Title: An exploratory analysis of child feeding beliefs and behaviors included in food blogs written by mothers of preschool-aged children

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Abstract

Objectives: This study analyzed child feeding beliefs and behaviors, types of recipes, and their associations in blogs focused on child feeding. Design: 13 blogs were selected using purposive snowball sampling from which 158 blog posts were sampled and coded using directed qualitative content analysis. Variables measured: Child feeding beliefs and behaviors and types of recipes were coded using schemes developed from existing literature. Analysis: Code frequencies were calculated. Chi-square tests for independence examined associations between child feeding and recipe codes. Bonferroni corrections were applied: $p < 0.05/[N \text{ tests}]$. Results: Child feeding beliefs and behaviors were coded in 78% and 49% of posts respectively. Beliefs about children's food preferences (48% of posts) and involving children in food preparation (27% of posts) were the most frequent codes. Recipes were included in 66% of posts. Most recipes were for mixed dishes (32% of recipes) followed by sweets and desserts (19% of recipes). Vegetable recipes were more likely in posts that included the behavior encouraging balance and variety, $X^2(1, N = 104) = 18.54, p < 0.001$. Conclusions and implications: Blog posts contained information that may influence readers' child feeding practices. Future research should explore how mothers use blogs to learn about child feeding.

(Abstract word count: 200)

Keywords: Blogs; Child feeding practices; Recipes; Social media; Mothers

Introduction

In 2011-2012, nearly 1 in 4 preschool-aged children were overweight or obese.¹ To reduce the prevalence of childhood obesity, more research is needed on the risk and protective factors that can be modified during infancy and early childhood.² Child feeding practices are one such modifiable influence^{3,4} and include decisions about what to feed children (i.e. the types and portion sizes of food and beverages), and more nuanced beliefs and behaviors about how to feed children (e.g., the amount of control exerted over children's eating behavior, whether food is used to soothe or to reward, and establishing mealtime/snack routines).⁵ Mothers' child feeding practices in particular may influence childhood obesity risk because mothers tend to spend the most time on child feeding tasks, such as purchasing groceries, preparing food, and eating with children.⁶ Overtly restrictive or indulgent (i.e. highly permissive, child controlled) feeding practices are likely to promote childhood obesity,⁷⁻⁹ whereas responsive feeding practices that are prompt, contingent on children's hunger and fullness cues, and developmentally appropriate may promote children's self-regulatory skills and reduce childhood obesity risk.^{10,11}

Associations between child feeding practices and childhood obesity may be partially mediated by the foods that mothers offer and children consume.¹² Data from the 2008 Feeding Infants and Toddlers Study revealed that 86% of 2- to 3-year-old children consumed foods of little nutritional value (e.g., sweetened beverages, sweets, salty snacks), while less than 15% consumed highly nutritious foods such as dark-green or deep-yellow vegetables in a day.¹³ Among preschool-aged children, indulgent feeding practices have been associated with higher fat consumption⁸ and lower vegetable, fruit, and dairy consumption.¹⁴ Conversely, responsive feeding practices have been associated with lower sweetened beverage consumption,⁸ higher

home availability of vegetables and fruits, and higher consumption of vegetables and dairy.¹⁵

More research is needed on how child feeding beliefs and behaviors influence the types of foods that mothers offer to their children.

Despite their potentially important role in childhood obesity prevention, there is limited evidence on how mothers acquire their child feeding practices.¹⁶ Existing research has primarily focused on maternal factors including demographic characteristics (e.g., income, education), mental health (e.g., depression, eating pathology), and maternal weight status,^{17–20} or on child factors including child weight status, appetitive traits and temperament.^{21–24} Few studies have examined how broader contextual influences such as peers and media (e.g., magazines, television, websites) influence child feeding practices. Social norms that are transmitted through peers and media may influence maternal beliefs about child feeding (e.g., expectations about children's food preferences), child feeding behaviors (e.g., involving children in food preparation), and the types of foods that mothers offer.^{16,25–27}

The Internet has created new media contexts that may convey information and social norms related to child feeding practices. In 2014, 91% of parents used the Internet and over 80% of online mothers used a social media platform such as Facebook (81%), Pinterest (40%), or Instagram (30%).²⁸ One study of primarily White, college-educated mothers found that 75% read blogs, which suggests that blogs are also highly accessed by some mothers.²⁹ Previous studies have found that mothers from diverse racial/ethnic and socioeconomic backgrounds use websites and social media to obtain general parenting information and social support.^{28,30,31} Given the potential reach of information shared on Internet-based media such as blogs, research is needed on the information about child feeding practices that mothers are likely to consume.

Blogs are generally defined as publically available, chronologically organized, frequently

updated webpages that focus on specific topics. Blog posts are the individual, dated entries that contain digital content such as text, photos, videos, and/or hyperlinks to other webpages. Many blogs have social networking features that promote communication and community among bloggers and blog readers who may not know each other offline (e.g., comment threads). “Food blogs” typically include text about food culture, cooking, and eating, food photography, and recipes.^{32,33} The purpose of the current study was to describe the information conveyed in food blogs focused on child feeding that were written by mothers of preschool-aged children to begin to explore how these media may influence readers’ child feeding practices. Specifically, the first aim was to describe the child feeding beliefs and behaviors that bloggers endorsed and/or modeled in their blog post text. The second aim was to identify the types of recipes that were included in blog posts because recipes may convey social norms about the foods and beverages that mothers offer to their children. The third aim was to explore the associations between child feeding beliefs and behaviors and the types of recipes.

Methods

This study was reviewed by the Pennsylvania State University Institutional Review Board and was classified as exempt. Consistent with the guidelines presented by the Association of Internet Researchers,³⁴ this manuscript does not disclose inherently identifying information (e.g., blog names, web addressees) in an effort to protect the privacy of the bloggers whose content was included in this observational study. Specific demographic characteristics of the bloggers and their children (e.g., race and ethnicity, family size) are also not disclosed; in combination with the small sample size and highly specific sampling criteria, this information may lead to the identification of the blogs included in this study.

Sampling Procedure

Purposive-snowball sampling³⁵ was used to identify blogs. Figure 1 displays the results of the sampling procedure. Blogs were eligible for study inclusion if they satisfied the following criteria: (1) the blog was publically available and updated within the past month; (2) blog content represented the views of the blogger, not those of a business or other organization; (3) the blog description stated or implied its primary focus was on child and/or family feeding; (4) the blogger was parenting at least 1 preschool-aged child (~2- to 5-year-old) in 2013; and (5) a minimum of 25% of blog posts were relevant to child feeding during each quarter of the study period: March 1, 2013 – February 28, 2014.

To identify an initial sample of blogs that were relevant to the study aims and could be easily accessed by mothers through a general web search, the first author entered the phrase “food blogs for moms” into multiple web search engines (i.e. Google, Yahoo, DuckDuckGo) in May 2013. An article titled, “The Top 100 Mom Food Blogs of 2013!” published in April 2013 by a parenting website, *Babble*,³⁶ was among the top search results across search engines. The 100 blogs included in this article were selected as the initial sample. Similar to a previous study of health-related blogs,³⁷ the hyperlinked lists of blog recommendations (i.e. “blog rolls”) included in eligible blogs from the initial sample were used to identify a snowball sample. Six out of 16 eligible blogs from the initial sample included blog rolls, which yielded 168 unique blogs for the snowball sample. A total of 24 blogs from the initial and snowball samples satisfied the first 4 inclusion criteria. These blogs had a mean of 98 posts during the study period, with a range of 11 to 247 posts ($SD = 61$; Median = 82).

To determine whether blogs satisfied the 5th inclusion criteria, the study team developed a coding manual that included descriptions and examples of blog posts that were relevant to child

feeding or not relevant to child feeding. Posts that mentioned topics related to child feeding (e.g., children's food preferences, recipe suggestions for children, managing mealtime behaviors) at least once were coded as relevant. Coders (i.e. the first author and a research assistant) trained by independently coding a random sample of blog posts until percent agreement was greater than 85%. Coders met regularly to compare and discuss coding decisions. After training, all posts from the study period ($N = 2345$) were coded. All posts from 4 randomly selected blogs (~15% of the blog sample; $n = 417$ posts) were double-coded and demonstrated high inter-rater reliability (Cohen's kappa = 0.91). The first author completed confirmatory coding on all posts that were coded as relevant to child feeding by either coder to determine the final coding assignment. Disagreements were resolved by discussion between coders.

Across the 24 blogs, 39% of all posts ($n = 909$) were coded as relevant to child feeding. The percentage of posts coded as relevant to child feeding varied across and within blogs ($M = 40\%$; $SD = 18\%$; Range = 0% to 100% per quarter). Thirteen out of 24 blogs included child feeding topics in $\geq 25\%$ of posts across all 4 quarters of the study period and were included in the study. A random sample of 20% of posts coded as relevant to child feeding ($N = 158$) were sampled from each of the 13 eligible blogs for further analyses ($M = 12$ posts per blog, $SD = 3$ posts). Two blogs had few posts overall during the study period (i.e. 36 and 11 posts) from which 50% ($n = 13$) and 100% ($n = 8$) of posts relevant to child feeding were sampled to ensure that the sampled posts were representative of the blog's typical content.

Measures

To measure child feeding beliefs and behaviors, the text included in blog posts were coded using directed qualitative content analysis^{38,39} for phrases, sentences, and/or paragraphs that conveyed information about child feeding. An a priori coding scheme was developed by the

authors from existing qualitative and quantitative survey measures of maternal child feeding beliefs and behaviors.⁴⁰⁻⁴⁴ Open coding was also conducted to capture emergent child feeding beliefs and behaviors.³⁹ One additional code emerged and was the belief that food is “fun.” All child feeding beliefs and behaviors that occurred within each post were assigned codes. Child feeding beliefs and behaviors were coded by the first author, who repeatedly read all posts and has training and expertise in child feeding practices. The first author also conducted confirmatory coding after all posts had been coded once. Ambiguous or challenging text segments were discussed among the authors to determine the final coding assignment.

Recipes in blog posts (i.e. the portion of the post that contained a distinct recipe title, list of ingredients, and step-by-step instructions) were coded using a food categorization coding scheme similar to the 2002 and 2008 Feeding Infants and Toddlers Study.^{45,46} Each recipe included in a post was assigned the code that best reflected its ingredients. Recipes were coded by the first author and a research assistant. Coders trained by independently coding a random sample of blog posts until percent agreement was $\geq 85\%$. Coders met to compare and discuss codes. During the final coding period, a random sample of $\sim 20\%$ of all recipes ($n = 54$) were double-coded for inter-rater reliability. Because there were many possible codes and a low frequency of each code, overall percent agreement was calculated and was 83%. The first author performed confirmatory coding on all recipe codes assigned by either coder to determine the final coding assignment. Disagreements were resolved by discussion between the coders.

Data Analyses

Blog posts were coded using MAXQDA Version 11 for Mac (2014) software for qualitative analysis. A dataset containing 1 row for each blog post and 1 column for each code was created using the code matrix browser feature. Each code was counted only once per post,

meaning it was considered present (1) or absent (0). These data were imported into IBM SPSS Version 22 (2013). The frequency of each code was computed. Pearson chi-square tests for independence were conducted to explore whether the child feeding beliefs and behaviors codes that were included in recipe posts were significantly different than those that occurred in posts that did not include recipes. Chi-square analyses also explored whether the types of recipes included in blog posts were significantly different based on the child feeding belief and behavior codes that were present. Chi-square analyses included only the child feeding beliefs, child feeding behaviors, and recipe types that represented $\geq 10\%$ of the code categories. Significance values were corrected for multiple tests using the Bonferroni correction: $p < .05/[N \text{ tests}]$. All quotes in this manuscript are paraphrased for blogger confidentiality.

Results

Child Feeding Beliefs

Child feeding belief code descriptions and results are displayed in Table 1. Codes for child feeding beliefs were present in 78% of blog posts ($n = 123$). A total of 199 codes were assigned within these 123 blog posts, indicating that multiple child feeding beliefs were described in some blog posts. Approximately $\frac{1}{2}$ of all blog posts included text segments related to beliefs about children's food preferences, such as whether children were likely to enjoy the recipe included in the blog post. Beliefs that child health (e.g., cognitive development, bone density) is an important factor in child feeding decisions were the next most frequent belief code. Text segments that conveyed the belief that mothers are responsible for child feeding tasks (e.g., providing meals) were also somewhat common. Notably, concern for child weight was only coded in 1 out of 158 sampled posts and reflected concern for child underweight. Child food

preferences, health values, and responsibility represented $\geq 10\%$ of child feeding belief codes and were thus included in the chi-square analyses.

Child Feeding Behaviors

Child feeding behavior code descriptions and results are displayed in Table 2. Child feeding behavior codes were assigned in 49% of blog posts ($n = 77$). In total, 100 codes were assigned within these 77 blog posts, indicating that multiple child feeding behaviors were described in some blog posts. Child involvement in food preparation through activities such as stirring or adding ingredients was the most frequently coded child feeding behavior. Encouraging balance and variety was the next most frequently coded behavior, in which bloggers modeled or endorsed feeding children an array of foods to expose them to many flavors and to avoid food monotony. Bloggers also discussed how they responded to their children's developing nutritional needs and eating behavior. Child involvement, encouraging balance and variety, and responsiveness represented $\geq 10\%$ of child feeding behavior codes and were thus included in the chi-square analyses.

Types of Recipes

Recipe code descriptions and results are displayed in Table 3. Recipes were included in 66% of blog posts ($n = 104$). Four posts contained 2 recipes, thus a total of 108 recipe codes were assigned. Nearly 1-in-3 recipes were for mixed dishes. A wide variety of recipes were identified with this code, including pasta- or noodle-based dishes ($n = 7$), Mexican-inspired wrap dishes (e.g., burritos, tacos; $n = 6$), sandwiches ($n = 5$), rice-based dishes (e.g., rice and beans; $n = 4$), and multi-component salads (e.g., quinoa with vegetables; $n = 4$). Sweets and desserts were the next most frequent type of recipe followed by grains and grain products. Notably, 14 out of 17 grains and grain products recipes were for foods that contained added sugars, such as muffins

and pancakes. Recipes for vegetables and meat or other protein sources were also somewhat common. One-third of vegetable recipes contained a deep yellow vegetable (e.g., sweet potato) and ¼ contained a dark green vegetable (e.g., kale). Mixed dishes, sweets and desserts, grains and grain products, vegetables, and meat or other proteins represented $\geq 10\%$ of codes and were thus included in the chi-square analyses.

Associations Between Child Feeding Beliefs and Behaviors and Types of Recipes

Table 4 displays the full results of the chi-square analyses exploring whether child feeding beliefs and behaviors included in recipe posts were different from those in non-recipe posts. Responsiveness was more likely to occur in blog posts that contained recipes than in those that did not, $X^2(1, N = 158) = 7.36, p = .007, \Phi = 0.22$. Full results of the chi-square analyses exploring whether the types of recipes included in blog posts were significantly different based on the child feeding belief and behavior codes that were present are shown in Table 5. Recipes for vegetables were more likely to occur in posts in which the code for encouraging balance and variety was present, $X^2(1, N = 104) = 23.45, p < .001, \Phi = 0.48$. Recipes for vegetables occurred in 50% of blog posts in which bloggers modeled and/or endorsed feeding children a balance and variety of foods, compared to in 6% of posts in which the encourage balance and variety code was not assigned. Recipes for sweets and desserts were somewhat more likely to occur in posts with child involvement in food preparation codes, $X^2(1, N = 104) = 7.85, p = .005, \Phi = 0.28$. Recipes for sweets and desserts occurred in 38% of blog posts in which bloggers described behaviors around engaging children in food preparation, compared to in 13% of blog posts in which child involvement in food preparation was not coded. Although this finding was significant at the $p < .05$ level, it did not maintain significance at the Bonferroni corrected level.

Discussion

Child Feeding Beliefs and Behaviors

Bloggers conveyed a relatively narrow range of beliefs and behaviors about child feeding and focused on children's food preferences and involving children in food preparation. Mothers have reported in previous qualitative research that children's food preferences can make mealtimes challenging (e.g., managing "picky" eating, preparing multiple meals for different family members).^{43,47} Bloggers framed child feeding as an opportunity to create positive mealtime environments and family cohesion. Blog readers may perceive these outcomes as rewarding and prioritize recipes that are likely to appeal to children's taste preferences rather than recipes that may be more nutritious. While positive mealtime interactions such as positive communication have been associated with lower risk for childhood obesity,⁴⁸ overly permissive, child controlled feeding has been associated with increased obesity risk in preschool-aged children.^{8,49}

The single occurring code for concern about child weight reflected concern about child underweight. In combination with the large proportion of recipes for foods that are typically high in energy density, childhood obesity prevention did not appear to be a salient topic in the sampled blog posts. It is unknown whether the children of the bloggers whose posts were included in this study were normal weight, overweight, or obese; thus, the sparse occurrence of the concern for child weight code may reflect that bloggers' children were of normal weight or that bloggers were otherwise unconcerned with child weight status. An encouraging finding was that some child feeding behaviors that have been associated with increased obesity risk (i.e.

restriction)³ and decreased intake of target foods (i.e. pressuring)⁵⁰ were rarely-to-never observed in the sampled blog posts. However, indulgent feeding did occur in a few posts.

Types of Recipes

Sweets and desserts and grains and grain products comprised approximately $\frac{1}{3}$ of all recipes. Conversely, just over 1-in-10 recipes were for dishes that featured vegetables or fruits as the main ingredient. This recipe distribution is not aligned with the 2010 USDA Dietary Guidelines, which recommend reduced consumption of refined grains and added sugars and increased consumption of vegetables and fruits.⁵¹ Vegetables and fruits may be under-represented on food blogs because many are “ready to eat” (i.e. can be consumed raw or with minimal preparation) and do not necessarily require a recipe to prepare. Notably, recipes for vegetables were more likely to occur in posts in which the behavior code encourage balance and variety was present. Thus, there was consistency in mothers’ healthy feeding beliefs and offering vegetable-based dishes to their children, which aligns somewhat with a previous study that found that healthy feeding goals were directly associated with mothers’ reports of child consumption of vegetables and fruits.¹²

Associations Between Child Feeding Beliefs and Behaviors and Types of Recipes

Content about responsive feeding behaviors was more likely to occur in blog posts that contained recipes than in those that did not. In many cases, posts that included the responsive feeding behavior code described the blogger’s knowledge of and response to her child’s food preferences in developmentally appropriate ways (e.g., preparing vegetables a certain way after noticing that her child was more likely to consume them with that preparation method). Bloggers may use children’s food preferences as a rationale for sharing a particular recipe. The positive association between sweets and desserts recipes and child involvement in food preparation may

suggest that bloggers are more likely to model child involvement in food preparation with foods that children already easily accept (i.e. sweets and desserts) than with foods that children have difficulty accepting (i.e. green vegetables).

Limitations

There are a few limitations to this study related to the sampling and coding procedures. Only 6 out of 16 blogs in the initial sample contained blog rolls to generate a snowball sample. Sampled blogs may not be representative of all food blogs written by mothers of young children, particularly blogs that are less well known. Photos, videos, advertisements, and comments were not coded, which may contain information relevant to child feeding. The coding schemes used in this study were developed a priori from previous survey and qualitative research, which constrained the scope and depth of the analyses. Thematic qualitative coding approaches (e.g., grounded theory)³⁵ may result in different insights. Finally, data on the readership of these blogs was not collected, which would improve the understanding of the reach of this content.

Implications for Research and Practice

Blog posts predominantly described feeding children foods that are easily accepted and involving children in food preparation. Additionally, the majority of recipes were for types of foods that are typically high in energy density. Thus, mothers who read food blogs focused on child feeding might not be exposed to information that could help protect against childhood obesity, such as information on age appropriate portion sizes, children's energy needs, or how to recognize and respond to children's hunger and fullness cues appropriately. Future studies should explore whether blog content promotes positive mealtime environments at the expense of promoting healthier diets among blog readers. Descriptive research is also needed on bloggers'

motivations for sharing recipes from various food categories as well as blog reader interest in and demand for different types of recipes.

Results revealed several natural opportunities to intervene with bloggers in order to promote positive child feeding practices. Bloggers could be encouraged to include recipes that pair familiar foods with unfamiliar foods (e.g., serving novel vegetables with a familiar dip), which increases children's willingness to try unfamiliar foods.^{52,53} Bloggers could be prompted to model child involvement in the preparation of foods that are lower in energy density, such as mixing vegetable-based salads, so that readers can observe child involvement with more nutritious foods. Increasing the amount of vegetables included in mixed dish recipes in blog posts, many of which already include at least some vegetables as part of the dish, may be one strategy that could increase children's vegetable consumption while decreasing their overall energy intake.⁵⁴

Overall, more qualitative and quantitative research is needed to examine the extent to which mothers use blogs to inform their child feeding practices and whether blog information actually impacts mothers' child feeding beliefs, behaviors, and types of foods that they offer to their children. Results from studies conducted along these lines of research could inform interventions that aim to leverage food blogs and other social media for childhood obesity prevention.

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Figure 1. Flow diagram of purposive-snowball sampling procedure used to select blogs for study inclusion

Table 1

Child Feeding Beliefs Coding Scheme: Code Names, Descriptions, Examples, Frequencies, and Percentages of Codes

Code	Description	Example	Frequency (<i>n</i>)	Percent of all belief codes <i>N</i> = 199	Percent of all blog posts <i>N</i> = 158
Children's food preferences	Perceptions of children's likes or dislikes of foods, flavors, or textures	<p>"All of my kids like eggs, so this makes a great afternoon snack."</p> <p>"This recipe is sure to be a hit with the whole family."</p>	75	38%	48%
Health values	Child health and nutrition portrayed as important; Includes health claims	<p>"Avocados are a quick and healthy way to fill up your kids."</p> <p>"This recipe provides kids with their daily dose of vitamin C."</p>	35	18%	22%
Responsibility	Parents/mothers are responsible for child feeding tasks (e.g. cooking)	<p>"Packing lunch is part of motherhood."</p> <p>"It's hard making kids meals three times per day in the summer, but it's something moms have to do!"</p>	22	11%	14%
Food and family	Child feeding creates family cohesion and memories; Includes "family meals"	<p>"I hope my kids make this family meal for their own kids one day."</p> <p>"We make this lunch as a family after going to the market each week."</p>	19	10%	12%
Food and fun	Food is portrayed as a source of entertainment or "fun"	<p>"We made these cookies as a fun way to pass time on a snow day."</p> <p>"Adding sprinkles is a sure way to bring smiles and fun to your child's celebration."</p>	15	8%	10%

Food and culture	Frames food as a way to promote/share culture/holidays with children	“It wouldn’t be summer without ending the day with ice cream.” “This is the perfect dish to make to get everyone into the holiday spirit.”	13	7%	8%
Picky eating	Perceives children as picky, selective, or difficult-to-please eaters	“My son is a terribly picky eater.” “I made this side knowing my son wouldn’t touch the entrée I was serving.”	11	6%	7%
Food and indulgence	Food is viewed as decadent, indulgent, rich; a way to “treat” or “spoil” children	“This decadent dessert is reserved for a holiday treat.” “Treat yourself by adding some hot fudge.”	8	4%	5%
Concern for child weight	Expresses worry or concern about a child being overweight or underweight	“My daughter is small for her age, so I make lunch easy to eat.”	1	< 1%	< 1%

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Table 2

Child Feeding Behaviors Coding Scheme: Code Names, Description, Examples, Frequencies, and Percentages of codes

Code	Description	Example	Frequency (<i>n</i>)	Percent of all behavior codes <i>N</i> = 100	Percent of all blog posts <i>N</i> = 158
Child involvement	Engages children in food preparation (e.g., selecting ingredients, stirring)	"I let the kids pick out their own toppings for these tacos."	42	42%	27%
		"This one bowl cake is perfect for little hands that want to help stir."			
Encourage balance and variety	Encourages children to eat a balanced and varied diet, particularly one that includes "healthy" foods (e.g., vegetables)	"I try to offer my kids as many different veggies as possible."	22	22%	14%
		"I make this fruit smoothie to brighten up the lunch box mid-week."			
Responsiveness	Responds to children's hunger and fullness cues and taste preferences in developmentally appropriate ways	"We've found a way to serve this veggie so that everyone in the family tries it."	13	13%	8%
		"Now that I have children, I make these sandwiches in a smaller size for their little hands."			
Indulgence	Children decide what/when/where food is eaten; Does not want to spend much time/energy on child feeding	"I make a big batch of this pudding so that my son can have it whenever he wants."	7	7%	4%
		"My son sneaked into the kitchen and helped himself to a cookie. I couldn't get			

		mad because I made them for him.”			
Food literacy	Explicitly teaches children about food, nutrition, and/or ingredients	“We visited a farm so that my kids could see where their food comes from.”	5	5%	3%
		“My plan is to let each kid pick out a different herb seed and we’ll talk about how we could use it in a favorite dish.”			
Pressure to eat	Attempts to get children to eat more food, regardless of hunger/satiety cues	“The kids have to take three bites of everything on their plate.”	3	3%	2%
		“I bribed him to eat more of the sandwich by promising some chips.”			
Modeling eating behavior	Intentionally demonstrates how to eat, particularly healthy, food	“Parents –you have to eat your veggies too!”	2	2%	1%
		“I don’t believe in fad diets and don’t want to model that lifestyle for my children.”			
Overt restriction	Limits children’s intake of a type or amount of food through obvious methods (e.g., won’t serve more of a food)	“My son asked for ice cream and I told my son he had enough sugar for the day.”	2	2%	1%
		“After making these treats together I hid them in the back of the freezer. I’m surprised the kids aren’t sneaking them.”			
Monitoring	Keeps track of what/when/where and	“To avoid feeding your children too	2	2%	1%

how much children eat, particularly high fat, high sugar foods

much sugar you have to read the food labels.”

“My kids get so many treats at school, parties, and even at practice for sports.”

Instrumental feeding	Uses food to reward good behavior, bribe, or to soothe negative emotions or promote positive affect	“I’ll bribe my kids for good behavior by telling them we can get a treat at the end.”	1	1%	< 1%
Covert restriction	Limits children’s intake of a type or amount of food through methods that are not perceptible to the child	“You can cut sugar out of this recipe easily without your little one even noticing.”	1	1%	< 1%

Table 3

Recipe Type Coding Results: Frequency, Foods/Beverages Coded, and Percentages of Codes

Code	Foods included in coded recipes	Frequency (n)	Percent of recipe type codes (%) N = 108	Percent of blog posts (%) N = 158
Mixed dishes	Pasta/noodle-based dishes (e.g., lasagna), Mexican-inspired wrap dishes (e.g., enchiladas), sandwiches, rice-based dishes (e.g., rice and beans), multi-component salads, soups, and breakfast dishes (e.g., quiche)	35	32%	22%
Sweets and desserts	Cookies, cake, pie, cheesecake, donuts, ice-cream, pudding	21	19%	13%
Grains and grain products	Sweetened grains (e.g., muffins, pancakes), rice, biscuits, crackers	17	16%	11%
Vegetables	Cauliflower, summer and winter squashes, sweet potatoes, kale, asparagus, tomatoes, cucumbers, radishes	12	11%	8%
Meat or other proteins	Beef, chicken, seafood, pork, yogurt, cheese	12	11%	8%
Condiments	Syrup, jam, dip	4	4%	3%
Beverages	Sweetened-milk and fruit-flavored drinks	3	3%	2%
Fat/oils	Flavored-oil and mayonnaise	2	2%	1%
Fruits	Strawberries	1	<1%	<1 %
Salty snacks	Popcorn	1	<1%	<1%

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Table 4
Comparison of Child Feeding Belief and Behavior Codes by Recipe and Non-Recipe Posts

Code	<i>n</i> (%) of recipe posts including code (<i>n</i> = 104)	<i>n</i> (%) of non-recipe posts including code (<i>n</i> = 54)	Pearson Chi-Square <i>p</i> -value
Children’s food preferences	51 (49%)	24 (44%)	0.58
Health values	19 (18%)	16 (30%)	0.10
Responsibility	13 (13%)	9 (17%)	0.47
Child involvement	29 (28%)	13 (24%)	0.61
Encourage balance and variety	14 (14%)	8 (15%)	0.82
Responsiveness	13 (13%)	0 (0%)	0.007*
Note: * = significant at Bonferroni corrected level (0.05 / 6 tests = <i>p</i> < 0.008)			

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Table 5

Comparison of Child Feeding Beliefs and Behaviors Codes by Recipe Type

Children's food preferences			
Recipe type	<i>n</i> (%) of recipe posts including Children's food preferences (<i>n</i> = 51)	<i>n</i> (%) of recipe posts not including Children's food preferences (<i>n</i> = 53)	Pearson chi-square test <i>p</i> -value
Mixed dish	19 (37%)	16 (30%)	0.45
Dessert	10 (20%)	11 (21%)	0.88
Grain	6 (12%)	11 (21%)	0.22
Vegetables	6 (12%)	6 (11%)	0.94
Protein	7 (14%)	5 (9%)	0.49
Health Values			
Recipe type	<i>n</i> (%) of recipe posts including Health values (<i>n</i> = 19)	<i>n</i> (%) of recipe posts not including Health values (<i>n</i> = 85)	Pearson chi-square test <i>p</i> -value
Mixed dish	8 (42%)	27 (32%)	0.39
Dessert	2 (11%)	19 (22%)	0.25
Grain	3 (16%)	14 (17%)	0.94
Vegetables	2 (11%)	10 (12%)	0.88
Protein	4 (21%)	8 (9%)	0.15
Responsibility			
Recipe type	<i>n</i> (%) of recipe posts including Responsibility (<i>n</i> = 13)	<i>n</i> (%) of recipe posts not including Responsibility (<i>n</i> = 91)	Pearson chi-square test <i>p</i> -value
Mixed dish	7 (54%)	28 (31%)	0.10
Dessert	3 (23%)	18 (20%)	0.78
Grain	0 (0%)	17 (18%)	0.09
Vegetables	2 (15%)	10 (11%)	0.64
Protein	1 (8%)	11(12%)	0.64
Child involvement			
Recipe type	<i>n</i> (%) of recipe posts including Child involvement (<i>n</i> = 29)	<i>n</i> (%) of recipe posts not including Child involvement (<i>n</i> = 75)	Pearson chi-square test <i>p</i> -value
Mixed dish	7 (24%)	28 (38%)	0.20
Dessert	11 (38%)	10 (13%)	0.005
Grain	2 (7%)	15 (20%)	0.11
Vegetables	2 (7%)	10 (13%)	0.36
Protein	3 (10%)	9 (12%)	0.81
Encourage balance and variety			
Recipe type	<i>n</i> (%) of recipe posts including Balance and variety (<i>n</i> = 14)	<i>n</i> (%) of recipe posts not including Balance and variety (<i>n</i> = 90)	Pearson chi-square test <i>p</i> -value
Mixed dish	2 (14%)	33 (37%)	0.10
Dessert	1 (7%)	20 (22%)	0.19

Grain	1 (7%)	16 (18%)	0.32
Vegetables	7 (50%)	5 (6%)	< 0.001*
Protein	1 (7%)	11 (12%)	0.58
Responsiveness			
Recipe type	<i>n</i> (%) of recipe posts including Responsiveness (<i>n</i> = 13)	<i>n</i> (%) of recipe posts not including Responsiveness (<i>n</i> = 91)	Pearson chi-square test <i>p</i> -value
Mixed dish	3 (23%)	32 (35%)	0.39
Dessert	3 (23%)	18 (20%)	0.78
Grain	4 (31%)	13 (14%)	0.13
Vegetables	2 (15%)	10 (11%)	0.64
Protein	0 (0%)	12 (13%)	0.16
Note: * = significant after Bonferroni correction (0.05 / 30 tests = $p < 0.002$)			