



A qualitative exploration into momentary impacts on food parenting practices among parents of pre-school aged children

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ABSTRACT

Food parenting practices have been identified as a potentially significant correlate of weight status and weight-related behaviors in children. The extent to which food parenting practices fluctuate across time and context is not well known. In particular, situational factors are thought to shape the types of food parenting practices used in the moment, but the nature of those factors remain unclear. In this paper data from interviews with parents ($n = 40$) of preschoolers was used to: 1) describe parents' day-to-day lived experiences of food parenting within the broad theoretical domains of coercive control, structure and autonomy support; 2) identify salient momentary factors that influence use of these food parenting practices; and 3) understand how these momentary factors impact the use of different types of food parenting practices. The feeding practices described by parents align well with the three overarching themes described within the literature: coercive control, autonomy support, and structure. Parents described using a combination of practices from within each of these domains; they also indicated that their feeding practices were easily influenced by momentary factors that impacted their food parenting within and across eating occasions. For the most part, parents described momentary factors (e.g. schedule changes, parental stress, child behavior) that shifted them away from structure and autonomy support feeding practices, towards indulgent and coercive feeding practices. Researchers should be aware of the likely interplay between different types of feeding practices as well as the potential that momentary factors may shift parents from one type of practice towards another. The use of novel data collection methods, such as ecological momentary assessment, that allow for exploration of food parenting practices as dynamic, rather than static, behaviors should be explored.

1. Introduction

There is a growing body of evidence that the family environment plays an integral role in child dietary intake and weight status (Berge, Wall, Larson, Loth, & Neumark-Sztainer, 2013, 2012; Birch & Davison, 2001; Burgess-Champoux, Larson, Neumark-Sztainer, Hannan, & Story, 2009; Cromley, Neumark-Sztainer, Story, & Boutelle, 2010; Cullen et al., 2001; Gable & Lutz, 2000; Kitzman-Ulrich et al., 2010; Kral & Rauh, 2010; Loth, MacLehose, Larson, Berge, & Neumark-Sztainer, 2016). Specifically, food parenting practices have been identified as a potentially significant correlate of weight status and weight-related behaviors in young people (Loth, Fulkerson, & Neumark-Sztainer, 2014a, 2014b, 2016, 2013a; Faith, Scanlon, Birch, Francis, & Sherry, 2004; Vaughn et al., 2016). Although experts generally agree that food parenting practices are goal-directed behaviors sensitive to

circumstance (Birch et al., 2001; Faith et al., 2004; Vaughn et al., 2016), the extent to which food parenting practices are static or fluctuate across time or context is not well characterized. Current theory, based on the extant literature (Faith et al., 2004; Vaughn et al., 2016), recently outlined in a content map developed by Vaughn and colleagues (Vaughn et al., 2016), posits that food parenting practices fall under the broad dimensions of coercive behaviors, such as food restriction and pressure-to-eat, structural behaviors, such as limit setting, rules and routines, and support behaviors, such as encouragement and nutrition education, and are associated with child weight and weight-related behaviors (Berge et al., 2013, 2012; Birch & Davison, 2001; Burgess-Champoux et al., 2009; Cromley et al., 2010; Cullen et al., 2001; Gable & Lutz, 2000). While specific feeding practices reflecting each dimension have been proposed, the extent to which these concepts are salient in parents' day-to-day experience of feeding children is unclear. Vaughn

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and colleagues (Vaughn et al., 2016) called for researchers to test and refine the components within their proposed content map, acknowledging that only some of the parenting practices described in the map have been adequately researched (e.g. food restriction, food availability) while many proposed constructs are largely theoretical and have limited empirical support (e.g. food preparation, child involvement) (Vaughn et al., 2016; Yee, Lwin, & Ho, 2017). Further, Vaughn and colleagues indicate that while their content map was designed to represent conceptually distinct constructs that, some of the finer distinctions may or may not be useful in the design of clinical recommendations or public health interventions (e.g. availability and accessibility or reasoning and nutrition education).

Further, to date, most survey-based studies have focused primarily on parents' "usual" use of specific food parenting practices that fall under these dimensions (Birch et al., 2001; Vaughn et al., 2016), failing to account for potentially important differences across shorter time frames (within- or between-day) or across contexts. For example, a parent might report via survey their "usual use" of coercive food parenting practices is low or infrequent, but there might be specific circumstances in which they might engage in coercive food parenting practices with much greater frequency or at a much higher level. Reliance on a parent's report of "usual use" of food parenting practices is the norm within the literature to date, but overlooks the working theory that use of specific food parenting practices is context specific.

Further, while research suggests that sociodemographic (e.g., food insecurity, limited economic resources) (Bauer et al., 2015; Fisher et al., 2013; Herman, Malhotra, Wright, Fisher, & Whitaker, 2012; Hughes et al., 2006; Loth, MacLehose, Fulkerson, Crow, & Neumark-Sztainer, 2013a, 2013b; Malhotra et al., 2013; Murashima, Hoerr, Hughes, & Kaplowitz, 2012; Powers, Chamberlin, van Schaick, Sherman, & Whitaker, 2006) and personal (e.g., health/weight concerns) (Birch and Davison, 2001; Birch, Fisher, & Davison, 2003; Birch & Fisher, 2000; Birch; Cutting, Fisher, Grimm-Thomas, & Birch, 1999; Davison & Birch, 2001; Francis & Birch, 2005; May et al., 2007; Ventura & Birch, 2008) characteristics are associated with the use of specific food-related parenting practices, it is largely unknown how factors that fluctuate across time or context (herein referred to as momentary factors) might contribute to within- or between-day differences in use of food parenting practices. Examples of momentary factors that might impact the way a parent interacts with a child around food include parent or child mood, physical location, or competing priorities (e.g. other children, job requirements); it is easy to imagine how a parent might shift their approach to feeding day-to-day or moment-to-moment, based on changes to these momentary factors. In fact, two recent publications by Berge et al., utilizing ecological momentary assessment (EMA) methods, found that momentary parental stress and mood, played a salient role in the use of coercive food-related parenting practices (Berge et al., 2017; Berge et al.); higher parental stress and greater depressed mood earlier in the day were found to predict greater use of pressure-to-eat feeding behaviors later the same evening. Long term, developing an understanding of momentary factors that influence a parent's use of particular food-related parenting practices across multiple contexts will facilitate the development of improved measures of the use and impact of food-related parenting practices, as well as effective interventions aimed at promoting the use of appropriate food-related parenting practices. For example, if parental stress level is consistently identified as a salient momentary factor in the use of coercive food-related parenting practices, stress management could be addressed as part of an obesity intervention aimed at reducing the use of coercive practices. Filling this critical gap in the body of research on food-related parenting practices is a necessary next step toward developing comprehensive recommendations for clinicians and parents to promote a healthy weight among pre-school aged children. Qualitative research lends itself well to understanding more comprehensively parents' experiences of momentary factors that may influence the food parenting environment.

Thus, the research described in the current paper used in-depth

qualitative interviews with parents of preschool aged children to achieve the following three aims: 1) to describe parents' day-to-day lived experiences of food parenting within broad theoretical domains outlined by Vaughn: coercive control, structure and autonomy support, 2) to identify salient momentary factors that influence the use of these food-related parenting practices, 3) and to understand how momentary factors impact the use of different types of food parenting practices. This work advances the theoretical work of Vaughn and colleagues by providing empirical evidence of the extent to which food-parenting constructs outlined in their conceptual model are useful in practice and present in the descriptions of parents' day-to-day experiences of feeding. Further, findings will lead to hypothesis generation about food parenting as a context specific construct and help us to recognize the salient momentary factors that impact parents' use of particular food parenting practices. The current qualitative exploration was conducted with parents of pre-school aged children as children this age spend considerable time with their parents and food-parenting practices are known to have a significant impact on the food preferences and dietary intake of children at this young age (Birch & Fisher, 1998; Birch, 1998a, 1998b, 1999).

2. Methods

2.1. Study design and population

The current qualitative research is an ancillary study to Project EAT (Eating and Activity in Adolescents and Young Adults) a large, population-based cohort study on eating and weight-related health (Berge, Trofholz, Schulte, Conger, & Neumark-Sztainer, 2016; Watts, Berge, Loth, Larson, & Neumark-Sztainer, 2017). Survey data collected from 1830 young adults [Mean age 31.3 years (SD:1.5)] as a part of EAT-IV were utilized to identify potential qualitative interview participants that met the inclusion criteria; young adults who indicated on the EAT-IV survey that they had at least one child aged 2–5 years who lived with them at least 50% of the time were invited by email to participate in qualitative interviews in batches of 20. Sample extensiveness (Sobal, 2001) was judged to be adequate when the recruitment of new participants provided few additional insights and theoretical saturation was reached (Strauss & Corbin, 1994). Recruitment emails indicated that the study goal was to learn more about parents' experiences feeding their pre-school aged child and the factors influencing choices made about feeding. Recruitment was primarily conducted by email with some follow-up phone calls. Interested participants were scheduled to complete a semi-structured interview in-person or via phone if the participant did not live locally or had another reason that meeting in person would be challenging (e.g. primarily childcare issues).

Project EAT study participants self-reported their age and ethnicity/race on the original school-based survey. On the EAT-IV survey participants self-reported their sex, income, employment status, and educational attainment, in addition to the number of children, their ages and their current custodial arrangement. Interview participants were more likely to be female, white, and have greater access to economic resources (e.g., education, income) than the full Project EAT-IV study cohort (Additional details are in Table 1).

2.1.1. Data collection

For the current study, researchers trained in standardized interview protocols (Crabtree & Miller, 1992) conducted semi-structured interviews with parents (n = 40) with the goals to 1) describe parents' day-to-day lived experiences of food parenting, 2) identify salient momentary factors that influence use of these food parenting practices, and 3) understand how momentary factors impacted parents' use of particular food parenting practices. Interview questions were informed by the food-related parenting practice literature and designed to inquire broadly about the home food environment [e.g., food-related patterns, routines, and rules; home food availability/accessibility], as well as

Table 1
Demographic characteristics of study participants: EAT IV Parent Sample and Qualitative Interview Sample.

	EAT IV Parent Sample ^a	Interview Sample ^b
	N = 512	N = 40
	Mean (SD)	Mean (SD)
Age	31.3 (1.5)	31.2 (1.41)
Gender		
Male	37.7 (193)	27.5 (11)
Female	62.3 (319)	72.5 (29)
Race/Ethnicity	% (N)	% (N)
White	69.5 (351)	80.0 (32)
Black	6.5 (33)	2.5 (1)
Hispanic	3.8 (19)	5 (2)
Asian	14.9 (75)	5 (2)
Mixed/Other	5.3 (27)	5 (2)
Income		
Less than \$34,999	13 (66)	10 (4)
\$35,000-\$49,000	12.4 (63)	15 (6)
\$50,000 - \$74,999	23.8 (121)	15 (6)
\$75,000 - \$99,999	21.3 (108)	20 (8)
100,000 or more	29.5 (150)	40 (16)
Employment Status		
Working full time	71.3 (365)	67.5 (27)
Working part time	11.3 (58)	22.5 (9)
Stay at home caregiver	14.3 (73)	10.0 (4)
Not working for pay, other	3.16 (14)	-
Educational Attainment		
High school or less	25 (133)	10.0 (4)
Technical school	13.7 (70)	7.5 (3)
Associate's Degree	13.9 (71)	10.0 (4)
Bachelor's Degree	33.7 (172)	45.0 (18)
Graduate Degree	13.1 (67)	27.5 (11)
Number of Children		
1	20.6 (105)	25.0 (10)
2	47.0 (240)	50.0 (20)
3	21.9 (112)	15 (6)
4+	10.5 (54)	7.5 (3)
Relationship Status		
Single, casually dating	5.7 (29)	5 (2)
Committed relationship	15.8 (78)	12.5 (5)
Married, Domestic Partner	80.0 (393)	82.5 (33)
Domestic Partner	82.9 (407)	-

Note: Numbers differ slightly throughout this table due to missing responses from participants at EAT-IV.

^a Participants (N = 492) for the current quantitative analysis included individuals who completed the Project EAT survey at EAT I and EAT IV, and reported at EAT IV that they had least one child aged 2–5 that lived with them at least fifty percent of the time.

^b Participants (N = 40) in the qualitative interviews were recruited from the Project EAT IV sample; to be eligible to complete an interview individuals were required to have at least one child aged 2–5 that lived with them at least fifty percent of the time.

about what influenced the home food environment in the homes of the families interviewed [e.g., (Overall: parents goals/aspirations, cooking skills, financial limitations) (Momentary: time, stress, mood)]. Semi-structured interview questions relevant to the current analysis are included in Table 2; this interview guide included broad, open-ended questions with optional prompts to assist with engaging participants as needed.

The semi-structured interview guide was first piloted with two content area experts, three graduate students, and four parents of children aged 2–5 to make sure questions were clear, elicited in-depth discussion, and were acceptable to participants; feedback from pilot testing was used to modify the wording, content and order of interview questions. Interviews were conducted by one of four trained female research staff members (Crabtree & Miller, 1992), including the study PI (first author). All four interviewers were trained by the study PI according to the protocols of Kreuger (Krueger & Casey, 2014); none

Table 2
Semi structured Interview Guide.

- For this first set of questions I am interested in learning more about how you feed your child. Remember, there are no right or wrong answers, please feel free to provide me with as much detail as you feel comfortable with as we work through each question.*
- 1) To start out, can you tell me a little bit about how meals and snacks look for your child? For example, I am interested in learning ...
 - How often your child eats meals/snacks?
 - Who they are with when they eat meals/snacks?
 - 2) When do you feed your child a meal/snack?
 - Who decides if it is time for a meal/snack?
 - If it is you, how do you decide?
 - What if your child asks for a meal/snack at a time different than you had planned?
 - Is the timing of meals/snacks the same every day or does it change?
 - 3) Who decides what your child will eat for a meal/snack?
 - If it is you, how do you decide?
 - Is the decision about what to eat for meals/snacks always made by the same person or does it change?
 - 4) Is your child allowed to help themselves to food without asking you first?
 - Are there foods/drinks in your house that your child is not allowed to eat, or that have special rules/limits?
 - How are enforce those rules/limits enforced?
 - 5) Who decides how much food your child eats for a meal/snack?
 - Does your child play a role in this decision?
 - Who serves the portion?
 - If you serve your child, how do you decide how much food to give them?
 - Is the decision about how much food your child eats always made in the same way or does it change?
 - Do you think it is appropriate for preschool aged children to serve themselves?
 - 6) What do you do if your child refuses to have certain foods put on their plate (or refuses to eat certain foods they are served)? Is this always handled in the same way or does it change?
 - 7) How is it handled if your child says they are done eating/no longer hungry but there is still food left on their plate or you feel like they have not eaten enough?
 - 8) How is it handled if your child wants more food than you put on his or her plate (or than they put on their plate)? More snack during a snack time?
 - 9) In general, when you are with your child, how much control do you feel like you have over what and how much they eat?
 - 10) We have talked today about many different decisions you make about how to feed your child. Are there any guidelines, rules or routines that you follow when feeding your child that I did not ask about?
- During the first part of the interview today we have talked a lot about the choices you make about when, how, and how much you feed your child at home. During the second part of this interview I want to talk with you more about what impacts these decisions that you make about feeding your child, in particular I am interested in learning more about what things might come up during the course of the day that might change the way you typically do things?*
- I have talked with a lot of parents and asked them about the types of things they think impact their rules and routines and food, as well as the types of foods they feed their child. I am going to go through and list some of the things other parents have talked about – if they make sense to you, you can elaborate with regard to how they impact you and your family. If not – we can skip and move on to the next one. I will also give you time to share with me other things that impact your family that I do not bring up.*
- 1) Do you ever feel as though the way you feed your child is impacted by their mood or behavior on a particular day? In what way?
 - 2) Do you find that you change the way you feed your child, either the rules/routines or the types of food you serve
 - on days when you are feeling particularly stressed, distracted, sad, or worn-down?
 - as a result of a tough day at work or a fight/disagreement with a co-worker, spouse or partner?
 - because of another change to your routine, for example, on days when you have special activities or days when your spouse/partner is keeping a different schedule than usual?
 - when you are in a different location or with different people than usual?
 - 3) Can you think of other things that come up during the course of the day that change your typical routine or the types of foods you serve your child for meals or snacks?

had a prior relationship with the study participants. Interviews ranged in length from 30 to 60 min. To reduce burden, participants were allowed to complete the interviews in person or over the phone. The majority of interviews (n = 30) took place in a private room on the University campus, while 10 interviews took place over the telephone; both interview formats (phone and in person) lasted similar lengths and yielded similarly descriptive responses from study participants. Interviews were audio-recorded and written consent was obtained before

Table 3
Food parenting constructs and associated quotes.

Food parenting construct, themes	Example quote
Coercive control	
Bribes, threats, or tricks	If he puts up a huge fight, then we usually say, "Well, if you don't have one bite, if you don't at least try it, you're not going to get a treat after dinner."
Pressure-to-eat	Then she'll eat a couple bites, and she's like, "Okay, can I be done?" "No, you can't be done, you have to finish your [whole] plate."
Restriction	The only thing we would like try and restrict is if it's like a dessert or something like that, or sometimes we would restrict fruit because she eats so much of it.
Using food to control behavior	She usually throws a little fit, and I'll give her something just little to hold her over.
Autonomy Support	
Reasoning	I tell them that, you know, it's healthy, and you need these nutrients, or, you know, protein and carbs and vegetables and everything, you know, for your body to feel good.
Negotiation	And if it's something where it's at dinnertime and he ate all of his grapes and nothing else, then we might say, "Well, before you have more grapes, you need to have a little bit more of this other stuff and then you can have more grapes."
Encouragement	I always try to encourage them to at least take two bites, and if they don't like it, then you know that you don't like it. Just because you see it and you think you don't like it doesn't mean you don't, and so I'll encourage them to take at least two bites.
Child involvement	I would say maybe one meal out of the day, you know, they're helping — where it's like at breakfast, they go out and they pick out a granola bar from the drawer and put it on their plate, or they can pick out the fruit cup and put it on their plate.
Structure	
Rules and Limits	I mean, he knows where like his snacks and his treats are, and he may just go grab something, but he knows he can't have it without asking.
Schedule and Routine	I don't know, consistency seems to work the best for little kids in our experience, and we're not good at that with a lot of things, but I feel like with meals we are. So during the week — on the weekend, we try to keep it as consistent as we can on the weekend.
Monitoring	Typically if I feel like it's an important group that we haven't gotten much of, so say we haven't had veggies all day, so I usually try to introduce some veggies at both like lunch and dinner or snack time and dinner, so there's a couple of opportunities and she's not forced to do it all at once.
Guided Choices	For breakfast we have — it's usually — there's usually four options. It's usually the same every day. She can choose oatmeal, yogurt, waffle or toast.
Food accessibility and availability	Well, I feel I have a little control over what he eats, because I do the shopping and provide the food. So if I don't buy it, he doesn't have it when I'm with him. We always have fruit on the table. There's usually always yogurt in the fridge, other things they can get. There are usually always granola bars or cereal bars, as well as the normal Goldfish crackers, Cheez-Its, once in a while like fruit snacks and that sort of thing. There's always a couple of cupboards they can reach now, and they can, well, get into the refrigerator quite easily.
Anticipatory Catering, Indulgence	And I only buy what he likes. And I really only feed him and them, all of them, what they like, and I don't make them eat anything that they don't want.

commencing the interview. All study protocols were approved by the University of Minnesota's Institutional Review Board Human Subjects Committee and participants provided informed consent.

2.2. Data analysis

Audio-recorded interviews ($n = 40$) were transcribed verbatim and coded using a hybrid deductive and inductive content analysis approach (Elo & Kyngäs, 2008; Miles, Huberman, & Saldana, 2014) using NVivo10 software (NVivo 10, QSR International Pty Ltd, Burlington, MA, 2014). Specifically, when exploring the types of food parenting practices utilized we first allowed specific themes to naturally emerge from the data (inductive analysis), but then sought to organize these themes based on the broad dimensions of structure, autonomy support, and coercive control outlined in the Vaughn's content map (Vaughn et al., 2016) (deductive analysis). When inquiring about momentary factors that influenced food parenting and aiming to understand the role that these factors played in the parenting practices utilized, we relied solely on inductive content analysis. Using open coding, the researchers first read through each transcript in full to gain a broad sense of the full story being told by the participant as well as to allow for any unexpected linkages between participant responses to various questions to reveal themselves to the research team (Qualitative analysis, 1995). Following this initial read-through, the researchers then read each interview line-by-line to establish initial codes and capture key thoughts and concepts. Next, coding to reduce broad categories into sub-categories was conducted and major concepts were identified. The major concepts were further defined, developed and refined into overarching constructs and sub-themes.

All parent transcripts were read and coded by the principal investigator (first author of this paper) to ensure that saturation of themes had occurred. To improve trustworthiness (Berge et al., 2016; Denzin & Lincoln, 2011; Hsieh & Shannon, 2005; Patton, 1990) of the data and reduce bias, 32 (80%) randomly selected transcripts were double-coded

(first and second author of this paper). After initial coding, agreement was reached between the two coders on themes and placement of quotes within themes 94.7% of the time (initial interrater reliability). Then, both coders came together in person to discuss questions and discrepancies regarding quotes or placement of quotes in theme categories until 100% agreement was reached. To confirm interpretation of the information generated from the interviews, preliminary study results underwent member checking with ten (25%) of the original parent participants. In qualitative research, member checking is considered best-practice and is one type of validation method that offers study participants the opportunity to provide informant feedback or respondent validation of the study results (Denzin & Lincoln, 2011; Guba & Lincoln, 1989; Patton, 1990). For this study, a subsample of the original participants reviewed the preliminary study findings and provided feedback via a second individual interview with the principal investigator to enhance data credibility and authenticity (Denzin & Lincoln, 2011; Guba & Lincoln, 1989; Patton, 1990); adaptations to the final themes (names and descriptions) were made based on feedback that occurred during member checking interviews.

3. Results

3.1. What food parenting practices do parents use?

Specific food parenting practices utilized day-to-day by parents (subthemes) were operationalized from the rich descriptions provided within the one-on-one interviews; identified practices were then conceptually organized within the broad theoretical domains (overarching themes: coercive control, structure, autonomy support) outlined in Vaughn's concept map (Vaughn et al., 2016). Specific food parenting practices identified are described in detail below, organized under broad overarching themes; additional example quotes from participants related to themes are available in Table 3.

3.1.1. Coercive control

Parenting practices subthemes consistent with the broad overarching theme of coercive control (Vaughn et al., 2016) were discussed within individual parent interviews. Specifically, many parents (47.5%) discussed using **bribes, threats or tricks** as well as employing **pressure-to-eat** (35.0%) and **food restriction** (32.5%) techniques at some eating occasions. For example, one parent said, “I’ll set an actual timer and say, ‘You have 5 min to eat your food, and if you don’t finish it, then you don’t get a treat.’”

Some parents (12.5%) also discussed **using food to control a child’s behavior**. For example, one parent said, “If they get in the car after school and ask for something right away, like, ‘Do you have any cookies?’ then I know that they’re hungry, and that half an hour between getting home and dinnertime, they’re going to get upset, or it’s going to be a meltdown, so I’ll give them a little something. Like, ‘Here’s a couple pretzels,’ or ‘Here’s a cheese stick’ or ‘Here’s a glass of milk.’”

3.1.2. Autonomy support

Many parents described engaging behaviors (subthemes) that fell under the overarching theme of autonomy support (Vaughn et al., 2016). These parenting practices stood apart from coercive control in that they did not stem from a primary goal of having the child behave in a very specific way. For example, many parents (75%) discussed engaging in **reasoning**, or using logic to persuade their child to make certain choices about food or to adopt a particular eating behavior; in many cases there was some amount of nutrition education occurring within the context of parental reasoning. For example, one parent said, “I try and communicate to him like, ‘It is really important to drink water. Like, you can have that [particular food], but that’s full of sugar or that’s really like fattening or that’s not a healthy snack. You can make that choice, but then you should really try hard to make a healthy choice later.’ you know.”

Encouragement was used by many parents (45.0%); they described attempts to embolden their child to take on new healthy eating habits, try new or different foods, or select a healthier option. Parents (57.5%) also discussed the frequent use of **negotiation**, or back-and-forth discussion, in determining the amount or type of food consumed by their child. For example, one parent said, “I usually say, ‘Finish what you have first, and then you can have more,’ because oftentimes they’ll like finish one thing and they won’t have touched another thing on their plate, so I’m like, ‘Well, you have to have a few bites of this before you can have more of that.’ So, lots of that kind of negotiation.”

Finally, parents (30.0%) talked about efforts to increase **child involvement** in the planning and preparation of meals as a means of passing on family norms and traditions and to provide an opportunity for their child to develop important meal planning and food preparation skills.

3.1.3. Structure

Many parents discussed using food parenting practices (subthemes) that fell under the overarching theme of structure (Vaughn et al., 2016). For example, most parents (87.5%) discussed having well-established **rules and limits** around food and eating; specific rules and limits differed widely between families, but overall parents utilized rules and limits to set expectations for their child regarding what, when, where, and how much food their child was allowed to eat. Some parents also discussed having rules or limits related to the atmosphere of the family meal; for example, many families limited the use of devices (e.g., television, iPad) at meals. Parents (85.0%) discussed following a **schedule or routine** with a specific focus on the importance of consistent timing of meals and snacks throughout the day to ward off frequent requests for snacks as well as grazing throughout the day at the expense of eating more traditional meals. For example, one parent said: “So usually we do have a pretty strict schedule for snacks and dinners, just because like she’s usually pretty picky. She would snack all day if she could. So we set up a snacking schedule, which I think they have a good amount of snacks, like

three snacks a day is, you know, a pretty good amount. And we have set up at the certain times just so they don’t get full before they eat their meals.”

Parents (60.0%) engaged in **monitoring** behaviors, noting that they would keep track of the types of foods offered and eaten with the goal of providing a balanced variety over the course of a day; for example, if a child did not eat any vegetables at lunch time, a parent might intentionally offer two vegetables at dinner to promote consumption. The use of **guided choices** or allowing a child the freedom to choose between a limited number of pre-selected options (e.g., spaghetti or tacos), was also very common among parents interviewed, with 67.5% of parents endorsing the use of this food parenting practice. Parents (52.5%) also discussed making intentional choices about **food accessibility and availability** with the goal of limiting their child’s intake of certain foods and promoting their intake of others. Specifically, many parents indicated that they had specific places within their home (a fridge or kitchen drawer, countertop) where they placed snacks that they allowed their child to freely choose from, whereas other foods and snacks were kept out of reach or out of sight. One participant said, “In the refrigerator, the cheese sticks and other snacks are at his level, and the unhealthy stuff is up top, so he can’t just kind of reach in and grab it.” Many participants also talked about being careful to only buy certain foods or certain amounts of less healthful foods at the store to limit their child’s access to these foods at home.

Finally, a subtheme of **anticipatory catering** emerged during discussions with 57.5% of parents; this theme was not specifically described in Vaughan’s content map, but seems to be most in line with indulgent feeding practices. Anticipatory catering refers to the practice of making choices about what to buy, prepare and serve based almost exclusively on catering to known child preferences. For example, a number of parents talked about planning and preparing only a very limited number of meals that they knew were their child’s favorite. For example, “I mean, we just try to keep it simple, because she only likes certain things, and that actually affects like what we make all the time. Like we have macaroni and cheese all the time just because that’s one thing that I know she’ll eat, and chicken because she eats it, and hot dogs because she eats it. But it’s just also [because of] me working at night; it’s just easier for all of us, knowing we don’t have to like fight with her to eat anything.” While many parents choose to prepare meals they knew would be well-liked by family members, including their children, the behaviors described under the anticipatory catering theme went beyond that, as parents described avoiding trying new things and feeling very limited in the meals they could prepare.

3.2. What factors influence the use of certain food parenting practices ‘in the moment’?

Results from parent interviews suggested that food parenting practices are not static, rather they fluctuate across time and context and are readily impacted by a variety of salient momentary factors. Parents identified several subthemes that fell under this overarching theme of “salient momentary factors”, or factors that caused parents to make a shift or change to their usual food parenting practices; these subthemes are discussed below, and example quotes from participants related to momentary themes are available in Table 4.

Many parents (65.0%) talked about **limited time** changing the quality of the food they would prepare for their family. Some parents also indicated that they were more likely to prepare a child’s preferred foods or to relax the enforcement of usual mealtime rules if they were rushed for time in an attempt to avoid conflict at the meal. Some parents (25%) also discussed the role that **activities or special events** played in their food parenting: families were more likely to eat convenience foods or fast food, and to rush or even skip family meals, to accommodate evening activities. Further, they reported relaxing rules about candy or junk food if it was available at an evening activity or special event. Another theme that arose from interviews was the momentary impact of **coordination with a partner/accommodating**

Table 4
Momentary factors that influence food parenting practices.

Momentary Factor Themes	Example Quote
Parent feeling tired, worn out, or sick	There are also times where I think we're tired out and it's like I don't want to have the battle, so sometimes I'll just let him eat whatever he wants. Like it's on his plate, maybe I want him to have more veggies — I'll just let him eat what he wants to eat. Like if I don't have the energy, then I'm more likely to go for some take-out or microwave something quickly, versus making a longer, more home-cooked meal.
Limited time	Like on the days that we're like more rushed, that's the days we generally don't eat together, and they probably only get like a peanut butter sandwich and yogurt, like not — you know, they might not get a fruit and vegetable choice that night.
Child mood and physical health	And so when we're in a hurry, or it's quick, or we just don't feel like dealing with a whiny kid, we'll give him what he likes. If they're whiny and I'm trying to cook food and they're, like, hanging on me, it's what can I get in front of them the quickest that's going to get them out of my space, so usually that's a sandwich, because it's super-easy, everything's there, you don't have to heat it up, and you just put it on a plate.
Parent stress/mood	If she's tired or cranky, or if I'm really tired or cranky, it might be less likely that I try to enforce us sitting down together at the table. Definitely, because when I'm stressed out, I just want to be alone, and so like I want to go and just like go in a different room, and eat by myself, and like watch TV, or like not engage with them. And then sometimes like even at the table, I don't engage with them at the same level that I usually do if I'm stressed out, or if I'm just eating because I know that if I don't sit there and eat with them, they won't eat. They'll just get up and play, and their food will get cold and stuff. So, yeah, it definitely affects it. Sometimes, if we're both stressed, it'll be, "Hey, let's go get dinner."
Failure to have a plan in place	I'm pretty organized and planned, so I plan it all out. If I don't plan it, that's when it becomes an issue, and that's when they get to have the mac and cheese or the hot dogs. Yeah. I think we — we menu plan. If we can stick to it, we're really good, because we'll prep the night before, make it really easy. But if we don't menu plan, it's pizza or mac and cheese sometimes.
Activities, special events	You know, when we have activities, then we don't get a lot of time to cook, and then we eat out, you know, at a restaurant or fast food. There are some times where I pick them up from school, and we're going to an activity, and then it's what do we do in the meantime? Do I fix a dinner? Then it's a scramble. "What do you want? Do you want McDonald's? What do you want? Do you want me to bring a sandwich?"
Coordination with partner, changing schedules	My spouse's schedule is unpredictable all the time, so I never really know if he's going to be home or not. I do try and like touch base with him early in the afternoon to like see, because like on days when he's going to be home, then I try and make like something that everyone's going to eat. And like I said, when my husband's gone, I just do whatever I can to survive as far as cooking. So, yeah, I'll totally make chicken nuggets or grilled cheese, because it's easy.

changing work schedules. For many families (22.5%), the evening routine was subject to change depending on who was at home during the dinner hour, which was not always predictable (e.g., shift work, traffic, late meeting, on-call). Parents described making simpler, child-centric meals or being more relaxed about the structure of the dinner hour if they were the only parent at home, whereas they had a more elaborate meal and structured routine if they knew that their partner would join them. Many also talked about being less engaged with their child during the meal if they were the only grown-up present.

The majority of parents (70.0%) talked about the impact that their own **mood, energy level or physical health** played in their food parenting practices; if they were feeling tired, worn out, sick or stressed that they were more likely to serve foods that they knew their child would eat without complaint, even if they were less healthful or not a balanced meal. They were also more likely to make the last minute decision to eat out or order in food. Some parents noted that if they were worn out or stressed they might choose to eat separately from their child or to rely on devices (e.g. TV, iPad) to make mealtimes less of an effort for them. Finally, parents talked about using how they were quicker to rush or pressure their child to eat or to use a bribe to make the meal go smoothly. Along similar lines, parents (47.5%) noted that their **child's mood or physical health** could impact food-parenting choices; parents indicated that if their child was crabby, whiny, tired, or didn't feel well, they typically chose foods that were quick to prepare and preferred by their child to make things easier on themselves.

Many parents talked about trying to have a plan in place for meals and snacks at the start of each week and indicated that when they did have a plan in place that there was very little that could get in the way of them executing the plan; however, parents (25.0%) discussed that if

they **failed to have a plan in place** then the littlest thing could throw them off and result in them serving very different meals or engaging in very different mealtime rules and routines than they typically did.

3.3. How do momentary factors influence the types of food parenting practices parents utilize?

When talking with parents about how momentary factors influenced the way they engaged with their children around food parents spoke about things that shifted their parenting away from structure and autonomy support behaviors, towards less structure and support and more coercive types of behaviors. For example, one parent said, "*When I'm stressed out, I just want to be alone, and so I just like go in a different room, and eat by myself, and like watch TV, or like not engage with them. Or sometimes, even at the table, I don't engage with them at the same level that I usually do if I'm stressed out. They just get up and play and their food gets cold and stuff. So, yeah, [stress] definitely affects it.*"

Importantly, parents spoke about how momentary factors might lead to a change in food parenting practices **prior to the start** of a meal (e.g. "*If she's tired or cranky, or if I'm really tired or cranky, I'm much less likely to enforce us sitting down together at the table.*") or **within the context** of an eating exchange (e.g. "*I mean, like if he starts asking for a cookie. [I'll say] 'No treats tonight. No treats.' But he keeps pestering, and if I'm tired and worn out, I'll say, 'Okay, you can have half a cookie,' so at least he doesn't think he's winning the full cookie, but at the same time, I'm just worn out and want him to stop asking a hundred times.*").

Overall, the sample of parents interviewed seemed to aspire to engage primarily in food parenting practices that fell under the domains of structure and autonomy support; but, parents identified numerous

momentary factors that, at times, led their actions to differ from their initial aspirations. Parents typically described momentary factors shifting away from their goal of structure toward indulgence and away from their goal of autonomy support toward coercive control.

4. Discussion

This paper used data collected through one-on-one interviews with parents of preschool-aged children to empirically operationalize food parenting practices that are thought to reflect three broad dimensions of food parenting, as outlined by Vaughn's content map: coercive control, autonomy support, and structure. Further, we aimed to qualitatively explore potentially salient momentary factors that influence the use of particular food parenting practices in order to better understand how momentary factors influence the food parenting practices parents rely on in the moment. Results from parent interviews illuminated the diversity and variability in the types of food parenting practices utilized by parents of preschool-aged children. Parents reported utilizing food parenting practices from across the three broad domains (coercive control, autonomy support and structure); practices described by parents aligned, with few exceptions, with the practices proposed in Vaughn's content map. Modeling, food preparation, nutrition education, and praise were four specific practices discussed within Vaughn's paper that did not emerge as themes during our parent interviews; it might be that the parents we interviewed engage in these practices without realizing they are (e.g., praise) or without recognizing their potential impact on their child (e.g., modeling, food preparation) or it might be that some of these practices are more relevant to parents of older children (e.g., nutrition education). It is also possible that while Vaughn's content map was designed to represent conceptually distinct constructs, that during parent interviews certain practices did not emerge as distinct from one another. In particular, it seems that while nutrition education did not emerge as a distinct practice during interviews, many participant quotes that were conceptualized under "reasoning" also seemed to hint at nutrition education. Moving forward it will be important for researchers to consider the theoretical utility versus the practical utility of narrowly defining specific food parenting practices.

Importantly, many parents indicated that the specific food parenting practices they engage in might change within the context of one eating occasion (e.g. starting with encouragement and moving on to bribery) or across the course of the day or week (e.g. guided choices one day and pressure-to-eat another day). The majority of participants felt that their use of specific food parenting practices varied across time and context. For example, most parents talked about wanting to rely primarily on structure (e.g., food availability, rules and routines) and autonomy support (e.g. guided choices, encouragement) behaviors. However, most parents were able to identify several momentary factors that would arise (e.g. stress, limited time, child's mood), causing them to shift their approach away from an "aspirational" environment of structure and support and towards a more "situational or coping" environment of indulgence and coercive control. Findings from this study align with, the work of [Berge et al.](#), which explored the momentary impact of parental stress and mood, measured using ecological momentary assessment (EMA), on use of coercive food parenting practices; parental stress was found to be associated with an increase in the use of coercive food parenting practices the same evening ([Berge et al., 2017](#); [Berge et al.](#)). Further, previous research supports the idea that parents often report engaging in multiple, sometimes even counterintuitive, feeding strategies; for example, previous work by the lead author found that many parents of adolescents reported high levels of both food restriction and pressure-to-eat ([Loth et al., 2013b, 2013a](#)). At the time, it was posited that parents might use different strategies for different foods and the current research broadens this potential explanation by suggesting that parents may be using multiple practices across all three domains within the context of one eating occasion. Additionally,

previous research has proposed that the relationship between parent feeding practices and child outcomes is likely to be bi-directional; the emergence of child health and mood as salient momentary impacts supports this idea. Future research should employ data collection and analytic strategies that allow for further exploration of this combined use of practices; for example, instead of asking parents to simply respond with their overall, usual level of endorsement (Likert: disagree to agree) of a series of food-parenting practices (e.g., "My child should always eat all the food on her plate") ([Birch et al., 2001](#)), survey questions could be adapted to provide the opportunity for more nuanced and time and context specific responses, as well as the report of multiple behaviors at one time. Alternatively, researchers could employ novel data collection strategies, such as video-recorded interactions, that allow them to capture a wide range of behaviors at one time ([Berge et al., 2014](#)). Further, research should aim to better understand how and why parents shift between engaging in different types of food parenting practices and how the dynamic use of varied food parenting practices impacts child weight and weight-related outcomes.

It is notable that the salient momentary factors that parents identified as causing them to alter their typical food parenting practices are fairly commonplace (e.g. activities, limited time, stress), indicating that it does not take something extraordinary to throw off a typical pattern or routine ([Deater-Deckard & Deater-Deckard, 2004](#)). Further, it is likely that there are certain sub-groups of parents that are impacted more frequently, or to a greater degree, by these types of momentary factors. For example, a single parent or a parent that works shift work may experience limited time, stress, or the impact of changing schedules with greater frequency than a parent with the support of a partner or a more flexible job. Disparities in exposure to the salient momentary factors identified by parents in interviews should be explored further and may serve to explain observed differences in use of particular food parenting practices across demographic characteristics ([Loth et al., 2013b, 2013a](#)). The potential impact of momentary factors on the use of specific food parenting practices, as well as disparities in exposure to salient momentary factors, should be considered when planning public health and clinical interventions for parents of young children. For example, future interventions might help parents identify manageable ways of maintaining structure and autonomy support in food parenting in the face of disruptions to typical routine or other external challenges. Further, for families that experiences frequent disruptions or lack routine, it might make sense for interventions to help parents find ways to establish family routines as a launch point for a future work aimed at the adoption and maintenance of structure and autonomy support food parenting practices. Previous research by [Fiese and Wamboldt](#) suggests that capitalizing on preexisting routines or establishing new routines may help families reduce the burden of adopting and maintaining new behaviors ([Fiese & Wamboldt, 2001](#); [Spagnola & Fiese, 2007](#)).

Anticipatory catering emerged as a food parenting practice relied upon by a number of parents. This is a new finding in the literature and was not specifically outlined in Vaughn's review article; however, using Vaughn's concept map as a guide, this practice seems most consistent with a sub-type of unstructured, indulgent practices. It make sense that parents would consider child preferences when shopping for food and planning and preparing meals, however the behaviors described underneath the umbrella of anticipatory catering seemed to take this consideration a step further. During interviews, a number of parents described completely avoiding purchasing or serving foods that they didn't know with certainty that their child would like, or alternatively, they would plan to prepare their child a replacement meal of favorite foods when they were going to serve a new, or potentially disliked meal. For some families, this level of anticipatory catering meant their child was only ever exposed to or offered a very small number of food items. Given that previous research has shown that preschool aged children are still developing taste preferences and that repeated exposures to new foods is needed to inform taste preferences ([Birch, 1998a, 1998b, 1999](#); [Birch & Fisher, 1998](#); [Jansen, Mulken, & Jansen,](#)

2007), a parent's choice to engage in high levels of anticipatory catering could have a potential impact on the development their child's food preferences. Further research is needed to understand the prevalence of anticipatory catering type behaviors among parents of preschool-aged children and should explore the longitudinal impact of these types of behaviors on food preferences and dietary intake. Further, while we placed anticipatory catering under the umbrella of structure in this paper, future discussion is needed about the best placement for this subtheme within the proposed content map. Vaughn defines structure as "parents' organization of children's environment to facilitate children's competence". Included under the umbrella theme of structure, Vaughn describes unstructured practices, which are further delineated into neglect and indulgence; although we determined that, using the content map, the concept of anticipatory catering fits best within the unstructured practices construct, the actual behavior described by parents is not unstructured at all. In fact, parents who engaged in this behavior did so in a very structured and intentional way, and as a result many of them engaged in very few other food parenting practices. For example, if a parent plans ahead and serves a meal that only foods they know will be well received by their child, they alleviate the potential need or desire to engage in additional practices at that meal, such as pressure-to-eat, reasoning, encouragement, and negotiation. Looking beyond Vaughn's content map for guidance to better understand this parenting practice, it seems that anticipatory catering could easily be conceptualized as behavior associated with a permissive or indulgent feeding style (Francis, Hofer, & Birch, 2001; Hoerr et al., 2009; Hughes, Shewchuk, Baskin, Nicklas, & Qu, 2008; Mitchell, Brennan, Hayes, & Miles, 2009; Rodenburg, Kremers, Oenema, & van de Mheen, 2014); overall, the behavior of anticipatory catering is both volitional and involves planning, but fundamentally indulgent in that it is overly responsive to the child and their preferences.

Overall, findings from this qualitative study suggest that researchers studying food parenting practices should be aware of the likely interplay between types of feeding practices and the potential impact that momentary factors may have in shifting parents from one type of practice towards another. Further, developing novel measures and assessment methods that allow for exploration of food-related parenting practices as dynamic, rather than static, behaviors should be explored. Understanding the relationship between food parenting practices and child outcomes within the dynamic context of a family is a challenge that must be met, not by limiting our exploration to a few specific parenting behaviors assumed to be static over time, but by challenging ourselves to explore approaches that embrace the diversity and complexity of these dynamic behaviors. One such approach is ecological momentary assessment (EMA), a novel methodology that utilizes handheld devices to capture information on behaviors as they unfold in their natural environment, moment-by-moment, to capture dynamic changes in behavior over time and across contexts. Use of EMA could provide an opportunity to elucidate temporal relationships between momentary variables (e.g., parental stress, child behavior) and use of food parenting practices. The influential momentary impacts identified within the current study could serve to inform the development of new measures focused on identifying momentary influences of food parenting to be measured via EMA technology.

There are both strengths and limitations to this study. This study adds significantly to the emerging literature aimed at broadening our conceptualization of food parenting practices, by being the first, to our knowledge, qualitative research study to operationalize the dimensions proposed in the content map developed by Vaughn and other leading experts in the field. Further, this study adds to the evolving conversation about food parenting practices as dynamic and context specific constructs by relying upon parents to identify the most salient factors that impact their moment-to-moment choices about what food parenting practices to use. Finally, this study proposes the idea that there might be an interplay between specific types of food parenting practices and momentary factors, whereby exposure to certain momentary

factors causes parents to shift from one set of feeding practices to another. However, although study participants were drawn from a large, population-based sample, they are still not representative of the full Project EAT sample, or the population at large. For example, this sample was made up of predominately white and higher income individuals; future research should explore if salient momentary influences on the use of particular food parenting practices are different among more racially/ethnically and socioeconomically diverse populations. Further, it is important to consider the role that the questions and prompts included within the semi-structured interview guide might have played in participant responses; by asking participants to reflect on and share day-to-day factors that shifted their use of food parenting practices and providing specific prompts, it is possible that we influenced their report of particular momentary factors. Finally, although all interview participants lived with their child at least fifty percent of the time, many had arrangements in which they were not the sole (e.g. child attended daycare or school) or primary caregiver (e.g. responsibility for child's care was shared with another parent or relative); while allowing parent participants with a range of lifestyles and living arrangements increased diversity in participant responses and generalizability of findings to other similarly diverse populations, the fact that not all interviewees were the child's sole, primary caregiver could also be considered a study limitation.

5. Conclusion

Findings from this study indicate that parents of preschool-aged children utilize a broad range of food-related practices that their use of particular behaviors was dynamic (both within and between meals) and specific to the context. Researchers studying food parenting practices should consider the broad range of behaviors utilized by parents, rather than focusing in on a specific technique, when striving to best understand the role of parents in the weight and weight-related outcomes of children. For example, if a parent regularly engages in feeding practices representing all three broad domains of food parenting within the context of one eating occasion (e.g., restriction, negotiation, and food availability), the utility of exploring the impact of one particular practice on dietary intake is limited. Further, the use of novel data collection methods that allow for exploration of food parenting practices as dynamic and context specific, rather than static, should be explored. Finally, public health professionals and clinicians should consider the potential impact of momentary factors on the use of specific food parenting practices when planning interventions for parents of young children; for example, helping parents to anticipate things that might come up and disrupt their typical routine, and create a plan for ways to manage these disruptions in a healthful way, might help to minimize the use of unstructured and coercive food parenting practices.

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Competing interests

The authors declare that they have no competing interests.

Authors contributions

KAL obtained funding for the study; recruited participants; conducted interviews; coded data; developed final themes; wrote the initial draft of the manuscript; and coordinated revisions to the manuscript. **MU** coded data; developed final themes; and assisted with writing and thorough review of the manuscript. **DNS** helped develop the interview guide and the recruitment plan; and assisted with writing and thorough review of the manuscript; she is also the principal investigator for the parent study from which participants were recruited, Project EAT. **JOF** assisted with writing and thorough review of the manuscript. **JMB** helped develop the interview guide and the recruitment plan; and assisted with writing and thorough review of the manuscript. All authors have read, approved, and provided critical revisions to the final manuscript.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.appet.2018.07.027>.

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