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A qualitative application of the Belsky Model to explore early care and education teachers' mealtime history, beliefs, and interactions

Taren M. Swindle, Ph.D.^a, Zachary Patterson, B.A.^a, and Carrie Boden McGill

^aDepartment of Family and Preventive Medicine, University of Arkansas for Medical Sciences, 4301 W. Markham St, #530, Little Rock, AR 72205-7199; United States of America

^bDepartment of Occupational, Workforce, and Leadership Studies, Texas State University 601 University Drive | San Marcos TX 78666; United States of America

Abstract

Objective—Studies on factors associated with nutrition practices in early care and education settings often focus on socio-demographic and programmatic characteristics. This qualitative study adapts and applies Belsky's Determinants of Parenting Model to inform a broader exploration of Early Care and Education Teachers (ECETs) practices.

Design—Qualitative cross-sectional study with ECETs

Setting—ECETs were interviewed in their communities across a Southern state.

Participants—Purposive sampling was employed to recruit ECETs (N = 28) from Head Start or state-funded centers serving low-income families.

Phenomenon of Interest—ECETs' developmental histories of food and nutrition, beliefs about child nutrition, and teaching interactions related to food

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

Results—Three distinct interrelationships across the themes were observed. First, rules and routines around food and mealtime in the educators' childhood often aligned with educator beliefs and behaviors at meals in their classroom. Second, ECETs described motivations to leave a healthy food legacy for children in their class. Finally, an experience of food insecurity appeared in narratives that also emphasized making sure children get enough through various strategies.

Conclusions and Implications—The influence of ECET developmental histories and their related beliefs can be addressed through professional development and ongoing support. Future study should quantify model constructs in a larger sample and study their relationships over time.

Corresponding Author: Taren M. Swindle, UAMS Department of Family and Preventive Medicine; United States of America, 4301 W. Markham St, #530, Little Rock, AR 72205-7199; Phone: (870) 236-0997 Fax: (501) 686-8421, tswindle@uams.edu.

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Keywords

early care and education; child care; nutrition; obesity prevention; mealtime

Introduction

Effective obesity prevention and nutrition promotion efforts for children require consideration of the variety of contexts in which children develop and interact.¹ One potentially important setting is childcare. A typical child will spend 33 hours in childcare each week.² Given preschool schedules and the average amount of time spent in care, children may eat over half of their total dietary intake in an early educational setting.³ In this environment, early care and education teachers (ECETs) regulate the climate in which meals and food interactions occur and lead the classroom culture around food.⁴

Studies suggest that ECETs have an impact on children's dietary intake at meals. For example, children are more likely to eat foods served when ECETs model intake of the food enthusiastically.⁵ Authoritative feeding practices of educators, such as providing repeated exposures and offers to children to handle and taste foods, are related to increased consumption of those foods.^{6,7} Allowing children to serve themselves is related to increased consumption of fruits and vegetables compared to ECETs serving the food.⁸ Further, explaining meal preparation and involving children in preparation are related to healthier dietary intake (i.e., more fruit, less sweets, respectively).⁹ These positive effects suggest that early education settings are a promising setting for promoting healthy diets for children.

The potential positive impact of ECETs on children's diets may be limited given the variability in ECET use of best practice for nutrition promotion and obesity prevention. A 2011 review by Larson and colleagues¹⁰ found that ECETs' classrooms practices commonly included failure to signal hunger cues, using unhealthy foods for celebration, and pressuring children to eat more. Failure to use recommended feeding strategies predicts poorer outcomes for children. For example, commands to eat food are related to less intake, and providing rewards for eating certain foods results in later decreased preference.^{11,12} In contrast, a recent systematic review of interventions in early care and education settings designed to improve obesity and nutrition outcomes in young children demonstrated that 72% of reviewed interventions (2010 – 2015) demonstrated positive impacts on dietary intake of children.¹³ Components related to the success of these interventions were duration, number of intervention strategies, and frequency. Together, these findings suggest that these settings can, but may not be, leveraged to have a positive influence on children.

Factors that impact the mealtime and obesity prevention practices of educators are not fully understood. Available studies have observed demographic differences in feeding practices. For example, ECETs with lower education levels and of Hispanic ethnicity are more likely to pressure children to finish their food,¹⁴ more likely to use restrictive feeding practices (e.g., offer food for good behavior), and less likely to eat with the children.¹⁵ Programmatic factors have also been explored with Head Starts and centers receiving Child and Adult Care Food Program funds faring better in terms of reported use of best practices such as role modeling and creating positive mealtimes.^{16,17} While these studies provide a foundation of

factors for understanding ECET practices, additional theoretically-grounded approaches to considering factors that impact ECETs may be beneficial. Defining theoretical constructs using the voices of ECETs and laying the foundation to propose associations between constructs may be helpful for future training programs and interventions to change ECET practices.

Belsky's determinants of parenting model¹⁸ presents the socialization process of parenting practices and the relationship of parenting to child outcomes. In the Belsky model, parents' developmental history (i.e., childhood experiences of stress, mistreatment, and parental involvement) is modeled to predict personality (e.g., personal maturity, psychological well-being, sensitivity) which, in turn, is predicted to drive parenting (e.g., warmth, stimulation, attention). The chain of influence is expected to be moderated and mediated by parents' sources of support: marital relations, work, and social network. Further, child characteristics (e.g., temperament) are modeled to predict both parenting and child development. Parenting is conceived to have a direct impact on child development as well. In brief, the Belsky model explores "why parents parent they way they do (p 83)" and may be similarly useful to understand why teachers teach the way they do. This application builds on prior work of Mita and colleagues who found that ECETs viewed mealtime as a bonding experience in which ECETs and children became a "mini-classroom family."⁴ The Belsky model provides one lens through which the field may better understand the determinants of practices used during these interactions.

In this study, the Belsky model was narrowed and adapted to inform the development and analysis of qualitative interviews with ECETs. The direct path between developmental history, personality, and teaching interactions, conceived as the foundation of the model, was the focus for this study. This emphasis acknowledges the central role that personal psychological resources play in understanding parent's interaction with children relative to other model constructs. This focus also recognizes Belsky's claim that the potential confounds of parents' sources of support (marital relations, work, and social network) may be shaped by parents' developmental history and personality. By understanding these foundational constructs in detail, this study seeks to lay the groundwork for future studies to explore potential mediating and moderating factors (i.e., indirect pathways) in greater detail in both qualitative and quantitative investigations. Further, the model was adapted to focus on one potential salient and tangible aspects of ECEs' personality, their beliefs. Finally, the parenting construct was adapted to teaching interactions.

Methods

Research Design

We conducted 28 in-person interviews with early educators across a Southern state between February 2015 and May 2015. Before beginning the interview, all participating teachers were provided with a detailed description of the study and an opportunity to ask questions. Per IRB protocol, verbal (but not written) consent was obtained. Participation was voluntary and could be withdrawn at any time. Using the interview guide, the research assistant addressed each topic with every participant. Two digital recorders were used to capture the conversation.

Three primary strategies were used to improve the validity of the data. First, each participant was invited to add anything they felt was important but not yet discussed at the end of the interview. Second, the research assistant completed digital memos following each interview to capture any subtleties in meaning and impressions of body language. These notes were linked to transcripts and consulted during analyses. Finally, the team executed a member checking process wherein the participants were provided with a summary of their interview with salient quotes and asked to provide any changes, clarifications, or additions.¹⁹ This study was approved by the University of Arkansas for Medical Sciences IRB.

Sampling and Recruitment

A purposive sampling design was employed to recruit ECETs with a diversity of perspectives.²⁰ Three factors were of primary interest: prevalence of adult obesity in the community, role in classroom (i.e., lead or assistant teacher), and ethnicity. A list of all licensed childcare centers in the state was obtained from the state Division of Child Care and Early Childhood Education (DCCECE). This database included contact information (address, email, phone number), county, agency type (Head Start, church-operated, center-based, school-based, or home-based), and the number of licensed childcare providers at each center. This list was narrowed to state-funded (ABC) and Head Start programs given that these programs serve children impacted by poverty (100% and 200% of poverty, respectively), a group particularly susceptible to excess weight and poor nutrition.^{21,22} Prevalence of obesity by county was obtained from databases compiled by the University of Wisconsin Population Health Institute in collaboration with the Robert Wood Johnson Foundation.²³ Thereafter, descriptive statistics were computed on obesity prevalence in the state (i.e., % in each county; Mean =33.62%; Range = 27.3 – 40.0%). Quartiles of prevalence were created to group counties: Less than 31.2% obese (n=19), 31.2–33.6% obese (n=18), 33.6 to 35.8% obese (n=20), and greater than 35.8% obese (n=18). Sites were then randomly selected from the database -- 8 from each obesity prevalence quartile. Selected sites were contacted by phone and/or email to inform them of the study and invite participation. Of the initially selected 32 sites, 90% participated.

When sites indicated interest, informational flyers were distributed among teachers. Interested teachers contacted the research assistant to receive additional information and complete a screening interview including information on the teacher's role in the classroom and ethnicity. The screening interview allowed the research assistant to determine if the demographics of the interested educators matched the desired demographics for uncompleted interviews in that obesity quartile. When demographics were a match with the recruitment plan (i.e., teacher role and ethnicity), educators were invited on a first-come, first-serve basis. This allowed for strategic recruitment to attempt to balance ethnicity and teacher role across obesity prevalence quartiles. Only one teacher per site was invited to participate. Teachers who did not match selection criteria were invited to join a wait list for future research projects. All teachers that completed the screen received free 3-month access to an online continuing education platform. Teachers completing the interview received a \$50 cash incentive. A waiver of consent was approved by the IRB given that it would have been the only record linking their identity to participation in the study.

Measures

Development of the interview guide was based on the adaptation of Belsky's determinants of parenting model,¹⁸ a community review board, and 4 pilot interviews with ECETs. The community review board consisted of three early childcare professionals who act as resource and referral agents with childcare agencies in the state. The agents provided input on the recruitment protocol, the wording of the interview questions, and prioritizing questions to narrow the interview guide. The final guide provided the foundation for interviews but was not completed in the exact order or verbatim with every participant. Consistent with recommendations for qualitative data collection,^{24,25} the interviewer provided additional probes when appropriate and proceeded through the topics as they best fit the flow of conversations. All interviews were completed by a single research assistant trained and experienced in qualitative interviewing to increase consistency and validity across interviews. In addition to the in-depth interview, participants completed a survey including demographic information and a two-item assessment of food insecurity based on the USDA Household Food Security Survey Module.²⁶

Analysis

Data were transcribed verbatim by one of 5 transcribers then imported into QSR NVivo 10 for analysis.²⁷ An *á priori* template of codes (i.e., a start list²⁸) was developed based on the adapted Belsky model to sort relevant text into the adapted constructs of developmental history, beliefs, and teaching interactions. The objective of the analysis was to determine the consistency of ECET narratives (or lack thereof) with the Belsky model. Further, analysts sought to keep each individual case in mind, considering the interaction of constructs within and across individuals to provide a "test" of the theory. Statements fitting with more than one construct were coded in both categories (i.e. a belief that resulted in a teaching interaction).²⁹ This deductive approach reflects a desire to test the utility of an existing theory in a new setting³⁰ and reflects a critical realist epistemology, that is acceptance of the role of subjectivity in the facts are perceived.³¹ Rather than a rigid rule to determine the portion of data required to create a theme, a flexible approach was adopted consistent with Braun and Clark³² recommendations that allowed us to identify themes based on the "keyness" of the theme relative to the research objective.

To establish reliability, TS and ZP first coded one interview in conjunction. During the process, the coders engaged in consensus building by talking through ambiguous instances and comparing them with the existing conceptual definitions. The two analysts, then, completed two iterations of independently coding four additional interviews. After coding each transcript, interviews were compared and discussed to evaluate inter-coder reliability, resolve coding discrepancies, and strengthen thematic understanding between the coders. CBM participated in the review of these transcripts and the conversations to build consensus and refine the codebook. During this process, the codebook was continuously refined and expanded include emerging subthemes within each main construct.

Reliability was measured using the kappa statistic generated by QSR Nvivo 10.^{27,33} Once a kappa of 0.80 was obtained within each of the 3 major coding categories, the analysts divided the remaining 23 interviews and coded them independently. A Kappa > 0.75 is

categorized as “excellent agreement.”³⁴ The team held bi-weekly meetings to discuss salient examples as well as reach consensus on uncertainties in coding. These regular meetings facilitated continuation of shared meaning between coders to enhance validity and reliability in coding.

Given that the primary purpose of this study was to illustrate the application of Belsky’s model in a new context and content area, analysts sought to understand the utility of the theory within each case. That is, the focus was primarily in connections or overlap between codes within each interview. After coding was complete, Nvivo queries identified where the theoretical constructs overlapped or occurred in near proximity within an interview.

Results

Demographics

The final sample included a balanced number of teachers from each obesity prevalence quartile. A total of 28.6% of teachers fell in the first quartile, 21.4% in the second, 21.4% in the third, and 28.6% in the fourth. The ethnic makeup included 75% Caucasian, 14.3% African American, and 7.14% Hispanic, and 3.5% Other. More than half of the sample were lead teachers (67.9%). The educational distribution shows a majority of participants with college or beyond (60.7%), followed by some college (32.1%), and 7.1% with a high school diploma or GED. Most teachers (60.7%) had completed a Child Development Associates (CDA) degree. The average age of participants was 40.7 with 10.8 years of teaching experience. Sites were Head Starts (HS) in 53.6% of cases and state-funded centers (ABC) in 39.3% of cases; 7.1% had classrooms receiving both types of funding. Most were center-based (78.6%) with an additional 21.4% based in a school (see Table 2). The average number of children served by these centers was.

Evidence of Belsky Constructs

Figure 1 presents the three themes derived from the adapted Belsky model as well as descriptions of the sub-themes within each adapted Belsky construct (developmental history, beliefs, teaching interactions) with quote examples. Overall, the model provided a useful framework to understand the narratives of educators, and salient examples of each construct were observed. During the analysis, the research team observed three distinct interrelationships between and across the themes (i.e. developmental history influences beliefs and teaching interactions). In order to capture the depth and complexity of these relationships, the results are presented here relationally.

Developmental History, Beliefs, and Teaching Interactions

Rules and Routines: The rules and routines around food and mealtime in the educators’ childhood aligned with educator beliefs and behaviors at meals. For example, educators with fond memories of eating as a family placed greater importance on classroom standards that are consistent with this experience. Several reported appreciating the conversations and memories they had of childhood meals and carrying that value forward to their classrooms. One teacher (ABC, 5), a 32-year-old, Caucasian, lead teacher said,

Well I mean, I was raised that you sat at the table to eat. So I mean, that's what we expect the kids to do. You sit at the table, sit down, we talked, talked about our day or whatever, so I mean, we do that with the kids... I think it's why I encourage family-style eating, why I feel like it's the highlight of the Head Start program when it comes to their meals. Because I know the importance of it, and what can come out of it.

A 40-year-old, Caucasian, assistant teacher (ABC, 10) echoed this sentiment as she saw meals as an important social time for togetherness, "As they eat, I sit down with them because I think that's really a bonding time for them. They love to...discuss what we've done that morning, that's a good time to go over some of the circle time stuff, you know, 'cause they like to talk."

The beliefs that meals are important opportunities for bonding and conversations lead to descriptions of child-directed teaching interactions where the teacher creates family-like environment at mealtimes. A 32-year-old, Caucasian, lead teacher (ABC, 24) said,

You talk about your day, and you discuss your day, and that's your time to spend time with your family and tell them how things happen. And we talk with the kids about how they sit down, "Do y'all sit down together?"... We talk about ways to eat and how to eat with your family. And then, in here, I try to ask them questions occasionally when they're eating, like, "What have you liked about today so far?" You know, "What's your favorite part? What do you want us to do next?"....And, you know, just kind of interact with them. Just like you would if you were sitting down with your own family.

Just as educators who recall pleasant conversations at meals try to recreate that environment for children in school, those who remember mealtimes as a set of rigid rules and routines also replicate that environment in their classroom. One classroom rule common among ECETs in this study was a rule that children must eat first and play second. For example, a 40-year-old, Caucasian, lead teacher (ABC, 6) holds, "At my house when it's meal time, you don't get up till you are finished. When you are finished that's fine, but we're not going to get up and go play, you know." The teaching interaction that occurred as a part of this rule is minimizing play at the table, "So there is a little bit of that where they want to get up and you know move around. They are playing. For us, we've got thirty minutes. We need to eat, and we need to be done."

Another common rule among ECETs interviewed was that a child must try a food in order to say he/she doesn't like it. In one example, a 32-year-old, Caucasian, assistant teacher (HS, 12) said,

Cause that was my biggest thing when I was young. I would say "Oh, I don't like this." And he [my dad] would say, "How do you know you don't like this if you don't try it?" And I try to do that too because nine times out of ten, he made me try broccoli, and I love it now because I tried it.

The teaching interaction that resulted from this belief was "helping [children] with any questions they have and showing them you know, 'Oh, these peaches are really good.' "

Another ECET, said, “I remember with my parents, that is how they were. If I didn’t taste it, how do I know I don’t like it?” In teaching interactions with her students, she reports often saying, “Do you know what it tastes like? If you can’t tell me what it tastes like, then you don’t know what it tastes like. So let’s take a bite, and then you can tell me what it tastes like.”

In some instances in the ECETs’ developmental histories, a family history of a focus on rules resulted in rigidity in the classroom and an emphasis on manners to help make sure children were school-ready. A 40-year-old, Caucasian, lead teacher (ABC 6), said, “You know we are from the south and, I was raised in a very loving home, But I was expected to follow certain rules. And I am very much that way in my home and in my classroom.” She continues to share, “We are not singing and yelling at the table it’s more about manners, you know. I want to teach my children in my preschool some manners.”

Another example of a family rule that translated into rigid teaching interactions was family rules that everyone eats whatever is served and all this is served. A 49-year-old, African-American, lead teacher (HS 25), reminisced,

I always told them [my kids], you’re going to eat whatever you get on your plate. Don’t waste anything. And that’s what I told my kids that they’re supposed to... whatever they’re served on that plate, it has to be gone.

Thus, it seems that educators, similar to parents, carry forward their previous experiences as children and parents to their beliefs and interactions with children in the classroom, both the positive and the negative. Consistent with the Belsky model, data illustrate that the developmental history of ECETs influences beliefs which inform teaching interactions.

Food Legacy: In the previous section, several examples of ECETs perpetuating familial patterns were presented, both positive and negative, from their childhood forward into their classroom interactions with children. In some narratives, this propagating link was disrupted by desires of educators to do things differently from their family of origin. That is, several educators were motivated to leave a different food legacy than the one their families left for them. For example, a 44-year-old, Caucasian, lead teacher (HS, 15), described eating unhealthy food in her own family but expressed concern for this in the children in her classroom and described her attempts to influence better choices.

I think because when I was a kid we ate all unhealthy foods...we really didn’t eat anything healthy. That’s why I try to get these kids to eat fruits and vegetables and try to get them to eat, make healthier choices.

Similarly, another 47-year-old, Caucasian, Head Start educator (HS 17) described how her background led her to struggle with her own weight and how she desired avoidance of similar problems for children in her classroom:

Well, because we ate a lot of biscuits and gravy and pancakes -- stuff that really packs on... I think that has a lot to do with it, because I’ve always struggled with my weight... Going to school nowadays and being heavy, you get picked on a lot.

So I try to teach these kids healthy ways to eat so they don't have those kinds of problems, you know.

This awareness of the impact of family practices extended beyond the food served to how educators were fed as children and how they want to feed children in their classes. A 42-year-old, Asian/Pacific Islander, Head Start educator (HS, 23) shared, "I can tell you one thing that I wish my mom would have never done 'Finish your plate or you can't leave the table.' And now ...I'm always thinking I have to finish my plate, to this day." She went on to describe her efforts to avoid forcing children to eat, linking that practice to rising childhood obesity.

Several educators reflected on their childhood experience as self-described "picky eaters" and related that to their interactions with children with food selectivity in their classroom. Salient examples came from ABC educators who described being forced to eat foods until they vomited. One 40-year-old, Caucasian, lead teacher (ABC, 6) explained, "If they eat something that absolutely that makes them gag and throw up, I am not going to make them eat that. Because I am sensitive to that." Another sharing a similar experience (ABC, 1; age 37, Caucasian, lead) described it as her "worst memory ever" that she wanted to avoid for other children. Reacting to her experience of having a limited diet as a child, another 37-year-old, Caucasian educator (HS 19) expressed a different way her history of pickiness impacted her as an educator today.

Well, if we have picky eaters, I think I'm more understanding to them, or more sympathetic maybe to them because, because I was a picky eater growing up. I didn't eat meats and I didn't really eat a whole lot of anything. I remember eating green beans a lot, because I did not like anything. So I guess I am more sympathetic to those kids who do not like [what's served].... And I want to just run out and just give them something that they will eat. Give them some macaroni and cheese.

Consistent with, but more explicit than cases that carried forward family rules and routines, a few cases discussed specific strengths in their background that they could intentionally draw upon to influence children and families. One 51-year-old, Caucasian lead teacher who was also a Head Start center director stated, "My staff is older, and we were raised different. We were brought up with vegetables, and working on the farm, and eating the right foods. So, we talk about it a lot" (HS, 13).

Food Insecurity: One key connection evident in educator narratives was that between personal experiences with food insecurity and their concerns about the food security of children in their classroom. This is consistent with the accompanying results from the HSSFM which identified 38% of teachers in this sample as currently food insecure and 35% has having experienced food insecurity in their childhood. For example, a 49-year-old, Hispanic, lead teacher (HS, 25) said:

My mom cooked for us. She was always making sure we had a meal. Sometimes she would stop eating to make sure we had something to eat. My daddy, he was the only one that was bringing the money. My momma worked, but she would cross the border to go and clean up houses and sometimes it was good, sometimes it was bad, so...but we survived.

Often this kind of developmental history directly influenced teaching interactions related to experiences and beliefs surrounding food insecurity. She continued, “That’s what I tell the kids. ... Some kids don’t have nothing else to eat.” Other ECETs were able to articulate teaching interactions and strategies that were influenced by their personal history with hunger. A 40-year old, Caucasian, lead ECET (ABC, 1) encouraged children to trade food, “We are not supposed to do this, and I do it and sometimes if I know a child is hungry and they are wanting more, and I know another child is not going to eat it... I’ll say ‘Do you want to trade this for that?’” Another 40-year-old, Caucasian, assistant (ABC, 10) ECET chose to share her lunch when she realized that a child was not going to have supper that night, “So, I went and got my banana that I hadn’t ate for lunch, and she ate my banana too.”

A common thread among ECETs with a developmental history of food insecurity was the belief that food should not be wasted. A 40- year-old, Caucasian, lead educator (ABC, 1) said, “At the beginning, when I first started working in this school setting, it was hard for me to see all the food thrown away at the end of the day, because I was thinking ‘What a waste, and I know there’s hungry people somewhere.’ And so, it was really hard for me to see the food thrown away.” Often this belief manifested in teaching interactions where ECETs focused on ensuring children were not hungry. Pressuring children to eat and encouraging extra servings were two prominent interactions described by ECETs. A 44-year-old, Caucasian, lead educator (HS, 15), described a main focus of her work as

...making sure they get enough to eat, making sure everybody, you know, ‘are you full? Do you want something else to eat?’ Um, we don’t, we just worry about the kids ‘cause you know, we have them more than the parents do. We have them seven hours a days, when they, besides bedtime, they spend three or four hours a day with them. So, we want them to be healthy, especially the ones we know may not have much food at home, so that’s main—our thing... We try to really, really get them to eat because sometimes these are the only meals the kids eat. And if we have gave them the amount were supposed to serving size... We know they’re hungry, we’re going to give them more, you know.

This sentiment was repeated many times by other ECETs, such as a by a 42-year-old, Asian, lead (HS, 23) who shared,

I mean if I find something that... they’re starving... if a kid’s not going to eat something, I know they’re not going to eat it or if I have an extra like we feed seventeen kids and only fifteen showed up, I’ll give the extra food to that child. I’m going to fatten them up before they go home.

As ECETs attempt to mitigate the children’s’ food insecure backgrounds by ensuring that they are eating at school, both they and the children feel pressure around maximizing the food available at school. When this does not work out ideally, for example when the children do not like the foods being served, it can create conflict. For example, a 49-year-old, African American, lead ECET (HS, 25) shared that when children do not choose to eat, they felt guilty. “They come and gave me hugs. ‘I’m sorry, Miss Beth (pseudonym). I’m sorry.’” She tells them, “Be glad and be happy in what you have. Eat what you have in front of you. Because some they don’t have at all.”

Discussion

In the current study, Belsky's model of parenting was applied to explore ECETs' developmental histories and beliefs about food related to current teaching interactions with children in their classrooms. Overall, the Belsky model described, predicted, and explained the relationships, and three strong themes emerged in the ECET narratives. That is, ECET's developmental history with mealtime rules and routines were linked with mealtime teaching interactions. Further, beliefs about their own experiences led ECETs to either embrace the food routines of their past or strive to form a different food legacy. The experience of food insecurity among ECETs' and the children they serve produced a salient example of the link between the Belsky constructs. Similar to parents, ECETs demonstrated a desire to create a "*mini classroom family*"⁴ where children can learn meal rules and routines and have their basic dietary needs met.

Rules and Routines

The experiences of ECETs' illustrated that they are aware of rules and routines present in their family of origin and that experiences often carried forward to their beliefs about and interactions with children in their classrooms. This was true for both positive and negative experiences in their childhood. Previous research is consistent with the idea that early experiences can impact eating habits and food attitudes across the life span.³⁵⁻³⁸ The current study illustrates how experiences may also be passed on to others, even beyond the familial structure. An early educator has the potential to influence approximately 20 children each school year, which may total an excess of 600 children by the end of her career. At present, the literature is unclear on how meal experiences at childcare interact with meal experiences in the home to influence children in the short and long-term.

The developmental influences that ECETs bring to the classroom can be both positive and negative in nature. In this study, positive rules and routines included eating as a family and having positive conversations. Family-style meal service (where children serve themselves) has been associated with improved outcomes for children including increased intake of healthy foods.³⁹ Teachers sitting and eating with children, as discussed by educators in this study, is similarly associated with increased intake of vegetables.⁴⁰ ECETs' who experienced this in their own families were able to describe an explicit value for carrying this into their classrooms. Conversely, negative rules and routines experienced by educators were being forced to clean their plate or having rigid mealtime environments. Several educators in the study described continuing harsh familial expectations in their classroom. This finding may help to understand and address ECETs documented tendency to pressure children to eat.⁴¹

Food Legacy

Several teachers expressed an awareness of their potential to impact children as well as an intentional desire to do so in a positive fashion. For ECETs in this study, this aspiration often arose from a negative personal experience. Sympathy for picky eaters and a wish to prevent weight struggles for others were two common examples. These themes are consistent with data from Sharma and colleagues⁴² who documented that 81% of early childhood educators

desired to lose weight and that over 70% were currently trying to do so. Whitaker and colleagues⁴³ documented that Head Start educators have an obesity prevalence rate 9.8% higher than the national average. Subsequently, Song et al⁴⁴ reported that 73.6% of Head Start educators in Michigan were overweight or obese based on self-reported height and weight. Given this and the documented low quality of ECETs' diets,^{42,45} it is notable that some ECETs desire for children to have a different future.

The narratives shared under this theme may provide a lens into "positive deviance."⁴⁶ That is, there are likely lessons to learn from educators were able to express an explicit desire to protect children from the negative food experiences of their past (e.g., being pressured/forced to eat). Beyond an awareness of their experiences, these educators articulated the agency to impact the children in their classroom in a different and more positive way. Some providers may be more prone to develop this sense of agency than others. As reviewed, there is some literature available exploring ECETs' demographic characteristics that relate to nutrition related-practice.¹⁴⁻¹⁵ However, these studies have focused on links between characteristics and negative practices (e.g., restrictive and controlling practices such as pressuring children to finish their food before leaving the table). Less research is available to understand educator traits related to positive practices. The positive mealtime environment framework provides one exception.⁴ This model, consistent with narratives in the food legacy theme, seems to reflect important attitudinal traits or identity values that transcend sociodemographic characteristics. This desire to leave a "better" food legacy may reflect a sense of self-efficacy and agency to improve the trajectories of the next generation of children.⁴⁷

Food Insecurity

A clear relationship emerged between the ECETs' developmental history and beliefs around food insecurity and their teaching interactions, in which they both presented food as a scarce resource (when not available) and something to be grateful for (when available). The common experience of food insecurity among educators has recently been documented among ECETs' in two states as exceeding national averages.^{44,45} Consistent with literature on the negative impact of maternal food insecurity on feeding practices,⁴⁸ ECETs' experiences with food insecurity may contribute to an unhealthy relationship for food which has the potential to interfere with their ability to role model for children and use best feeding practices. Ensuring children ate "enough" was a common goal shared by teachers. Particularly, a personal experience of food insecurity led to certain beliefs, and in turn, teaching interactions focused on getting children to eat. Many narratives in this vein were inconsistent with the current research on best practice in child feeding (e.g., avoiding pressure to eat).⁴⁹⁻⁵¹ Practices recognized as supportive of children's development (e.g., allowing children to choose and cuing hunger)^{41,50,52-55} and consistent with existing standards/recommendations (e.g., family style dining, role modeling),⁵⁶⁻⁵⁸ however, were less frequently discussed practices, especially when food insecurity was suspected.

This study is also consistent with previous work documenting the frequent experience of encountering hunger among children in childcare settings. Sigman-Grant and colleagues⁵⁹ found that 56% of childcare providers encountered children with hunger in their classroom

on a weekly basis or more. Similarly, Gooze and colleagues⁶⁰ reported that Head Start educators often/very often (14%) or sometimes (55%) see children they do not believe are getting enough food at home. Educators in both of these studies reported behaviors to try to address this issue such as 98% of respondents in the Sigman-Grant study who reported trying to make sure children got enough healthy food while at school and the 53% who reported (sometimes or more) giving children extra food on Mondays or Fridays.⁶⁰ The current study lends voice and specific examples to these quantitative reports. The findings also build upon this work to highlight how the personal experiences of educators may compel them to alter their practice to address perceived or real food insecurity among children. Previous qualitative work among ECETs' uncovered that controlling feeding practices such as pressuring children are thought to be effective to get children to eat the right amount.⁶¹ This study's findings support the perceived efficacy of these unsupportive practices and further highlight motivations for their use.

This study has both limitations and strengths. One limitation is that some of the topics covered in these interviews were sensitive in nature which may have contributed to some social desirability in responses. Further, the findings are specific to the participants and results may only be transferred to similar contexts or settings. Additional study is warranted to explore whether findings are consistent with the experience of educators who serve children in other settings (e.g., private childcare, family childcare homes) under varying policy and accreditation standards. Additionally, the analysis in this study intentionally focused on only the foundational path of the Belsky model. Additional work is needed to consider how social contexts exacerbate or buffer relationships between constructs in this path.

Finally, this approach also has several strengths. A unique approach used constructs of the Belsky model to describe, predict, and explain narratives provided by ECETs and examine themes within and between constructs. Prior to this study, ECETs contributed to the revision of the interview guide and recruitment approach. This input was critical to the success of the interview flow as well as successful recruitment from each of the targeted communities. Further, the purposive sampling was designed to represent ECETs from communities of differing obesity prevalence, from different ECET roles, and from different ECE contexts (Head Start vs. state-funded ABC). This provided a rich set of diverse experiences among the participant pool. In addition, all interviews were completed by a single interviewer which created a consistent interview process across participants.

Implications for Research and Practice/Conclusions

The findings of this study have several practical implications for the field. Primarily, the study has the potential to inform professional development for ECETs. Sigman-Grant and colleagues⁶² proposed that negative teacher behaviors may be rooted in insufficient training. However, changing behavior alone does not necessarily impact the underlying assumptions or paradigms that may interfere with teachers' implementation of best-practices. Newly developed, comprehensive and on-going professional development may support shortcomings in previous training, particularly in the domain of professional identity formation as a teacher and surrogate-parent at mealtimes. Professional development interventions which

raise awareness and target action to disrupt and eventually change unhealthy patterns may be important to support ECETs' development of new identities and insight around the impact of history and beliefs on their practices. While ECETs' personal backgrounds cannot be altered, the influence of these experiences can be recognized and addressed through the surfacing and challenging of tacit beliefs that teachers hold. A comprehensive training approach that both addresses personal experiences and deep-rooted beliefs and teaches the correct behaviors/practices might be beneficial. That is, new behaviors and best practices could be taught in light of ECET background and beliefs.

Existing, curriculums, trainings, interventions, and programming around feeding and nutrition promotion may benefit from revisions to address ECET's food history, food beliefs, and their effect on mealtime rules and routines. Another element of professional development for ECETs, consistent with the food legacy theme, may be to address factors that may affect teachers' perceptions of their own agency as professionals and influence at the center. Training and professional development that is accurate, affordable, and includes reasonable and attainable action steps for teachers nurtures a sense of agency, control, and support, which in turn influence teachers' intentions to stay in the profession.⁶³

Beyond these practical implications, this research suggests several potential topics for future research. First, future study should operationalize the themes within each of the Belsky domains with standardized measures and assess their prevalence among a larger group of ECETs. Thereafter, a longitudinal study could examine predictive relationships among these constructs, observed classroom behaviors of ECETs, and child behavior (e.g., neophobia, fruit and vegetable intake) as suggested by the more complete Belsky model. This type of study would allow for a full empirical test of the Belsky model and its power to predict and explain ECET influence on child dietary outcomes.

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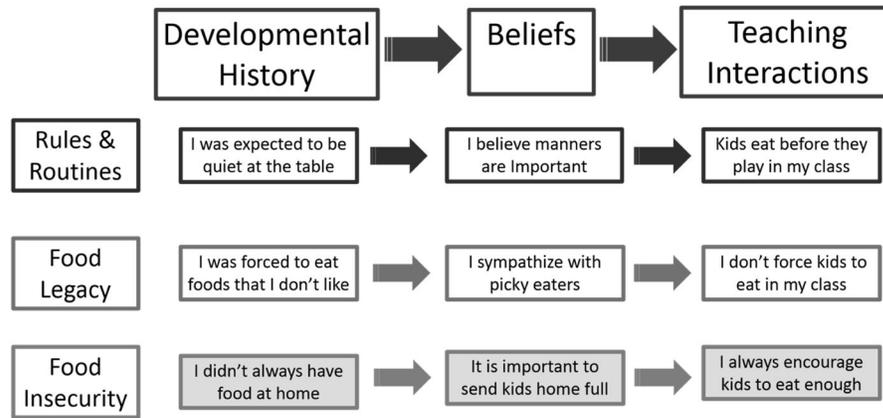


Figure 1.
Adapted Belsky Model and Illustrations by Theme

Table 1

Interview Guide informed by Adapted Belsky Model

Construct	Question
Developmental History	<ul style="list-style-type: none"> I want you to think back to a typical meal in your home. Describe what you remember. How have your family food traditions and food memories influenced what you do for you or your family today? How do they influence your interactions with the children and families you serve at the center?
Beliefs	<ul style="list-style-type: none"> What kinds of concerns do you have about nutrition for the children you teach? How do you deal with that? How do you think nutrition impacts children's health? Their learning? Take me through a typical day in your classroom. Can you tell me more about meals and snacks? What are they like from start to finish?
Teaching Interactions	<ul style="list-style-type: none"> What are your jobs at meals and snack times?

Table 2

Demographic Characteristics by Obesity Quartile

Characteristic	First Quartile n = 8				Second Quartile n = 6				Third Quartile n = 6				Fourth Quartile n = 8			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
<i>Years Teaching</i>																
<=6	21.4	12.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	37.5
7-12	39.3	37.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	37.5
13-18	28.6	37.5	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	12.5
19-24	7.1	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5
25+	3.6	0	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	0
<i>Age</i>																
<=29	3.6	0	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	0
30-29	35.7	12.5	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	37.5
40-49	46.4	75.0	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	50.0
50+	14.3	12.5	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	12.5
<i>Role</i>																
Assistant	32.1	37.5	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	25.0
Lead	67.9	62.5	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	75.0
<i>Gender</i>																
Female	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Race</i>																
Asian/Pacific Islander	7.1	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0
African American	14.3	12.5	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	12.5
White	75.0	87.5	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	62.5
Other	3.6	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
<i>Hispanic</i>																
No	92.9	87.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Yes	7.1	12.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Education Level</i>																
High School/GED	7.1	0	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	12.5
Some College	32.1	62.5	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	12.5

Characteristic	First Quartile n = 8		Second Quartile n = 6		Third Quartile n = 6		Fourth Quartile n = 8	
	%	%	%	%	%	%	%	%
College+	60.7	37.5	66.7	66.7	66.7	66.7	66.7	75.0
<i>CDA</i>								
No	39.3	50.0	0	0	33.3	33.3	33.3	62.5
Yes	60.7	50.0	100.0	100.0	66.7	66.7	66.7	37.5

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