, 35 yrs.]
	No, Natalie, she eats way smaller than the older two because she is younger... I feed her smaller amounts too because she is younger and doesn't need as much of them [older siblings]. [African American, mother, 36 yrs.]
	But you know I try to keep the portion sizes under control, like I said, paying attention to when they're having growth spurts. [White, mother, 36 yrs.]
	I give them all portions that I know will match their age. [Native American, mother, 32 yrs.]

* All names have been changed to protect participant confidentiality.