Providers' response to child eating behaviors: A direct observation study

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ABSTRACT

Child care providers play an important role in feeding young children, yet little is known about children's influence on providers' feeding practices. This qualitative study examines provider and child (18 months –4 years) feeding interactions. Trained data collectors observed 200 eating occasions in 48 family child care homes and recorded providers' responses to children's meal and snack time behaviors. Child behaviors initiating provider feeding practices were identified and practices were coded according to higher order constructs identified in a recent feeding practices content map. Analysis examined the most common feeding practices providers used to respond to each child behavior. Providers were predominately female (100%), African-American (75%), and obese (77%) and a third of children were overweight/obese (33%). Commonly observed child behaviors were: *verbal and non-verbal refusals*, *verbal and non-verbal acceptance*, *being "all done"*, *attempts for praise/attention*, and *asking for seconds*. Children's acceptance of food elicited more autonomy supportive practices vs. coercive controlling. Requests for seconds was the most common behavior, resulting in coercive controlling practices (e.g., insisting child eat certain food or clean plate). Future interventions should train providers on responding to children's behaviors and helping children become more aware of internal satiety and hunger cues.

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1. Background

Formation of dietary intake patterns, eating behaviors, and food preferences begin in early childhood (Cashdan, 1994; Dwyer, Suitor, & Hendricks, 2004; Skinner, Carruth, Wendy, & Ziegler, 2002) and are greatly influenced by children's adult caregivers (Davison & Birch, 2001; Ritchie, Welk, Styne, Gerstein, & Crawford, 2005). During early childhood, these adult caregivers include not only the child's parents/guardians but often child care providers. Over 60% of children under the age of 5 regularly spend time under someone else's care (Flynn et al., 2006; Johnson, 2005; Nicklas et al., 2001; Story, Kaphingst, & French, 2006). For children in full-time child care, approximately 50% of their daily dietary intake comes from meals and snacks eaten in this setting (Bollella et al., 1999; Gubbels, Raaijmakers, Gerards, & Kremers, 2014; Padget & Briley, 2005).

Adult caregivers help shape children's food intake and eating behaviors through their feeding practices (Cooke, Chambers, Anez, & Wardle, 2011; Gibson et al., 2012; McGowan, Croker, Wardle, & Cooke, 2012; Pearson, Biddle, & Gorely, 2009; Vereecken, Keukelier, & Maes, 2004). For example, parents' use of autonomy supportive practices such as encouragement and praise have been associated with higher dietary quality (e.g., high fruit and vegetable intake) (Vollmer & Mobley, 2013); while their use of coercive practices such as restriction and pressure to eat have been associated with poorer dietary quality (e.g., low intake of fruits and vegetables and high intake of sweet and savory snacks) and eating habits (e.g., eating in the absence of hunger) (Berge, 2009; Blissett, 2011; Blissett, Meyer, & Haycraft, 2006). Studies with child care providers are limited; however, their feeding practices are thought to have a similar influence on children's food intake and eating

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behaviors (Dev, McBride, & Team, 2013). Child care providers use of enthusiastic role modeling (Hendy, 1999; Hendy & Raudenbush, 2000) and talking with children about healthy foods (Gubbels et al., 2010) have been associated with healthier eating habits in children.

Recent studies also suggests that not only are caregiver feeding practices influencing child eating habits, but child characteristics (e.g., behaviors, temperament, weight status) influence caregivers' use of certain feeding practices. For example, child behaviors such as food refusals have been shown to elicit more frequent prompts to eat by parents (H. Bergmeier, Skouteris, & Hetherington, 2015; Klesges, Malott, Boschee, & Weber, 1986). In addition, child temperamental traits such as low adaptability to new situations and low persistence in the face of obstacles have been associated with greater use of pressure to eat and restriction by parents (Horn, Galloway, Webb, & Gagnon, 2011). Child weight, specifically being overweight/obese, has also been associated with parents' use of discouragement or negative comments during meals and restriction of energy dense snack foods (H. Bergmeier et al., 2015; H. J. Bergmeier, Skouteris, Haycraft, Haines, & Hooley, 2015; P. W. Jansen et al., 2014; May et al., 2007). Exploration of these relationships is a relatively new area of research focused exclusively to date on parent-child interactions. Given the important role that child care providers currently play in feeding young children (Fox et al., 1997), better understanding of these provider-child feeding interactions is important. Knowing such information could help inform future intervention efforts. This qualitative study begins to address this critical gap in the literature by using direct observation to examine these provider-child feeding interactions within an intimate child-care child care setting, family child care homes (FCCH).

2. Methods

This study is part of a larger ongoing cluster-randomized trial to study the efficacy of an intervention ("Keys to Healthy Family child care Homes") designed to help FCCH providers model healthy lifestyle behaviors, provide supportive food and physical activity environments, and implement effective business practices (Østbye et al., 2015). To be eligible, FCCHs had to have at least two children currently enrolled who are between the ages of 18 months and 4 years, serve at least one meal and one snack, and have been in business for two years with no plans to close in the coming year. For data collection, FCCH providers completed self-administered surveys (including demographic information) and allowed a two-day visit at their home. During this visit, trained data collectors conducted an observational assessment of the home's nutrition and physical activity environment (using a modified version of the Environmental Policy Assessment and Observation (EPAO) tool (Ward et al., 2008) and measured height and weight of the provider and participating children using procedures similar to those used in NHANES (Centers for Disease Control). Height and weight measures were used to calculate body mass index (BMI), and sex-specific growth charts from the Centers for Disease Control and Prevention were used to calculate children's BMI percentile (Centers for Disease and Prevention, 2000). All study protocols were approved by the Institutional Review Boards at the University of North Carolina at Chapel Hill and Duke University.

For the current study, the EPAO was further modified to capture providers' responses to children's eating behaviors. This modification added prompts to data collectors to capture brief descriptions of episodes where children's behaviors influenced providers' feeding practices. Data collectors collected these descriptions for all meals and snack times observed (typically including breakfast, lunch and afternoon). A study-specific 1.5 h training was incorporated into the existing EPAO training protocol. This training was

conducted by the lead author (AT) and provided data collectors with examples and possible scenarios of what children might do or say to elicit such interaction. Data collectors were instructed to look for child behaviors such as verbal and nonverbal food refusal, food acceptance, food requests (e.g. asking for seconds/more, wanting praise/attention), and lost hunger/interest in food (e.g. playing with food, talking, leaving the table, "all done"). These examples were identified based on previous work video-taping provider-child interactions in FCCHs in Rhode Island (Tovar, Vaughn, Fallon, & Ward, 2015) and discussions between investigators and experienced data collectors. While these specific examples were given to data collectors to provide guidance around appropriate types of interactions to capture, data collectors were also instructed to capture descriptions of any observed interactions they thought might be relevant. These written episode descriptions captured the child behavior that initiated the interaction and the subsequent provider response.

This additional information was collected through observation of 48 family child care providers, of which 28 had data on two days and 20 had data on one day, resulting in a total of 214 observed meals (70 breakfasts, 76 lunches and 68 snack times). The data collected represents the children who spoke during the meal or who elicited a non-verbal gesture (e.g. pushing plate away). The qualitative data captured in these observations provided descriptions of the interactions only, but no labeling or categorization of provider feeding practices and child behaviors. Once data collection was complete, all hand-written descriptions were typed into Word. Eighteen descriptions were illegible and could not be transcribed.

Analysis of these data began with a general review and discussion of all written descriptions (conducted by MF and AT) (Krueger, 2000). A recently developed food parenting practices content map (Vaughn et al., 2016) helped guide the coding of the data and categorization of provider practices into three higher order constructs: coercive control, structure, or autonomy support. *Coercive control* reflects attempts to dominate, pressure or impose the provider's will upon the child and includes practices such as restriction, pressure to eat, threats and bribes, and soothing with food. *Structure* is a provider's way of organizing a child's environment to facilitate the child's competence and includes rules and limits, monitoring, meal and snack time routines, modeling, food availability and accessibility, food preparation, and permissiveness. *Autonomy support* provides sufficient structure within which the child can be involved in making food choices that are developmentally appropriate and includes guided choices, child involvement, encouragement and support, praise, reasoning, and negotiation. Based on this content map a codebook with definitions and examples was developed and utilized throughout the coding process. These higher order constructs were used as structural codes to categorize the data (Guest, MacQueen, & Namey, 2011). With the codebook and definitions being used, the transcripts were systematically reviewed whereby text segments were assigned to corresponding structural codes and then categorized into themes. Interactions that were not relevant or useful were removed. Once organized into central themes, child initiated interactions were further categorized into feeding practices that were consistent with autonomy supportive practices or coercive controlling practices, based on how the provider reacted to a child. Throughout the coding process, MF and AT met to discuss findings and reach consensus when there were disagreements and/or when there were questions about coding, by revisiting the parenting content map. Total interactions were summed to calculate frequencies and percentages. Differences of interactions consistent with autonomy supportive practices vs. those that were consistent with coercive controlling were explored across different meal types (breakfast,