

KATHERINE W. BAUER *University of Michigan*

JACQUELINE M. BRANCH *Akron Children's Hospital*

DANIELLE P. APPUGLIESE *Appugliese Professional Advisors*

MEGAN H. PESCH, ALISON L. MILLER, JULIE C. LUMENG, AND NIKO KACIROTI *University of Michigan*

## Emerging Ideas.

# How Do Low-Income Mothers Talk to Children About Weight and Body Shape?

**Objective:** Identify mothers' perceptions of how they talk about weight and body shape with their children and examine how approaches vary by mother and child characteristics.

**Background:** Youth who report that their parents talk with them about their weight experience poor health. However, very little is known about the content of these conversations.

**Method:** Mothers and their 6- to 11-year-old children (N = 188 dyads) participated in a mixed-methods study. Themes in mothers' responses to the interview question "How do you talk to your child about weight or body shape?" were identified, and latent class analysis was used to characterize patterns of weight and shape talk.

**Results:** Seven themes of weight and shape talk were identified, including talking about "Healthy Habits" (39.9%), "Avoids Weight and Body Talk" (21.8%), and tells "Cautionary

Tales" (18.6%). Three patterns emerged from themes: talk to promote health, avoid talking about weight and shape, and talk to build children's self-esteem. Mothers of children with obesity were more likely to talk to promote health versus other patterns.

**Conclusion:** The content of family conversations about weight and shape is diverse.

**Implications for Emerging Ideas:** Future research is needed to understand the impacts of specific ways parents talk about weight and shape.

Weight talk, defined as comments made by family members about children's weight or that encourage weight loss (Golden et al., 2016), has been associated with adverse outcomes among children, including body dissatisfaction, depressive symptoms, disordered eating behaviors, excessive weight gain, and obesity (Balantekin et al., 2014; Bauer et al., 2013; Berge et al., 2013; Neumark-Sztainer et al., 2010; Quick et al., 2013). However, nearly all studies of weight talk have measured children's perceptions; few have included parents' perspectives (Gillison, 2016). Family Communications Patterns Theory posits that the quality and

Department of Nutritional Sciences, University of Michigan School of Public Health, University of Michigan, 1415 Washington Heights, Ann Arbor, MI 48109 (kwbauer@umich.edu).

**Key Words:** maternal behavior, parent-child relations, parenting, pediatric obesity, weight talk.

impact of family communications depend on the extent to which family members have shared perspectives (Koerner & Fitzpatrick, 2006). Therefore, it is essential to understand parents' perceptions of their engagement in family talk about weight. Further, previous research has almost exclusively measured the frequency of family weight talk using closed-ended questions. In some of these studies, questions explicitly probed for hurtful comments (e.g., "Has your mother ever said that you would look better if you were thinner?"; Berge et al., 2016). These studies do not provide insight into *what* is said when parents talk about weight with their children and limit the ability to identify whether some ways that parents talk about weight may be neutral or even positive.

Qualitative methodologies can provide insight into the content of family weight talk. Such approaches have only been used among one cohort of parents to understand the content and context of family weight talk (Berge, Trofholz, et al., 2015; Trofholz et al., 2018). In *Family Meals, LIVE!*, low-income parents were asked interview questions regarding the types of weight talk and teasing that occur in their homes and why families engage in weight talk and teasing. The majority of parents (71%) reported that weight talk and teasing occur in their homes, and many shared that weight talk and teasing were driven by concern over their children's weight and health. Although this study importantly identified common motivations for parents talking with children about weight, a limitation was the interchangeable use of "weight talk" and "teasing." This framing resulted in parents either interchangeably using these phrases or focusing on teasing.

As part of *Family Meals, LIVE!*, parents also were asked to provide examples of how they talk with their children about healthy eating, weight, and eating for weight loss or maintenance (Trofholz et al., 2018). Analysis revealed that few parents distinguish conversations about weight from those about healthy eating. Also, few parents reported making comments to their children encouraging them to lose weight. These results highlight the value of providing parents the opportunity to share how they talk about weight with their children. The content of these conversations may not align with commonly used survey-based measures that distinguish conversations about weight from those about eating and activity and those that only

ask about negative comments made by parents (Berge, MacLehose, et al., 2015).

In the current study, we aimed to expand our understanding of mothers' perceptions of how they talk about weight and body shape with their children and examine differences in these approaches by mother and child characteristics. To do so, we conducted a mixed-methods analysis of responses to an open-ended interview question completed by low-income mothers. Previous research suggests that lower income families are more likely to talk about weight than higher income families (Berge, MacLehose, et al., 2015; Eisenberg et al., 2011). Knowledge gained from eliciting mothers' perceptions of weight talk is needed to refine quantitative measures of weight talk and develop guidance to promote positive mother-child conversations about weight, bodies, and health.

## MATERIALS AND METHODS

### *Participants*

Low-income female primary caregivers (referred to in this work as mothers) and their 6- to 11-year-old children participated in the study ( $N = 188$  dyads). Nearly all of the dyads ( $n = 179$  of 188) were initially recruited to participate in the ABC Preschool study, conducted from 2009 to 2011, which aimed to understand relationships between child stress and growth. Dyads were recruited based on their participation in Head Start, the federally supported preschool program, in south-central Michigan. Nearly all children enrolled in Head Start have household incomes at or below the federal poverty line. Approximately 2 years after completing ABC Preschool, dyads were invited to participate in a follow-up observational study, ABC Feeding. Data for the current study were obtained during the second phase of ABC Feeding program conducted from 2013 through 2015. Nine dyads were newly recruited to supplement the ABC Feeding study sample via community advertisements, with the same inclusion and exclusion criteria as ABC Preschool. The study protocol was approved by the University of Michigan's Institutional Review Board. Mothers provided written informed consent for their and their children's participation and children provided assent.

On average, mothers were 34.1 years old ( $SD = 7.5$ ), with 69% identifying as

non-Hispanic White, 15.7% non-Hispanic Black, 8.1% biracial, 6.5% Hispanic/Latina, and 0.5% Native American. Approximately one-fifth (18.4%) reported that they did not complete high school, 26.5% reported that high school or a GED was their highest level of educational attainment, 43.2% had completed some college courses, and 11.9% completed a 2-year degree. Approximately 61% of mothers had a body mass index (BMI) in the obese weight status category ( $\geq 30 \text{ kg/m}^2$ ), and 24% of children had a BMI in the obese weight status category ( $\geq 95$ th percentile of age and sex-specific BMI). Children were on average 8.5 years old ( $SD = 0.9$ ); 90% of children were between 6.8 and 10.2 years old.

#### *Data Collection Procedures*

During ABC Feeding Phase 2 study visits, trained study staff measured mothers' and children's height and weight to determine BMI and weight status. Mothers also completed a series of questionnaires through which they reported their race, ethnicity, and educational attainment. Finally, mothers participated in a semistructured qualitative interview administered by trained study staff. The semistructured interview, conducted without children present, consisted of open-ended questions regarding mothers' beliefs about child weight and eating. Interviews were audio-recorded and transcribed verbatim. The development and administration have been described previously (Goulding et al., 2015). During the interview, mothers were asked the question "How do you talk to your child about weight or body shape?" Mothers were provided the opportunity to say as much or as little as they chose in response. If mothers' responses were not clear or the interviewer perceived mothers wanted to say more, interviewers were encouraged to prompt the mother for additional information using neutral phrases, such as "Tell me more about that."

#### *Analysis*

Transcripts of mothers' responses were analyzed using the constant comparative method (Glaser & Strauss, 1967). First, two study team members read 50 responses to the interview question chosen at random and independently identified themes in mothers' responses. Through an iterative process, the team members then refined their

themes using the constant comparative model; disagreements between the two team members were discussed and themes further refined or expanded until consensus between the team members was achieved. This process resulted in a list of seven themes that represented the most frequent and salient content of mothers' weight and body shape talk. A detailed coding scheme was then collaboratively developed by the team members to aid reliable characterization of the presence or absence of each of these seven themes in each mother's response.

Once the coding scheme was complete, team members applied the coding scheme to 30 interviews to establish reliability. The threshold for reliability (Cohen's kappa  $> 0.70$ ) was met or exceeded for all seven themes the first time the team members applied the coding scheme (Cohen's kappa 0.71–1.00). For cases where codes were discrepant, discrepancies were discussed, and team members agreed on the appropriate code(s). After this process, the remainder of the interviews were coded by a single team member. This approach to transforming qualitative data into quantitative data has been described previously (Sandelowski et al., 2009). Nineteen mothers' responses were not represented in the seven themes and 25% of mothers provided responses that were coded as more than one theme.

Univariate statistics were calculated to describe the study sample. Because some mothers' responses were coded as more than one theme, a Bayesian latent class analysis was conducted via Markov Chains Monte Carlo simulations in R (<https://www.r-project.org>) allowing for identification of underlying cohesive patterns of themes. The number of classes was determined based on several criteria: Deviance Information Criteria (DIC; Spiegelhalter et al., 2014), Bayesian Information Criteria Monte Carlo (Raftery et al., 2007), and Akaike Information Criteria Monte Carlo (Raftery et al., 2007). Brief names were developed to describe each of the latent classes. Following the identification of latent classes, general linear models for continuous measures and Fisher's exact test for categorical measures were used to examine associations between mothers' latent class membership and mothers' race/ethnicity, educational attainment, and weight status (obesity vs. not) and children's age, gender, and weight status (obesity vs. not). A  $p$  value less than .05 indicated statistical significance.

## RESULTS

*Qualitative Analysis*

“Healthy Habits” was the most common theme (39.9% of responses). Mothers whose talk reflected “Healthy Habits” discussed the importance of healthy eating, exercising, and taking care of your body with their children. These behaviors may include eating less, eating healthy foods, eating smaller portions, and participating in sports or physical activity. For example, one mother said, “So she’s kind of learning that, you know—what you eat, what you do, what you put in your body—it all affects how you’re gonna move when you get older.” Mothers may discuss that these behaviors are important to prevent future consequences of excess weight, such as health consequences, mobility consequences, or activity limitations. Some mothers expressed concern, and even fear, about their child’s future health. Meanwhile, other mothers described their children as very active and thus discussions focused on maintaining those activity levels so children can continue to be healthy as adults.

“Avoids Weight and Body Talk” was the second most common theme, with 21.8% of responses coded as such. Some mothers who avoid talking about weight and body shape with their children stated that they didn’t “have to” talk about it yet, either because the child is young or hasn’t reached puberty yet, or because their child is lean. When asked how she talks about weight and body shape with her child, one mother said, “I don’t. I mean she knows about that but we don’t really have conversations about it. She understands how much she weighs, and we don’t have conversations about it though.” Other mothers were hesitant to talk to their children about weight out of concern for damaging their self-esteem. For example, one mother stated that she did not want to give her son a “complex” and another said, “I don’t want her to become a teenager and then be worried about her weight.”

A similar proportion of mothers (18.6% of responses) shared that they spoke about weight and body shape with their children by referring to themselves or another family member as “Cautionary Tales” of the struggles people of higher weight experience. For example, one said, “I mainly just tell her you know, like, look, CHILD, look at your belly. I don’t want you to be like mommy.” Some of these mothers spoke of

how they discuss how people in their family are overweight or “thick.” One mother shared that she talks to her daughter about weight because “I’ve just struggled with it [weight] the last, like five years and it’s tough and it’s hard and it’s not fun at all.” While some mothers relayed somber stories such as this, others reported that they communicated similar messages but in a joking way, for example, laughing about how their child shouldn’t become “big and fat” like them.

Some mothers (14.4% of responses) engaged in “Prosocial Teaching,” discussing how their children should not tease others because of their weight or body shape. These discussions often occurred after a child made fun of someone with excess weight with mothers telling their children, “it’s not okay to make fun of somebody like that” and “everybody’s different.” Some mothers expressed embarrassment over their child making fun of someone who has overweight or obesity. For example, one mother shared, “He learned about body fat in school and we had an issue with him walking up to random people we didn’t know and be like, “Excuse me! Do you know you have too much body fat?” I was like, “Oh! We can’t do that! We can’t do that!”

Other mothers (13.3% of responses) discussed how they engage in “Self-Esteem Building” when they talk with their children about weight and body shape. These mothers try to convey that their children are beautiful and the importance of loving one’s body. Many of these mothers spoke of how they tell their children that they are meant to be this way and perfect the way they are. For example, one mother said, “I always tell her just be glad at what God gave you.” Others emphasized that, “It’s what’s on the inside that counts” and “It’s not about what she looks like on the outside, it’s what she feels on the inside.”

A small proportion of mothers (6.4% of responses) engaged in “Parental Teasing”—teasing or joking with their child about their body. One of these mothers shared that she tells her children that they will get “bellies” as they grow and that her family jokes as a way to normalize the experience. Other mothers recognize that their comments are harsh. For example, one mother shared that she comments, “You’re gonna get fat sitting in here playing on video games all day.” while another said, “We goof around. We pat our stomachs. We just goof around about it. Well, I mean, I’ll pick on myself so she’ll pick on herself or we pick on

Table 1. Item Posterior Probabilities for Each Latent Class

	Pattern 1: Talk to promote health <i>n</i> = 125 (66.5%)	Pattern 2: Avoid talking <i>n</i> = 41 (21.8%)	Pattern 3: Talk to build self-esteem <i>n</i> = 22 (11.7%)	<i>p</i> value <sup>a</sup>
Healthy habits	0.65 ± .12	0.03 ± .02	0.16 ± .14	<.001
Avoids weight and body talk	0.01 ± .01	0.91 ± .08	0.07 ± .13	<.001
Cautionary tales	0.24 ± .05	0.09 ± .05	0.23 ± .19	.01
Prosocial teaching	0.19 ± .05	0.05 ± .04	0.17 ± .15	.01
Self-esteem building	0.07 ± .05	0.03 ± .03	0.58 ± .24	<.001
Parental teasing	0.07 ± .03	0.03 ± .02	0.21 ± .18	.10
Responds to teasing	0.06 ± .03	0.03 ± .01	0.15 ± .13	.16

Note. <sup>a</sup>*p* values represent outcomes of tests of differences in predicted probabilities.

each other. I mean, so it's just like, just silly stuff. I mean, I don't wanna pick on her—tell her she's getting fat or she'll—we'll pick on each other.”

Finally, a small proportion of mothers (4.8% of responses) “Respond to Teasing,” discussing weight and body shape with their children because their children have been teased about their weight. For example, one mother said, “Most of the time we talk about it when he's upset when somebody at school's made fun of him for it. And you know we tell him—I have to tell him, you know mommy made—was made fun of for being a big girl and it just happens. Kids are mean but it's gonna happen all—you know all your life. You just gotta stay active.” Many of these mothers discussed how siblings were the source of the teasing. In response to teasing, some mothers reported that they told their child that teasing will happen and reminded them that there are many good qualities about being big. Whereas other mothers suggested to their child that the children who tease are mean or perhaps “jealous” of their child.

*Quantitative Analysis*

A three-class model was optimal to represent the latent patterns of the seven weight and body-shape talk themes. The patterns were as follows: Pattern 1, Talk to Promote Health (66.5% of mothers); Pattern 2, Avoid Talking (21.8% of mothers); and Pattern 3, Talk to Build Self-Esteem (11.7% of mothers). Table 1 includes the posterior probability of each theme loading onto each latent class. Pattern 1, Talk to Promote Health, is predominantly represented by mothers who talk to their children about healthy eating and exercise (posterior

probability = 0.65), as well as mothers who refer to themselves or family members when talking about weight (posterior probability = 0.24) and talk to their children about the importance of not teasing others (posterior probability = 0.19). Pattern 2, Avoid Talking, represents mothers who responded that they don't talk with their children about weight or body shape (posterior probability = 0.91). Mothers categorized as Pattern 3, Talk to Build Self-Esteem, often responded that they focus on building their child's self-esteem and confidence (posterior probability = 0.58); mothers classified as this pattern also were more likely than mothers in other patterns to joke or tease about weight (posterior probability = 0.21) and also were more likely to report that they talked about weight and body shape because their child had been teased (posterior probability = 0.15). Mothers who used these different patterns did not differ by race/ethnicity or educational attainment, and the prevalence of obesity among mothers using each of these patterns was similar (Table 2). Further, children's age or gender were not associated with patterns of talking about weight or body shape. However, mothers who talk to promote health were more likely to have a child with obesity (29.8% of children) than mothers who avoid talking (7.5% of children) or who talk to build self-esteem (18.2% of children; *p* = .001).

CONCLUSION/IMPLICATIONS

The purpose of this study was to identify how low-income mothers talk about weight and body shape with their children and examine differences in these discussions by mother and child characteristics. The majority of mothers (78%) talked about weight and body shape with their



Table 2. Associations Between Weight and Body Shape Talk Patterns and Mother and Child Characteristics

	Pattern 1: Talk to promote health <i>n</i> = 125 (66.5%)	Pattern 2: Avoid talking <i>n</i> = 41 (21.8%)	Pattern 3: Talk to build self-esteem <i>n</i> = 22 (11.7%)	<i>p</i> value <sup>a</sup>
Non-Hispanic White mothers, <i>n</i> (%)	81 (66.4)	29 (70.7)	18 (81.8)	.36
Mothers with high school degree/GED or less, <i>n</i> (%)	56 (45.9)	20 (48.8)	7 (31.8)	.41
Mothers with obesity, <i>n</i> (%)	83 (66.4)	19 (46.3)	15 (68.2)	.06
Child age in months (mean $\pm$ <i>SD</i> )	70.9 $\pm$ 9.1	70.2 $\pm$ 8.2	73.1 $\pm$ 5.9	.43
Children male gender, <i>n</i> (%)	69 (56.6)	21 (51.2)	9 (40.9)	.39
Children with obesity, <i>n</i> (%)	36 (29.8)	3 (7.5)	4 (18.2)	.001

Note. <sup>a</sup>*p* values from Fisher's exact test for categorical predictors and analysis of variance for continuous predictors.

children. The remaining proportion reported that they do not discuss weight or body shape with their children—some mothers did not feel their child's weight or body shape are a concern and others were driven by a desire not to make their child feel bad. Relatively few differences in mothers' patterns of weight talk were identified by sociodemographic characteristics; however, mothers of heavier children are more likely to emphasize health outcomes when talking with their children about weight.

Many mothers talk about weight and body shape as means to help promote children's healthy eating and activity, and avoid health complications. Previously used survey-based measures of family weight-related conversations strictly distinguish conversations about eating and activity from conversations about weight (Berge, MacLehose, et al., 2015; Golden et al., 2016). However, most mothers did not make this distinction in their interview responses. New approaches with which to measure the content and frequency of weight-related conversations that account for the intertwined nature of these topics are needed. Such refinements in the conceptualization and measurement of weight talk can advance our understanding of the impacts of talking about weight and body shape with children.

Similar to Berge, Trofholz, et al. (2015), the current study identified that many mothers discussed weight and body shape with their children because they are concerned about their children's health and have a strong desire for their children to be healthier than themselves or other family members. Hillard et al. (2016) observed that in families where mothers encouraged their daughters to diet, mothers sharing of their personal weight concerns mitigated some harm of this encouragement on disordered eating.

Conversations that increase connection and comradery between mothers and children with respect to weight may be beneficial. Further, *family communications patterns theory* stresses that the context of family conversations, and families' communication typologies, moderate the impact of specific communications among family members (Koerner & Fitzpatrick, 2006). Weight and body shape conversations that are protective for children in one family may not be in another. However, if further research identifies that talking about weight in the context of promoting health and in ways that are intended to build self-esteem are in fact harmful, efforts to modify mothers' behavior will need to promote alternative conversation strategies that align with mothers' parenting goals.

### Limitations

The primary limitation of this study is the use of a single interview question. Use of additional questions—for example, probing mothers to provide specific examples of conversations they have had with their children or using methods that capture family conversations such as LENA technology—would provide greater insight into mothers' motivations and actions concerning weight and body shape talk. Further, mothers may have provided socially desirable responses to the interview question, and it is not possible to verify their behavior.

Children's perceptions were not measured. It would be beneficial to objectively identify how mothers and children are talking about weight and bodies, as well as understand how children "hear" messages relayed by diverse approaches to talking about weight and shape in diverse family contexts. Finally, findings may not be generalizable to higher income populations or

mothers and children of other ages. Further research to understand how what is being said regarding children's weight and bodies, and how it is being said, varies across families of differing sociodemographics is needed.

### Implications

The current perspective that all weight talk is negative and harmful is firmly entrenched. However, our study challenges this belief by using qualitative methods, which have rarely been used before in this domain, to identify that the majority of mothers engage in weight talk to protect their children from harm. Many mothers discuss weight and body shape with their children to transmit information about eating and activity; some mothers seek to promote their children's self-esteem by talking about weight and shape, and others avoid weight and shape talk with their children. Given this diversity in why and how mothers talk about weight and body shape, further research is needed to accurately assess whether diverse and distinct approaches to talking about weight and body shape with children may have differing impacts on children's psychological and physical health.

### REFERENCES

- Balantekin, K. N., Savage, J. S., Marini, M. E., & Birch, L. L. (2014). Parental encouragement of dieting promotes daughters' early dieting. *Appetite, 80*, 190–196. <https://doi.org/10.1016/j.appet.2014.05.016>
- Bauer, K. W., Bucchianeri, M. M., & Neumark-Sztainer, D. (2013). Mother-reported parental weight talk and adolescent girls' emotional health, weight control attempts, and disordered eating behaviors. *Journal of Eating Disorders, 1*, 45. <https://doi.org/10.1186/2050-2974-1-45>
- Berge, J. M., Hanson-Bradley, C., Tate, A., & Neumark-Sztainer, D. (2016). Do parents or siblings engage in more negative weight-based talk with children and what does it sound like? A mixed-methods study. *Body Image, 18*, 27–33. <https://doi.org/10.1016/j.bodyim.2016.04.008>
- Berge, J. M., MacLehose, R., Loth, K. A., Eisenberg, M., Bucchianeri, M. M., & Neumark-Sztainer, D. (2013). Parent conversations about healthful eating and weight: Associations with adolescent disordered eating behaviors. *JAMA Pediatrics, 167*(8), 746–753. <https://doi.org/10.1001/jamapediatrics.2013.78>
- Berge, J. M., MacLehose, R. F., Loth, K. A., Eisenberg, M. E., Fulkerson, J. A., & Neumark-Sztainer, D. (2015). Parent–adolescent conversations about eating, physical activity and weight: Prevalence across sociodemographic characteristics and associations with adolescent weight and weight-related behaviors. *Journal of Behavioral Medicine, 38*(1), 122–135. <https://doi.org/10.1007/s10865-014-9584-3>
- Berge, J. M., Trofholz, A., Fong, S., Blue, L., & Neumark-Sztainer, D. (2015). A qualitative analysis of parents' perceptions of weight talk and weight teasing in the home environments of diverse low-income children. *Body Image, 15*, 8–15. <https://doi.org/10.1016/j.bodyim.2015.04.006>
- Eisenberg, M. E., Berge, J. M., Fulkerson, J. A., & Neumark-Sztainer, D. (2011). Weight comments by family and significant others in young adulthood. *Body Image, 8*(1), 12–19. <https://doi.org/10.1016/j.bodyim.2010.11.002>
- Gillison, F. (2016). Can it be harmful for parents to talk to their child about their weight? A meta-analysis. *Preventive Medicine, 93*, 135–146.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine Pub. Co.
- Golden, N. H., Schneider, M., Wood, C., Committee On, N., Committee On, A., & Section On, O. (2016). Preventing Obesity and Eating Disorders in Adolescents. *Pediatrics, 138*(3). <https://doi.org/10.1542/peds.2016-1649>
- Goulding, A. N., Lumeng, J. C., Rosenblum, K. L., Chen, Y. P., Kaciroti, N., & Miller, A. L. (2015). Maternal feeding goals described by low-income mothers. *Journal of Nutrition Education and Behavior, 47*(4), 331–337 e331. <https://doi.org/10.1016/j.jneb.2015.03.012>
- Hillard, E. E., Gondoli, D. M., Corning, A. F., & Morrissey, R. A. (2016). In it together: Mother talk of weight concerns moderates negative outcomes of encouragement to lose weight on daughter body dissatisfaction and disordered eating. *Body Image, 16*, 21–27. <https://doi.org/10.1016/j.bodyim.2015.09.004>
- Koerner, A. F., & Fitzpatrick, M. A. (2006). Family communication patterns theory: A social cognitive approach. In D.O. Braithwaite & L. A. Baxter (Eds.), *Engaging theories in family communication: Multiple perspectives (pp. 50–65)*. Sage Publications.
- Neumark-Sztainer, D., Bauer, K. W., Friend, S., Hannan, P. J., Story, M., & Berge, J. M. (2010). Family weight talk and dieting: How much do they matter for body dissatisfaction and disordered eating behaviors in adolescent girls? *Journal of Adolescent Health, 47*(3), 270–276.
- Quick, V., Wall, M., Larson, N., Haines, J., & Neumark-Sztainer, D. (2013). Personal, behavioral

- and socio-environmental predictors of overweight incidence in young adults: 10-yr longitudinal findings. *The International Journal of Behavioral Nutrition and Physical Activity*, *10*, 37. <https://doi.org/10.1186/1479-5868-10-37>
- Raftery, A. E., Newton, M. A., Satagopan, J. M., & Krivitsky, P. N. (2007). Estimating the integrated likelihood via posterior simulation using the harmonic mean identity. *Bayesian Statistics*, *8*, 1–45.
- Sandelowski, M., Voils, C. I., & Knafl, G. (2009). On Quantitizing. *J Mix Methods Res*, *3*(3), 208-222. <https://doi.org/10.1177/1558689809334210>
- Spiegelhalter, D. J., Best, N. G., Carlin, B. P., & van der Linde, A. (2014). The deviance information criterion: 12 years on. *Journal of the Royal Statistical Society: Series B—Statistical Methodology*, *76*(3), 485–493. <https://doi.org/10.1111/rssb.12062>
- Trofholz, A. C., Tate, A. D., & Berge, J. M. (2018). An exploration of the frequency, location, and content of parents' health- and weight-focused conversations with their children and associations with child weight status. *Eating Behaviors*, *29*, 137–143. <https://doi.org/10.1016/j.eatbeh.2018.03.007>