“HOW MY HEART FEELS AS FAR AS MY CHILDREN, IS WHAT I DO”: EXAMINING AFRICAN AMERICAN WOMEN’S NEGOTIATIONS OF INFANT FEEDING PRACTICES

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ABSTRACT

BRITTANY CHAMBERLAIN: “How my heart feels as far as my children, is what I do”: Examining African American Women’s Negotiations of Infant Feeding Practices (Under the direction of Amanda Thompson)

Low income African Americans suffer from some of the highest rates of obesity and lowest rates of breastfeeding of any racial or ethnic group. The author employs a biocultural anthropology perspective and the concept of Authoritative Knowledge in order to qualitatively investigate the gap between population level disparities and the mothers and families who are making and affected by these decisions.

This study examines from where and whom low income, African American women from North Carolina obtain information about infant feeding options and how they negotiate among varied, and often conflicting, information during the decision making process. It finds that mothers use the discourses of “meeting needs” and “each kid is different” to discuss infant feeding strategies and filter the varied sources of information through the lens of their motherhood in order to best care for their children.

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Introduction

The prevalence of overweight and obesity has skyrocketed in recent decades in the United States, particularly among the non-Hispanic black population, and is growing among children and adolescents (Ogden et al., 2010). While genetic predisposition and metabolic disorders contribute to this condition, lifestyle and environment are perhaps the most influential, pervasive, and variable risk factors (Golan and Crow, 2004). Obesity is a multifaceted condition and further research is needed to understand the complex set of determinants and risk factors underpinning this epidemic.

Anthropology has a valuable role to play in this research. The developmental origins of health and disease framework (DOHAD) offers an avenue to explore the life-long effects of early life environment and behaviors. This research has shown that our physiology is shaped through exposures to different prenatal and perinatal environments, which contribute to obesity risk and other health outcomes later in life (Barker, 1994; Gluckman et al., 2007; Kuzawa and Quinn, 2009). For example, infants with excess weight gain are at greater risk of becoming overweight or obese children and adolescents, who are more likely to remain obese and suffer from associated comorbidities in adulthood, such as cardiovascular disease, Type II diabetes, and hypertension (Adair, 2008). Because of this cumulative effect on our health, it is imperative to investigate how early environments are shaped and developed.

However, there is a significant gap in the knowledge connecting theories of developmental origins of disease to the actual formation of the obesogenic

environments. While anthropology has a rich history of investigating health, development, and growth (for example, see the work of Sara Stinson or Barry Bogin), few researchers have examined how these important early life environments are established and develop. Caretakers, in many cases mothers, are perhaps the single most important influence on an infant's life and environment; therefore, in order to understand how obesogenic perinatal environments are created, it is critical to examine how these caretakers construct an infant's world, and, specifically, the early feeding environment.

In this paper, I apply a biocultural perspective and employ the concept of Authoritative Knowledge to an investigation of maternal factors and decisions that impact the development of obesity in children. Parental feeding strategies can influence children's future eating habits by shaping their food preferences and ability to self-regulate (Savage et al., 2007). In addition, the early introduction of solid foods, maternal obesity, short duration of breastfeeding, and controlling parental feeding practices have all been shown to increase the risk of weight gain in infants (Baker et al., 2004, Savage et al., 2007). By building on these studies with qualitative data from mothers making these decisions, we can better understand how and why these risk factors are occurring, and, in turn, point to pathways for intervention.

I examine from where and whom low income, African American women from North Carolina obtain information about breastfeeding and other infant feeding options and how they negotiate among varied, and often conflicting, information during the decision making process. By investigating how mothers develop

strategies for and make decisions around their infant and child feeding choices, we can better understand the knowledge, behaviors, and environmental factors underlying the formation of both healthy and obesogenic early environments (Golan and Crow, 2004).

Literature Review

Biocultural Anthropology

Biocultural anthropology has its roots in a dissatisfaction with biological anthropology's tendency to ignore larger factors, such as culture, history, and political economy, when focusing on a population's biology and health. The discipline of anthropology has a long history of division based on debates of the relative importance of biology and culture in shaping human life. In the 1990s, this chasm, along with increasing specialization within subdisciplines, was threatening anthropology's status as a holistic field (Goodman and Leatherman, 1998). Starting in the 1980s, however, some anthropologists have worked to establish a "middle ground" that incorporated theoretical perspectives from ecology, human adaptability, epidemiology, ethnomedicine, and political economy (Armelagos et al., 1992; Goodman and Leatherman, 1998). They strove to bring together sociocultural ideas about the construction of power, inequality, and meaning with new biological methodologies to move towards a Critical Biocultural Anthropology which looks at five key issues: 1) "biological variation in terms of *social relations,*" 2) *"links between the local and the global* (macro-micro interconnections)," 3) the importance of history in understanding social change and its biological consequences, 4) humans as "*active agents in constructing their environments,*" and 5) how the control of

knowledge affects the distribution of power and resources (emphasis in original, Goodman and Leatherman, 1998, p.19-20). Armelagos and colleagues, in their application of biocultural theory in medical anthropology, redefined the unit of analysis from individuals as hosts to "the population comprised of individuals who make choices…actors, the constraints placed on them, and the choices they make" (Armelagos et al., 1992, p. 37). This shift towards considering populations with shared characteristics, while also examining constraints and individual choices, has allowed a new avenue through which to look at suffering, health, and well-being.

Biocultural theory has been applied to studies of breastfeeding and infant feeding by Stuart-Macadam and Dettwyler. They argue that

> Breastfeeding is the ultimate biocultural phenomenon; in humans breastfeeding is not only a biological process but also a culturally determined behavior…Breast milk and breastfeeding have become intricately linked to physiological processes and health and disease patterns of both mothers and infants. Alterations of this age-old pattern can have profound implications for the physiology, growth and development, and health of human infants and children as well as for the physiology and health of women. (Stuart-Macadam and Dettwyler, 1995, p. 7)

This application has been adopted by those outside of anthropology, as well. For instance, Bernice Hausman, a literary, feminist, and critical studies scholar, has used this framework to examine "biological and cultural narratives of lactation as constructions of maternity" and how these narratives need to be viewed as "discursive strategies, at the same time addressing the biological as something more than just a strategy of representation" (Hausman, 2007, p.482). Discussions of lactation in both biological and cultural realms are used to talk about motherhood; however, she suggests that we need to look at the biological side of breastfeeding from beyond just a medical perspective and truly integrate biological and bodily

knowledge with cultural analysis. She also argues that, in order to study disparities in breastfeeding, we must give credence to both the biological impacts and political-economic context of breastfeeding (or not breastfeeding) (Hausman, 2003).

Anthropological Perspectives on Infancy

Recently, anthropologists have begun to focus more research on infants. For much of anthropological history, infants were ignored, either as non-agents or simply as a fixture of women's private realms, which were also categorically overlooked (Gottlieb, 2000). Parallel to the debates between the relative importance of biology and culture, cultural anthropologists have been deliberating about the relative merits of focusing on a concern with structure and macro-level factors versus an emphasis on agency and individual actors. Gottlieb argues that an anthropology of infants may help us balance this debate between structure and agency (2000). She suggests that infants provide both a way to examine agency, due to some cultures' placing responsibility on infants for their actions, and a way to look at structural impacts, as "infants are enmeshed in the lives of their relatives and in broader institutions—both local and global" (Gottlieb, 2000, p. 128). She asserts that "infants actively shape the lives of those around them, contributing to the constitution of the social worlds" and, therefore, are a valuable source of inquiry for anthropologists (Gottlieb, 2000, p. 128).

Within biological anthropology, recent researchers have provided other perspectives on why it is important to study infants. The Developmental Origins of Health and Disease (DOHAD) framework revisits anthropology's early fascination with developmental plasticity, adding new understandings of physiological intricacies

(Kuzawa and Quinn, 2009). DOHAD seeks to investigate how prenatal and infant environments impact and shape adult health. It hinges on the understanding that events and influences in our early development shape our epigenetics and later life phenotypes (Gluckman et al., 2007). Risk factors for diseases such as type II diabetes, cardiovascular disease, and obesity have been linked to early life phenomena like birth weight and maternal undernutrition (Gluckman et al., 2007). This attention to infancy has carried over into nutrition and public health studies as well. Though the evidence of a direct connection between breastfeeding and a reduction in risk of later obesity is somewhat inconsistent and shows a small effect, infant feeding has been recognized as an area with "an increasing opportunity for parental behaviors to influence their patterns of growth" (Adair, 2008, p. 11). Feeding frequency, types of foods, amount of food, and responsiveness to hunger and satiety cues are all opportunities for caregivers to influence an infant's development (Birch and Davison, 2001; Adair, 2008). Studies have shown that infants with rapid growth are more likely to be set on a growth trajectory which may ultimately lead to overweight or obesity, and that parental and environmental factors can influence the development of those trajectories (Stettler et al., 2003; Adair, 2008,).

Infant Feeding and Parental Influences

A growing body of literature has demonstrated how parental characteristics (such as race, ethnicity, socioeconomic status, and education) and feeding styles (such as breastfeeding initiation and duration and the timing of the introduction of solid foods), are correlated with infant and child overweight and obesity. For

instance, maternal obesity has been found to have a strong association with infant feeding decisions. In a retrospective epidemiological study with 200 participants in Belgium, Guelinckx and colleagues looked at multiple aspects of breastfeeding rates (2011). They found that intention, initiation, prevalence of exclusive breastfeeding at one and three months, and duration of breastfeeding were all significantly decreased for obese women when compared to normal and overweight women, based on WHO BMI cutoffs of pre-pregnancy BMI (Guelinckx et al., 2011). More broadly, a review of existing literature by Donath and Amir looked at 27 studies about different facets of maternal obesity and breastfeeding (2007). Like Guelinckx et al., they found that overweight and obese women were less likely to intend to breastfeed, to initiate breastfeeding, and had significantly shorter durations of breastfeeding; in addition, they saw that several articles demonstrated a relationship between obesity and delayed onset of lactogenesis and that obese women were less likely to have initiated breastfeeding within the first two hours postpartum (Donath and Amir, 2007). Overall, this review found a strong negative relationship between maternal obesity and prevalence of breastfeeding throughout the literature.

Though these studies highlight strong associations between overweight and obesity and poor breastfeeding outcomes, they can only speculate about possible causal links. Explanations include anatomical and physiological problems, medical conditions, socio-cultural factors, and psychological reasons (Donath and Amir, 2007; Guelinckx et al., 2011). For instance, obese women are more likely to have medical conditions, such as obstetric complications that lead to caesarean section, and physiological problems, such as hormone imbalances, that result in delayed

lactogenesis. They are also more likely to belong to social groups who are less likely to breastfeed and have less breastfeeding support, such as low-income, minority populations (Donath and Amir, 2007; Guelinckx et al., 2011). Because the relationship between maternal obesity and breastfeeding is so complex, researchers need to begin to explore the causal links; one way to do this is through qualitative studies that seek to understand how and why these mothers are making decisions about breastfeeding initiation and cessation.

Parenting styles can also play an important role in how infants and children are fed. These practices impact a child's autonomy during feeding episodes, development of "food preferences, intake patterns, diet quality, growth, and weight status" (Savage et al., 2007; p. 28). Research has shown that restrictive parental feeding practices, where parents exercise more control over feeding, are associated with overeating and poorer appetite regulation in children (Savage et al., 2007). The consequences of such practices are typically unintended and opposite from expected outcomes; for example, using food as a reward and restricting access to desired foods (typically sweet foods) only serves to increase preference and intake of those foods (Savage et al., 2007). These types of controlling practices are associated with an authoritarian style of feeding "in which eating demands placed on the child are relatively high, but responsiveness to the children's needs or behavior is relatively low" and are associated with negative outcomes (Savage et al., 2007, p. 29).

Another example of parental influence and possible explanation of how breastfeeding may mediate later risk of obesity is through appetite regulation. Some

researchers hypothesize that infants who are directly breastfed (fed at the breast as opposed to breast milk from a bottle) develop better appetite regulation because mothers must pay more attention to infant satiety cues rather than being able to visually gauge how much milk has been consumed from a bottle (DiSantis et al., 2011). Studies have shown that breastfed infants have greater control over the amount they drink and are able to adjust intake to relative time since their last feed (Savage et al., 2007; DiSantis et al., 2011). Higher infant control and, therefore, lower maternal control, of feeding has been associated with slower growth over the first year (Taveras et al., 2004; Savage et al., 2007; DiSantis et al., 2011). Recently, DiSantis and colleagues examined the connection between direct breastfeeding and later appetite regulation in children (2011). They looked at satiety response, food responsiveness, and enjoyment of food; low satiety response and high food responsiveness and enjoyment of food have been associated with higher energy intake and increased risk of obesity in children (DiSantis et al., 2011). They found that 3 to 6 year old children who had been directly breastfed were more likely to pay attention to internal satiety cues, a sign of better appetite regulation, even after controlling for confounding factors (DiSantis et al., 2011).

Current Literature on Infant Feeding in Low-Income African Americans

Research has pointed to a significantly higher rate of overweight and obesity both in African American adults and children, and researchers have begun to investigate why this disparity may be occurring. According to various studies, black mothers are less likely to initiate and continue breastfeeding and more likely to engage in practices that may contribute to a child's obesogenic environment, such

as early introduction of solids (for example, see Bronner et al., 1999 or CDC, 2010). There have been a multitude of quantitative studies demonstrating these trends; however, research is lacking to link these broad trends to the decisions of individuals[1], and, therefore, to effective interventions. While there is relatively little qualitative or ethnographic literature on infant feeding in African Americans, there have been several key studies that have begun to shed some light on how and why black mothers are making decisions about feeding their children.

Horodynski and colleagues have examined the early introduction of solid foods, a possible risk factor for later obesity, in focus groups with low-income mothers (2007). Their participants included white, black, and biracial low-income mothers with infants between one and twelve months old who were enrolled in Michigan's Medicaid program. They identified three main themes within their data: maternal knowledge about infant feeding, maternal perceptions of applicability of infant feeding guidelines, and manner and type of information useful for infant feeding decisions. The first theme involves how mothers interpret health professional infant feeding recommendations, such as hunger and satiety cues and the definition of solid foods. They found that although mothers were aware of the guideline to introduce solid foods between four and six months of age, they often misunderstood what "solid food" meant and did not recognize how their feeding strategies impacted their child's development. The second theme pertained to mother's agreement with recommendations and other sources of knowledge, such as grandmothers and peers. The third theme looked at mothers' indications of how useful provided

[1] Although these are individual-level decisions, they are certainly constrained by factors beyond the control (and sometimes beyond the perception and recognition) of the people "making" those decisions.

information was. They utilized these findings through a Theory of Planned Behavior framework to understand how mother's beliefs are reflected in their behavior and make recommendations to nurses for educating those mothers (Horodynski et al., 2007).

Karen Corbett has also conducted research looking at infant feeding styles in low-income black women (2000). Her study defined feeding style as combining "actual behavior resulting from deliberate choice and the meaning of these practices" (Corbett, 2000, p. 73). In her sample of ten new mothers, she used an ethnographic approach, conducting eight "fairly unstructured" interviews over the first year of their child's life. She found a common belief that "milk alone could not satisfy an infant," which contributed to early introduction of cereal in order to get infants to sleep through the night and feed them less often (Corbett, 2000, p. 79). All of the women discussed negative beliefs about breastfeeding, ranging from believing it should only be done in private to considering it "nasty" (Corbett, 2000). She saw very little support for breastfeeding, from both the mothers' friends and families and from the health care system. She also used these findings to recommend that nurses try to learn about their patients' beliefs in order to identify constraints and find the best way to promote breastfeeding practices (Corbett, 2000).

Margaret Bentley and colleagues repeatedly interviewed 19 households with teen mothers and grandmothers of infants in order to better understand their infant feeding practices and the impacts of multigenerational households on those practices (1999). They found that grandmothers played a large role in determining how infants were fed, even when their advice conflicted with physicians'. They

identified several factors that influenced infant feeding practices: ethnotheories of infant feeding, the child's characteristics, and a "lack of differentiation between an adult's and a child's nutritional needs" (Bentley et al., 1999, p. 1094). They argue for a broader understanding on the influences on infant feeding practices, going beyond just maternal education on medical recommendations to address multiple generations, ethnotheories of infant feeding, and infant characteristics (Bentley et al., 1999).

Roberta Cricco-Lizza has conducted extensive ethnographic research with low-income black women in New York City. In her study published in 2004, Cricco-Lizza examined the infant feeding beliefs and experiences of black women enrolled in WIC (BWEW) through participant observation and key informant interviews beginning during pregnancy and continuing postpartum. She found that:

> formula feeding experiences were the norm for most BWEW in this study, life experiences of BWEW included a preponderance of loss and stress, and infant feeding beliefs reflected responses to life experiences and included prenatal beliefs…postnatal beliefs…and the belief in independence as a survival mechanism (Cricco-Lizza, 2004, p. 1201).

She argues that finding ways to increase breastfeeding among low-income black women must take into account the life experiences of these women and that only through trusting relationships and support can providers seek to reach better outcomes (Cricco-Lizza, 2004).

All of these studies used qualitative methods and data to look at low income, African American mothers' decisions about infant feeding and all of them use their findings to make recommendations to healthcare professionals about how to better serve this population to increase breastfeeding practices. While each study

approached the problem from a different perspective, all discussed the need for nurses and physicians to take into account these women's lives, values, and beliefs when discussing infant feeding.

In general, research has found that African American mothers are more likely to introduce solids earlier than biomedically accepted guidelines of 4-6 months, rely heavily on grandmothers' opinions on infant feeding, are less likely to initiate breastfeeding, exhibit shorter duration of breastfeeding, receive less support for breastfeeding, and suffer from more external constraints to breastfeeding (Corbett, 2000).

Authoritative Knowledge

The current recommendations of the American Academy of Pediatrics are "exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant" (American Academy of Pediatrics, 2012, p. e827). As discussed above, many low income African American mothers do not follow these guidelines. One way in which to conceptualize the disconnect between biomedical/scientific recommendations for breastfeeding and infant feeding and African American mother's practices may be through ideas of authoritative knowledge. Brigitte Jordan put forth the concept of authoritative knowledge in her work on childbirth, technology, and biomedicine. She discussed it as:

> the knowledge that participants agree counts in a particular situation, that *they* see as consequential, on the basis of which *they* make decisions and provide justifications for courses of action. It is the knowledge that within a community is considered legitimate, consequential, official, worthy of discussion, and appropriate for justifying particular actions by people engaged

> in accomplishing the tasks at hand (emphasis in original, Jordan, 1993[1978], p. 154).

One important point about authoritative knowledge is that its position as such does not speak to its accuracy, but only to its significance within the culture (Jordan, 1993[1978]). She asserts that this knowledge is actively produced and legitimated by a community of people through routine practices. In Jordan's case, she is examining the production of authoritative knowledge during the process of childbirth in an American hospital. In this setting, she saw that the women's bodily knowledge was devalued in favor of technological and biomedical knowledge gained from monitors and physicians. However, as I am applying it here, authoritative knowledge is also constructed after the woman leaves the hospital. While her preferences may have been overlooked during labor and delivery, she must make the decision about infant feeding. Cultural ideals of breastfeeding, commercial influences of formula companies, medical personnel, friends, relatives, and many other sources offer information on infant feeding. Mothers construct their own knowledge through a negotiation among these sources and use that knowledge, which they legitimate through different avenues (as discussed below) to implement infant feeding strategies.

While most of the literature on authoritative knowledge has shown how biomedical knowledge often overshadows women's knowledge, such as during the birthing process, the research presented here on the phenomenon of infant feeding suggests alternative hierarchies for low-income, African American mothers (Davis-Floyd and Sargent, 1997). The study discussed in

this paper shows how Western cultural privileging and "'supervaluation' of machines over bodies, technology over nature" influences these women's version of knowledge, but does not necessarily completely dominate women's knowledge (Davis-Floyd and Davis, 1996, p. 238). Kingfisher and Millard found a similar phenomenon when they looked at conflict and contradiction in the establishment of authoritative knowledge (1998). Consistent with most of the literature on authoritative knowledge, they saw women's experience of motherhood and their own bodily knowledge often devalued in the face of the authoritative knowledge of the clinic and medical personnel (Kingfisher and Millard, 1998). However, they also found "that some women in the study drew their own conclusions in reaction to professional advice, creating their own syntheses of clinical advice and their knowledge of their own bodies" (Kingfisher and Millard, 1998, p. 448). The present study seeks to look at how women create syntheses of knowledge in the setting of infant feeding and care and how they use that knowledge to make decisions about their feeding practices.

Methods

Sample

For this study, I used data from the Infant Care and Risk of Obesity Study (Infant Care) (Sacco et al., 2007). This observational cohort study was conducted in two phases from 2002 to 2007 by a team of researchers led by Margaret Bentley at the Carolina Population Center of the University of North Carolina at Chapel Hill and was funded by the National Institute of Child Health and Human Development. The

researchers interviewed low-income, African American mothers with infants between three and 18 months of age living in several counties of North Carolina (see Appendix 1A for recruitment criteria). All of the interviews were conducted in the mothers' homes by an African American interviewer. While some of the interviews were interrupted by other household members, in general, the mothers were able to remain attentive and engaged in the interview after dealing with the interruptions. The interviewer took notes on the general appearance of the home and neighborhood, including the number of televisions, the cleanliness of the home, and the presence of parks and green spaces around the home.

Infant Care seeks to identify health risk factors present during the first two years of life, such as parenting practices or physical activity habits, that contribute to obesity in this at-risk population. The current study uses formative data collected in Phase 1, which consisted of in-depth interviews with mothers in the target population (see Appendix 1B for interview guide and demographic questions). This data was compiled to help develop the Infant Feeding Style Questionnaire, which was then used in Phase 2 of the study among a larger sample (Thompson et al., 2009). Within this formative data, I chose to focus on a subset of eleven mothers with infants between three and eleven months old, since these mothers most recently made and were making decisions about their feeding strategies at the time of the interviews.

Analysis

After thoroughly reading the transcripts to establish familiarity with the data, I began coding the interviews by hand. I initially coded every "thought" present in the

interviews and produced over 70 codes, which were largely descriptive. My codebook consisted of both emergent codes that I saw stand out in the data and codes that I identified from the interview guide. From this point, I went through several waves of coding, condensing and focusing my codes into several important themes. I worked through an iterative process of coding the transcripts, writing memos on key thoughts and themes, and analyzing the data through matrices and visual representations. This process helped me move from mostly descriptive analysis to a more interpretive examination of the data. Because I was not a member of the data collection team, I consciously strove to remain near to the data by constantly referring back to the transcripts in an attempt to avoid projecting my own biases into the analysis.

Results

Description of Sample

A demographic summary of the sample is available in Table 1. The interviews were conducted with eleven African American mothers between 18 and 35 years old with infants between three and eleven months old. The mothers' average age was 26 years old and infants were 6.8 months old on average. Nine of the women had at least one other child. Of the women asked, only one mother was not participating in Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The weight status of the mothers varied, with an average BMI of 27.6 and a range of 21.1 to 41.2 (with 18-24.9 as normal weight, 25-29.9 as overweight, and 30+ as obese). Household income ranged from less than $10,000 per year to $40,000-$50,000 per year. Two of the women had completed eleventh grade, seven of the

women had completed twelfth grade, and one had attended two years of college. More than half of the women were unemployed and two were students at the time of the interview. Six of the women were single, one was separated, and four were married or engaged. Eight of the mothers had breastfed for a period of time or were breastfeeding, all of whom had exclusively breastfed for less than four and a half months. Three mothers exclusively used formula.

Themes

I identified two emergent discourses that mothers used to help explain their decisions, “meeting needs” and “each kid is different,” and I also examined a range of “sources of knowledge.” These concepts were repeated across the interviews in different circumstances and interacted in interesting ways. Because of the extensive relationships among the themes, it is difficult to disentangle each theme as a single entity; although I present these themes individually, these connections are important to remember while considering how these results speak to women’s use and negotiation of knowledge when deciding how to feed their children. These connections are depicted in Figure 1 and will be examined in more detail in the discussion section of this paper.

Meeting Needs. One of the most prevalent themes in my analysis was what I labeled as “meeting needs.” Throughout the sample, all the mothers expressed concern about making sure that the child was “getting enough” to eat and worried when they perceived that the child was “not satisfied” or that their needs were not being met. They discussed this concept in response to a variety of questions, including when talking about why the mother chose to introduce formula and first

foods and how the mother chose between conflicting advice. Believing that the child was not satisfied was a rationale used by one woman to decide to begin supplementing breast milk with formula:

> When I spoke to the pediatrician at his one-month appointment, I questioned whether or not he was getting enough, because I felt like he was always hungry, and I wasn't sure if it was just, you know, the fact that he's a newborn and he needs to eat every two hours 'cause I'm breastfeeding him or if he was really getting enough, so he [the pediatrician] suggested maybe supplementing one of the night feedings with formula. (Mother #4).

After this initial supplementation, she believed that her son was more satisfied by the formula, and she gradually began increasing its proportion in his diet. We learn here that because the mother was not confident in her knowledge of breastfeeding, she reached out to the pediatrician in order to ensure that her son's needs were met. Another woman, when asked why she decided to switch from breastfeeding to formula, replied, "Because I wasn't producing for her demand. She had a high demand, and my supply wasn't there (laughter)" (Mother #9). Although she had been successfully breastfeeding for more than four months, she began to doubt her ability to meet the needs of her daughter, and, therefore, adjusted her feeding strategy accordingly.

Several of the women stated that they knew it was time to begin introducing cereal and other first foods because the child did not seem satisfied by formula and breast milk any longer. For instance, when asked why she began adding cereal to the bottle, the same woman who asked the pediatrician about her son's satiety above said:

> Because he seemed to have a never-ending stomach, like he could not get enough food, no matter whether it was breast milk or formula, so I had the

> suggestion of another parent that, you know, said to try this, and since then he's been sleeping through the night. (Mother #4)

The mother questions if her baby is getting enough, which she perceives through her interpretation of his hunger and satiety cues, and seeks to better meet his needs through the suggestion of a peer to introduce cereal into his bottles. She sees this advice as successful, as demonstrated by her son sleeping through the night, a sign of satisfaction echoed by several other mothers.

This theme leads to questions about how mothers know what a baby's needs are and how they know if they are being met or not. When the mothers thought that their children's needs were not being met, they used this knowledge to change their feeding strategies. These women make important decisions about their feeding strategies, both in agreement with and against recommended guidelines, based on their perceptions of their baby's needs above all else.

Each kid is different. The theme "each kid is different" also appeared throughout the interviews, echoed by all of the mothers in one form or another. I included both references to individual children and to groups of children being different. All of the women discussed how they thought that children could be different types of eaters and have different appetites. The women with more than one child illustrated this idea by comparing their different children's eating habits and needs. When asked if she thought that babies could be different kinds of eaters, one mother replied yes and explained by saying

> Uhm well, like these two, like I said, they're very different in the way that they eat in the sense of [he] wouldn't take nothing but breast milk for seven months. But she would take whatever and when she was hungry she would take it from the bottle or my breast. He wouldn't, you know. And he also

> didn't enjoy eating food until he was, like, nine [months], almost a year. And she enjoys food now. (Mother #5)

Her belief that children can be different types of eaters reinforces her different feeding strategies with her two children. Her evaluation of how the children differ helped her make decisions about how to feed her daughter versus how she had previously fed her son.

Other mothers discussed how children differ more generally. For instance, one woman discussed how knowing your individual child is important for understanding what they need:

> Some kids are different like that...what works for one doesn't always work for the other, you know...As far as feeding, well, people know their own...people know their babies, I mean, just to feel your baby out and try 'em on different things, you know, get a feel for them and they'll be okay, you know...But I still...you know, different babies are different and they like different things, you know. Know your own baby. Once they do that, they'll will be okay. (Mother #6)

Similar sentiments were repeated throughout the transcripts, highlighting how mothers understand that a parent's feeding and care strategies must take into account their child's unique combination of needs. Two of the mothers specifically applied this idea of a unique combination of needs more broadly, referring to differences in the needs of black babies and white babies. For instance, one woman said:

> All kids are not the same. And, you know, I'm not racist or nothing, but I think the way, like white people raise their kids or the way that black people raise their kids is totally different. That's why I don't really listen to some of the stuff they've [the doctors] been saying...I just don't believe some of the stuff they be saying. I don't listen to most of it. I go with my own decisions. As far as taking medicine and stuff, now, I listen to that. But their advice, I don't listen to. (Mother #8)

This mother states that physicians may know what is best when it comes to medicines and diseases, but not when it comes to how she should feed her daughter. In the transcript, she elaborates with an example from her godson and how she, and his mother, feel that he eats too much and is developmentally behind, but the doctor just brushes this worry aside saying “well, he’s a baby” and “he’ll be talking soon.” This quote reflects a concern with the applicability of medical knowledge to African American versus white children. The implicit assumption is that doctors provide “white knowledge” and that they may not know what is best for black babies when it comes to infant feeding.

Sources of Knowledge. Another prevalent topic that I identified, and was specifically asked about in the interview guide, was “sources of knowledge,” or where mothers obtained advice and knowledge about infant care and feeding. Mothers discussed getting advice from medical professionals, friends, relatives, and the baby’s grandmothers. They also talked about seeking out answers on their own through reading and research. Another way that women refer to knowing how to feed their babies is in response to their perceived hunger and satiety cues. In addition, mothers cited their “mother’s instinct” or “motherhood” as a source of knowledge. These sources of knowledge are displayed in figure 2.

The transcripts showed a widespread reliance on medical professionals. Women repeatedly mentioned discussing their feeding practices with their pediatricians and nurses, as already demonstrated in previous quotes. Mothers reported checking with their doctors before introducing new foods or making major changes, such as switching from breast milk to formula. They consulted on

everything from what foods to introduce first, to how to introduce them, to how much to feed their infants. All of the women said that if they suspected that their child was not eating enough over a period of a few days, they would contact their doctor to make sure that it was not a sign of illness. One woman expressed her trust in her pediatrician's advice, even if he did not have any children, because "they were taught, they went to school specially for, regarding how they take care of children, infants, so I would probably still listen to the doctor" (Mother #2). The weight that these women give to advice from doctors and other medical professionals, including nurses and lactation consultants, highlights the importance of their role in influencing healthy infant feeding habits. However, it is important to remember that this trust in physicians is not universal, as demonstrated by the quote by Mother #8 under the "each kid is different" theme, and that the mother's perception of the child's needs often overrides medical advice.

Women also discussed receiving both good and bad advice from their peers and seeking answers about appropriate infant feeding and care through reading and research. They reported reading about these practices both during and after pregnancy, in order to learn "the best way to do things." One woman, when asked if she felt knowledgeable about feeding her son, responded with:

> Yes, and not on my own, just a lot of research. I mean, I'm a research person and if I don't know the answer to something, then I'll look a million places until I find an answer. And if I find five answers, I'll ask people about them, or I'll try them out until I come up with something that works for me. But I continue to learn every day about breastfeeding, that's something I don't think I'll ever know enough about. (Mother #4)

Another common source of information was the children's grandmothers. Women talked about their parents' or grandparents' feeding strategies as both

negative and positive models. Some women discussed making decisions in opposition to how they were fed as a child:

> I do things different [than my mother] because like when my mom, she'd give my sister the Carnation milk, and I use formula. And I think, a lot of people in my family, I think they would start the kids on table food early, and I'm going to wait. (Mother #1)

In several cases, mothers decided on this opposition because they saw these practices relating to their own or other family members' problems with overweight or obesity. Other women followed positive examples set forth by their mothers, such as breastfeeding and emphasizing fruits and vegetables. Some women relied heavily on advice from their own mothers. One woman discussed double checking her doctor's guidance with her mother:

> R: As far as, along with the doctor telling me that he thought that she was ready, then I called my mom to ask her, "Well, mama do you really think that she's ready to eat?" And, you know, things like that. As far as what I could, you know, give her, "Do you think that's too much", or you know. So I call her about stuff like that.
> I: And does she usually – is there any difference between like what she says and the doctor says?
> R: Usually not. She's usually on point with the feedings and the foods and when she's ready. You know, she'll tell me she's not ready, don't bother. Or you know, she'll let you know when she's ready for food. So she's usually on point.
> I: If there is ever a time when there is a difference, who do you go with?
> R: My mama (laughs).
> I: Why is that?
> R: Because she's my mama and with all the grandchildren and her own children, I just feel like she's knowledgeable of – I think we came out pretty good, so what she tells me is usually what I go by. And I'll tell the doctor, "Well my mama said…" (laughs). (Mother #9)

Although this woman asks her pediatrician about infant feeding, she gives more value to what her mother suggests. This quote also highlights another commonality across sources of knowledge: the value of experience. When referring to doctors,

peers, and their own mothers, several of the women implied that they would more highly value someone's opinion who had successfully raised children over someone's who had not. Mothers also referred to their own experience, with their own children or with other's babies, as evidence as to how they know proper feeding habits.

Mothers' experiences with their children helped them identify their babies' hunger and satiety cues. All of the women mention that they know when their child is hungry because they are cranky or cry. Some of the mothers also discussed other hunger cues such as babies reaching for food, smacking their mouths, and sucking on things. Several of the mothers talked about relying on timing to determine when it was time to feed their child. Mothers discussed satiety cues such as babies burping, rejecting food, throwing up, and getting distracted to tell them when they were finished eating.

Women's experiences also helped them develop their mother's instinct. Several of the mothers' responses seemed to imply that the ultimate measure of knowing how to meet their child's needs was their "mother's instinct" or "motherhood." One mother said:

> Oh, that's where your motherhood comes in, in the sense that you have to make decisions that are the best for your children...And that takes a little more effort. Because anyone can go read a book and get lots of advice and then practice what they learn. But to take the time to study your child as well and to meet their need, their specific, particular need, that's a little bit more work. And then you have to make that decision. You know, you have to take that responsibility and say "OK, well, it comes down to me now because I'm the mother and I'm providing. I'm the one that's gonna have to live with the choices that they make, I make." So, you have to decide "OK, now this is how I'm gonna do it," and do it. (Mother #5)

Another mother (#9), when asked how she decided what advice to take and what to discard, answered “I try to listen to what people say, and I try to gather all the information I’m getting from different sources, and then I just make up my own mind. How my heart feels as far as my children, is what I do.”

These quotes reflect how different sources of knowledge interact to influence the mother’s feeding choices. All of the mothers implied this negotiation between their own opinions and other forms of information. For instance, when asked how she planned on determining when to introduce new foods, one mother said:

> ...depending on what the pediatrician says and kind of what his, the way his, I guess the cues that he [her son] gives me about whether he’s still getting enough off of what I’m giving him now between breast milk and formula and cereal. (Mother #4)

Later in the interview, she reiterated this process of choosing among different sources of knowledge:

> I’ve heard that children who are introduced to formula earlier than four months have a tendency to be overweight and have a tendency to have allergies, but it was more important for me to feel like my son was having enough to eat than to listen to that. (Mother #4)

This negotiation is extremely important to consider when looking at how mothers make decisions about their infant feeding choices. Hearing about their conflicting sources of advice and how they processed those differing beliefs can shed light on how mothers are actually evaluating and choosing infant feeding strategies.

Discussion and Conclusions

Discussion

This study has identified three interrelated insights as to how mothers discuss and explain their infant feeding strategies: the discourses of meeting needs and

each kid is different, and the theme of sources of knowledge. Though all of these ideas show up individually in the data, taken as a whole, they elucidate how these mothers are making decisions about infant feeding through a process of negotiation. Most importantly, the mothers want to feel that their children's needs are being met. In order to meet those needs, they must understand their child's needs as unique from other children. They draw from various sources of knowledge to construct the strategies that they feel will best meet the needs of their child. Though they get advice from physicians, nurses, peers, grandmothers, and their babies, they seem to process it all through the lens of "motherhood." When information is varied or conflicting, mothers talked about relying on their "mother's instinct" to identify what best applies to their children's needs.

In general, the data presented here confirm many of the trends discussed in the current literature on infant feeding in African Americans. Mothers' perceptions of infant hunger cues are an important part of infant feeding. While mothers felt that they knew how to tell when their child was hungry or full, most of the cues that they discuss are late-stage cues, namely crying and fussiness. This reliance on late-stage hunger cues speaks to the mother's feeding style and is a risk factor for the development of overweight in infancy (Hodges et al., 2008). Most of the mothers introduced cereal and other solids, as well as table food, well before the recommended age of six months. As mentioned in Horodynski and colleagues' work, several of the mothers seemed to not recognize cereal as "solid food" (2007). Only two out of eleven had not given their infants formula, echoing the prevalence of bottle feeding culture discussed in Cricco-Lizza's work (2004). There were also

parallels between this sample and the work of Karen Corbett; for example, both found that the perceived satisfaction of the infant drove the introduction of cereal and other first foods (Corbett, 2000). As discussed in Bentley and colleagues' work, grandmothers often played a large role in decisions about infant feeding, even when their advice conflicted with medical recommendations (1999). However, in contrast, the ultimate deciding factor seemed to be the mother's opinion, not the grandmother's. This difference is probably due to the different age groups presented in the two samples, and the fact that most of the women in Phase 1 of the Infant Care study did not live in multigenerational households, decreasing the grandmothers' access to and involvement with most of the infants. The breastfeeding initiation rate in this sample was higher than that of the general US population of black mothers (63.6% versus 54.4%), but the prevalence of any breastfeeding at six months was similar (25% in this sample versus 26.6% overall) (CDC, 2010).

While the general disparity of breastfeeding rates between the white and black populations in the US is troubling due to the health consequences for mothers and infants, this study demonstrates the importance of considering those populations in terms of individual actors who make daily choices based on opportunities and constraints placed on them (as suggested by Armelagos et al. in their 1992 paper). While structural constraints were not overtly discussed in the interviews analyzed here, several women briefly mentioned that the need to return to work or school influenced their decision to stop breastfeeding. The lack of breastfeeding support in the workplace or university setting functions to discourage

continued breastfeeding by creating an unsupportive, and sometimes hostile, environment towards breastfeeding or pumping. In fact, the recent *Surgeon General's Call to Action to Support Breastfeeding* highlights the importance of community and workplace support for breastfeeding mothers by specifically discussing social support and employment as both barriers to breastfeeding and targets for action to improve the success of breastfeeding mothers (USDHHS 2011). Many studies have examined the effect of maternal employment on breastfeeding outcomes, consistently finding that low-income mothers returning to work, especially those working full-time, have lower breastfeeding rates and shorter duration (for example, see Kimbro 2006)

Another interesting occurrence in these interviews was how mothers focused their discussions on the needs of the child and not on their own needs; however, these needs also affect their decisions about infant feeding. Glimpses of this were seen when mothers discussed their motivations of introducing formula to encourage their infants to sleep through the night, but mothers did not directly refer to *their* desire to be able to sleep through the night. The influences on the decision making process are complex, and not always fully considered by the decision makers; large scale factors, such as media and government policy, interact with individual level factors, such as support networks and beliefs, to shape how women make decisions about infant feeding (Bentley et al., 2003). This study, along with other qualitative and ethnographic studies, begins to contribute to the understanding of how these women are constructing their infant feeding strategies.

While much of the earlier literature on authoritative knowledge identified biomedical knowledge as authoritative and saw it as always overshadowing women's knowledge, the more recent, nuanced core of the framework looks to understand *when and for whom* biomedical knowledge dominates other forms of knowledge. I argue that in the case of infant feeding among these low-income black mothers, biomedical knowledge is just one form from which they draw upon to construct their own authoritative knowledge. Mothers report seeking information about many aspects of infant care and feeding from physicians, but then discuss how they temper these suggestions with their perceptions of their infants and the input of friends and family. Often, the ultimate source of their decision-making comes from their knowledge as mothers. They seem to consider this "mother's instinct" as a combination of intuition and learning through the experience of motherhood. If doctors' suggestions are corroborated by their other sources of knowledge, they use them to inform their decisions. However, unlike in other applications of the authoritative knowledge framework, biomedical knowledge is not considered the essential truth and does not seem to dominate mother's knowledge. Here, the various sources of knowledge get reassembled, synthesized, and legitimated through their ideas of what "motherhood" is and should be, a concept discussed by several of the participating women, and their perception of how that information helps them meet their children's needs. This echoes and expands upon the findings of Kingfisher and Millard when they saw some women "creating their own syntheses of clinical advice and their knowledge of their own bodies" (1998, p. 448). Though biomedical knowledge still plays a role in the decision making process, it is just one

source among many which women use to inform their choices. Through their everyday experiences with their infants, these mothers make decisions and either reinforce or adjust their feeding strategies through their observations of the outcomes of those choices.

In aggregate, the individual decisions of mothers create the disparity seen across the population, and it is therefore imperative to address and understand the context of these decisions. Breastfeeding is unequivocally tied to both culture and biology, and neither can be ignored if researchers want to develop a more nuanced, intricate understanding of how and why breastfeeding is, or is not, initiated.

Limitations and Strengths

One limitation of this study is its small sample size. With only eleven participants, it is difficult to claim generalizability or to apply these findings to the larger population. Nonetheless, small sample sizes are common and accepted in qualitative studies and allow for more in-depth knowledge than a larger sample might, as is demonstrated in the studies discussed previously by Corbett, Cricco-Lizza, and Horodynski and colleagues. In addition, the interviews were conducted following very specific interview guides and may have missed some of the richness of these women's stories. Because I was not a part of the collection of the data, I may have overlooked certain details or overemphasized others, a risk of secondary data analysis. While information gleaned from interviews, such as the data used in this study, is crucial for understanding mother's decision making processes regarding infant feeding, it is also important to note the limitations of this type of data. I have interpreted these women's narratives through *my own* social and

academic context and biases. It is important to think critically about the interview as a process that is created by both the interviewer and interviewee, and continued by the analyst (Briggs, 1986). The former two parties shape what is discussed and how those discussions take place and the latter party further interprets those discussions through their own lenses. In this case, factors such as discomfort discussing certain choices, feelings that they must justify their infant feeding strategies, or even a lack of direct consciousness of the structural and cultural factors directing their choices can all affect the completeness of interview data in answering questions such as the ones posed by this study. In the future, longer-term participant observation, coupled with repeated interviews conducted by interviewers who have established a rapport with the subjects, could help to clarify this data. However, the repetition of the themes I discussed, the similarity between these three discourses across multiple interview subjects, and the resemblance to the current literature, all indicate that these are important factors to consider, even if they are not the exclusive, or necessarily most important, factors guiding mothers' choices.

The strengths of this study are tied to its qualitative framework. For the aim of this paper, qualitative analysis of interviews was the ideal methodology in order to examine how these women were using different forms of knowledge to make decisions about infant feeding. The nature of secondary analysis also confers a possible strength; because I was not a part of the project from the beginning, I was able to come into it with a new perspective that was not already influenced by the process of grant writing, fieldwork, and data preparation.

Implications for future research

This study adds to the current literature of infant feeding in African Americans. Anthropology can contribute to this body of research by offering ethnographic methods and frameworks through which to examine both individual's perspectives and the broader context and culture within which those individuals operate. This study provides a look at how low income, African American women in North Carolina are making decisions about their infant feeding strategies and how they use different sources of information to make those choices. These findings can inform other researchers about possible themes to explore when working with similar groups. It can also be shared across disciplines to help educate health care providers about what matters to these mothers and how they can help them to feel secure in how they are meeting their babies' needs. Because these mothers draw from a variety of sources, interventions need to address all of these sources as possible avenues for educating mothers about recommended guidelines for infant feeding. There is often a disconnect between women's voices and beliefs and public health and biomedicine's imperatives, particularly surrounding birth and infant care. Above all, I hope that this study will encourage providers to work to understand mothers' knowledge and concerns as legitimate sources of information and will collaborate with mothers to create the best feeding strategies for healthy babies.

TABLE 1. Sample Population Characteristics

#	Age of mother (years)	Age of baby (months)	Siblings, #	WIC, time in WIC	Birth weight & Length	Mom's BMI (kg/m^2)	Mom's education	Mom's current employment status	Mom's Student Status	Mom's marital status	Household Income	Feeding type
1	27	5.5	Yes, 2	Yes, 3 months	7 lbs. 13 oz., 20.5"	32.3	12th grade	No	No	Single	$10,000-20,000	BF for 3 months, then formula
2	18	6	No	Yes, 10 months	6 lbs. 8 oz, 21.5"	30.8	12th grade	No	Yes	Single	$30,000-40,000	BF for 2.5 months, then formula
3	33	3	Yes, 3	Yes, 4 years	8 lbs. 14 oz., 22"	28.3	12th grade	No	No	Married	$40,000-50,000	BF
4*	Unknown	3	Unknown	Unknown	Unknown	Unknown	Unknown	Yes	?	Married	Unknown	Mixed, formula>BF
5	35	6	Yes, 1	Yes, 2 years	6 lbs. 14 oz., 19.5"	28.2	12th grade	No	?	Single	<$10,000	BF for 3.5 months, then mixed
6	27	11	Yes, 3	Yes	7 lbs. 3 oz., 15.5"	41.2	11th grade	Yes	No	Married	$20,000-30,000	BF for 2 months, then formula
7	20	7	Yes, 1	Yes, 7 months	7 lbs., 13 oz., 21"	21.1	12th grade	No	No	Single	<$10,000	Formula
8		8	Yes, 1	Yes	7 lbs. 4 oz., 22"	21.1	12th grade	Yes	No	Single	$30,000-40,000	Formula
9	28	8	Yes, 2	Unknown	8 lbs. 15 oz., 20"	26.6	2 years of college	Yes	No	Separated	$20,000-30,000	BF for 4-5 months, then formula
10	29	8.5	Yes, 1	Yes, 3 months	7 lbs. 2 oz., 22"	24.8	11th grade	No	Yes, part time	Single	<$10,000	Formula
11	21	9	Yes, 1	No	6 lbs. 3 oz, 19"	21.6	12th grade	Yes	No	Engaged	$30,000-40,000	EBF for 3-4 months, then started juice (no formula)

* No demographic information was collected during the interview with Mother #4.
WIC = Women, Infants, and Children Nutrition Program
BF = breastfeeding
EBF = exclusive breastfeeding

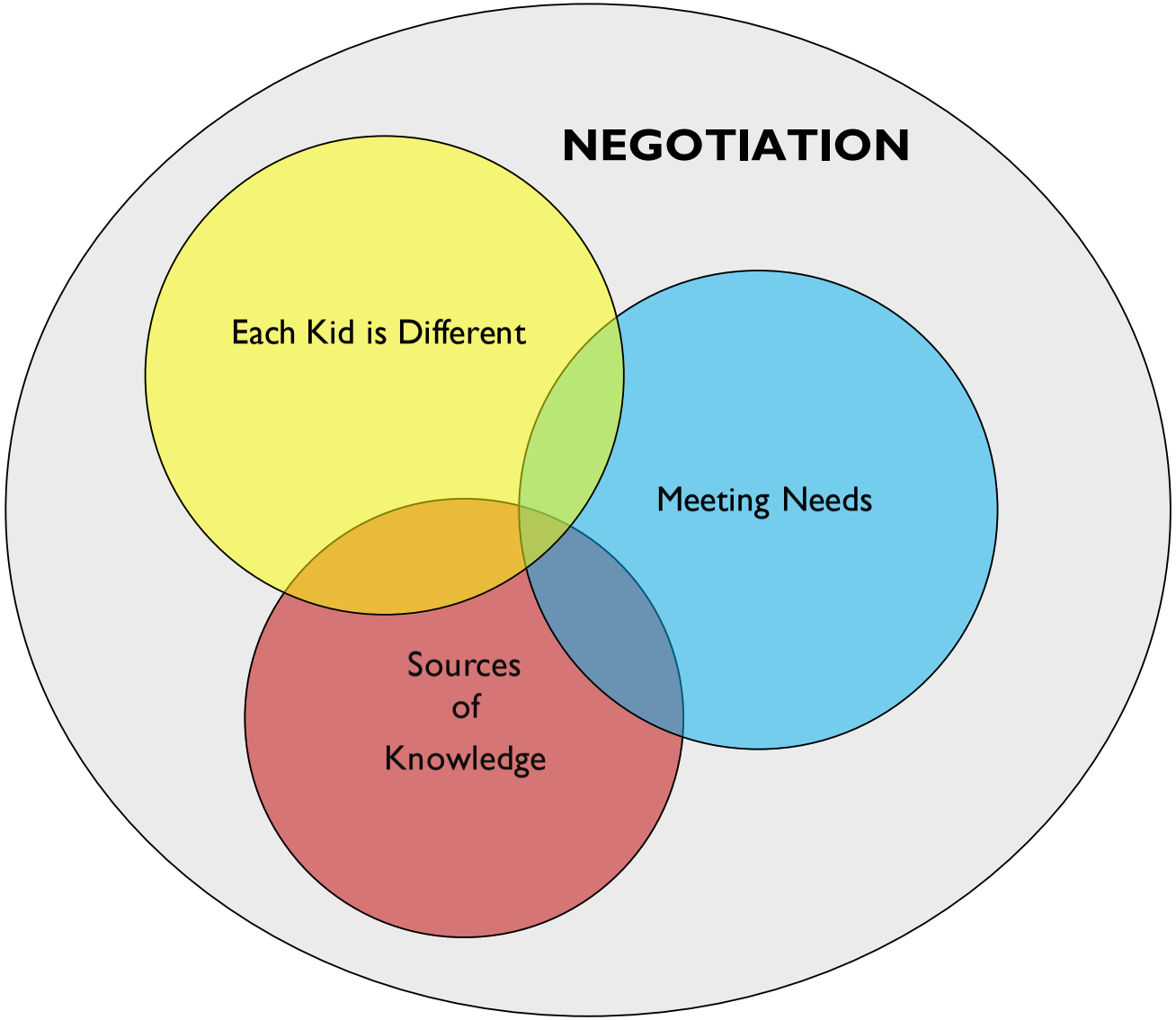

Figure 1. Mothers' Negotiations around Infant Feeding: Relationships among Themes

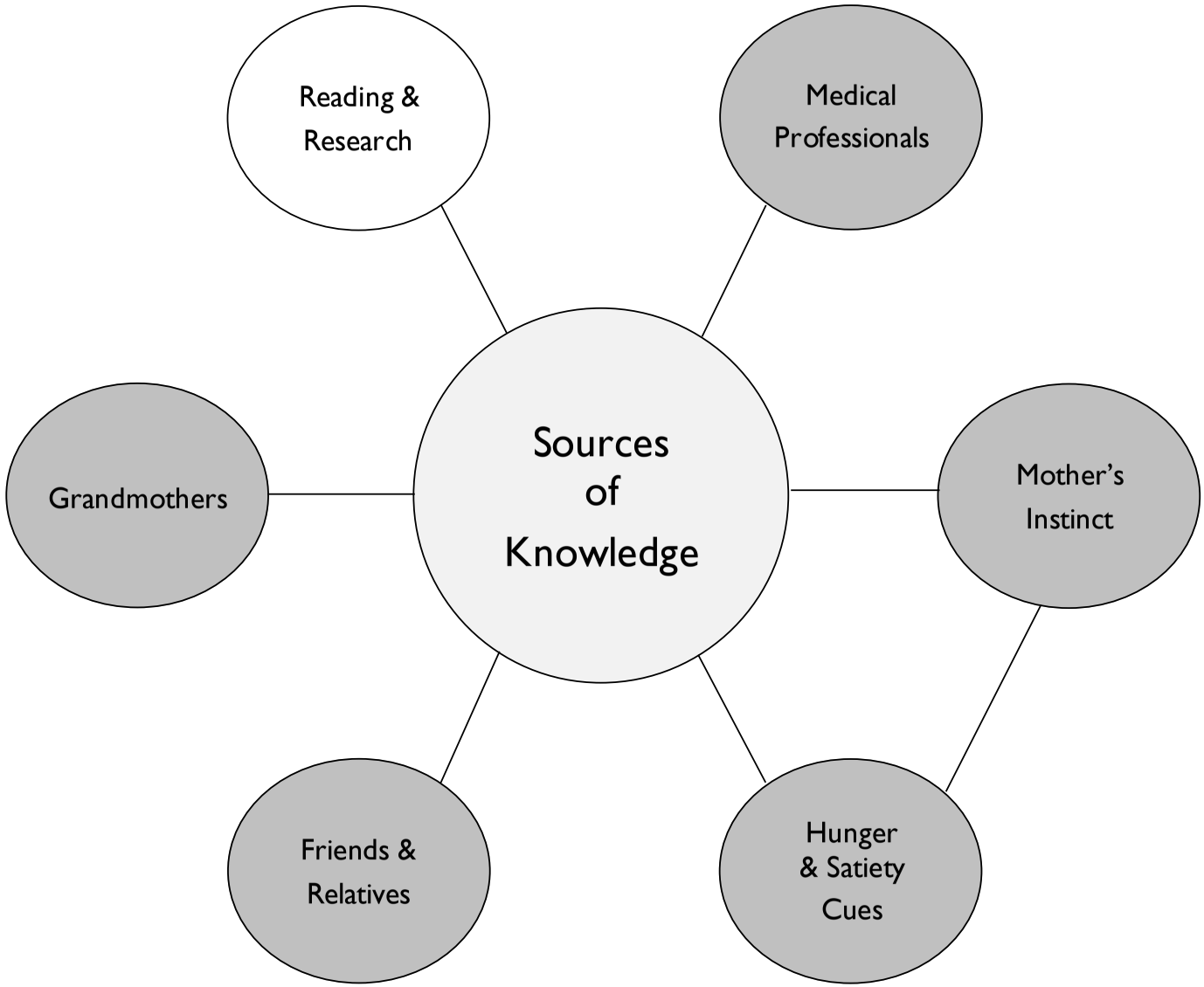

Figure 2. Mothers' Sources of Knowledge. The darker grey color indicates sources where experience is valued and used when evaluating the source. Notice that a mother's instinct is also used to assess hunger and satiety cues.

APPENDIX B

Recruitment Screening Questions

Date: _____ Time: _____ Interviewer's name: _____

We are conducting research with African-American women on infant care practices. This research will help us to better understand infant care, feeding and physical activity. We are not trying to sell you anything; we are simply trying to obtain opinions that will help us better understand infant care. What you tell us will in no way affect the services you are receiving. Do you have any questions at this point before I proceed? I would like to ask you a few questions to see if you qualify for participation in our project. We will not keep this information if you do not qualify for the study. May I proceed?

Note: Instructions for interviewers in CAPS

Recruitment location	**CHECK IF APPLIES**
1. Do you consider yourself to be Hispanic, Latino or of Spanish origin?	__No
3. What race do you consider yourself to be?	__Black or African American
4. Are you between the ages of 18-35?	__18-35
5. In which county do you currently reside?	__ Orange, Durham, Wake, Granville, Vance, Lee, Alamance, Person
6. How long have you resided in this county? _____ IF LESS THAN 6 MONTHS, ASK: In which other county/counties did you reside before moving to your present address?	__ lived in any of study counties the past 6 months
7. How long do you plan on staying in this area?	__ next 24 months
8. How many children do you have?	
9. Do you have children between 3-18 months of age? Yes ___ No ___ 10. If yes, what is the sex of this child? 11. what is his/her date of birth? 12. How old is s/he (in months)? 13. How much did s/he weigh at birth? 14. How long did this pregnancy last (in weeks)? 15. Does this child have: Downs Syndrome? Epilepsy? Cleft lip or palate? Cerebral Palsy? Failure to thrive? Diagnosed mental retardation? Any other serious health problems or medical conditions that require regular treatment? IF YES, ASK: What are these health conditions? ********** HC (healthy condition): check if no health conditions, otherwise put appropriate code: DS: Down's Syndrome E: Epilepsy FTT: failure to thrive CP: Cerebral Palsy CLP: Cleft lip/palate DMR: Diagnosed mental retardation GA (full-term): check if >35 weeks gestation	DOB Age BW GA HC Sex _____ ___ _____ ___ ___ ___ _____ ___ _____ ___ ___ ___ _____ ___ _____ ___ ___ ___ _____ ___ _____ ___ ___ ___
16. Do you have any serious health problems or medical conditions that require regular treatment? IF YES, ASK: • What is this health condition? • How often do you receive medical care for this illness? • Do you need help with your daily activities? • Are you able to feed your infant without help?	___ check if NONE or if health condition deemed by office staff as healthy
17. How many people are in your household? 18. What is your annual income? (monthly?) (weekly?) ********** Household size: Yearly income: Monthly income: Weekly income: 1 22,450 1,871 432 2 30,300 2,525 583 3 38,150 3,179 734 4 46,000 3,833 885 5 53,850 4,488 1,036 6 61,700 5,142 1,187	__ Check if the income based on household size falls below the levels to the left

Seems like you qualify for this study so far. I will now ask 3 questions. If the answer to any one of these questions is yes then you will not be eligible for this study. Please listen to all three questions before letting me know if you are eligible. 18. In the past 2 years, were there times when you've had 6 or more alcoholic Drinks on one occasion on a daily or weekly basis? 19. In the past 2 years, have you used any form of prohibited drugs on a daily or Weekly basis? 20. Are there any reasons that you would be unavailable to participate in this study?	____no

IF RESPONDENT IS NOT ELIGIBLE: I'm sorry, based on your responses you are not eligible to participate in this project. We will not keep any of this information. Thank you for your time and interest.

IF RESPONDENT IS ELIGIBLE: Based on your responses, you are qualified to be included in our list of participants. Our project can only accommodate a number of participants. Thus, we will be randomly selecting the final set of participants from this list. May I ask you a few more questions should you be one of those selected for the final set?

ONLY FILL THIS OUT IF RESPONDENT IS ELIGIBLE!

Name:_____

Address:_____City:_____ Zip Code:_____

Telephone Number:_____ Best time to contact? _____

Email (if applicable):_____ Alternate Contact: _____

When would you be available for home visits? _____

****

Office Use Only:

1. ASSIGN ID NUMBER
2. STAPLE THIS SHEET ALONG WITH SCREENING DATA SHEETS.

Household Number ☐☐☐

Respondent Code (relationship to study child) ☐

Child Number ☐☐☐

APPENDIX C

INFANT CARE PROJECT DEMOGRAPHIC INFORMATION SHEET

University Of North Carolina at Chapel Hill

ALL INFORMATION IS CONFIDENTIAL

Information Regarding the Primary Caregiver

Respondent's name _____

Relationship to child_____

Child's name_____ Child's Age (mths) _____

Child's date of birth _____

Home Address (Street 1) _____

Home Address (Street 2) _____

City _____ Zip _____

Home Phone Number_____

Work number and/or cell phone number _____

Alternate contact & number _____

Does the child's mother live in household? Yes No,

If no, reason_____

How much did the child weigh at birth? _____

How long was the child at birth? _____

Was the baby carried to term? Yes No If no, how long did this pregnancy last (in wks)? _____

How much do you currently weigh (ask her to estimate if don't know) _____ kg or lbs?

What is your height? _____ (specify units)

Is the mother currently participating in WIC or other intervention programs? Yes No

What programs?

_____

When did you start participating in those programs?

_____

1. Now we would like to ask you a series of questions for yourself and each of the people who normally live in your household. Please tell me the first names of all of the people who live in your household starting with yourself and the child taking part in the study. If someone usually lives in your household, but is away for a short time, include him or her.

First Name	Relationship to child involved in the study	Length of time lived in same house-hold as child in the study (in months)	Sex (M/F)	Age
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

2. Now we would like to ask you a series of questions about the adult members of your household.

(Instructions to interviewers: Please write all adult members (aged 18 and over) of the household from the above table into the first column of this table and ask the following questions. For the shaded areas, please circle the answer which is most applicable.)

Name	What is the highest grade in school that this person has finished?	Is this person currently employed? IF YES, in what occupation?	Does this person work full time or part time if employed?	Is this person currently a student? If YES, area of study? FT or PT?	Is this person currently single, married, separated, widowed or divorced?	How involved is this person with feeding the baby?	How involved is this person in taking care of the baby (other than feeding)?
1.						A lot of the time Sometimes Never	A lot of the time Sometimes Never
2.						A lot of the time Sometimes Never	A lot of the time Sometimes Never
3.						A lot of the time Sometimes Never	A lot of the time Sometimes Never
4.						A lot of the time Sometimes Never	A lot of the time Sometimes Never
5.						A lot of the time Sometimes Never	A lot of the time Sometimes Never
6.						A lot of the time Sometimes Never	A lot of the time Sometimes Never
7.						A lot of the time Sometimes Never	A lot of the time Sometimes Never

3. **Does your child currently spend time at (check if yes):**

a) _____a home other than yours If yes, whose home? _____

-number of hours each week the child spends_____

b)_____day care facility

Age of child	Length of time at facility	# of hours per week	Name of facility	Why in day care…	Why left?

4. **What is your household income?**

Under $10,000

$10,000-$20,000

$21,000-$30,000

$31,000-$40,000

$41,000-$50,000

$51,000-$60,000

Over $60,000

Interview Guide for Household In-Depth Interviews: Interview 1
Infant Feeding and Development
Mothers with infants 4-18 months old
(guides may be slightly revised based on infant ages)

Breastfeeding/other milks/use of bottles

- Are you breast, formula feeding the baby, or mixed feeding? (probe: why, why not; how long intend, how feel about breastfeeding, use of bottles)
- If breastfeeding baby, how long did you/do you plan to breastfeed? When/why decide to offer additional foods?
- Are you giving the child any other fluids besides breast milk? Water?
- Tell me about the pattern of breast/bottle feeding throughout the day? (probe: time, duration, if not breastfed, who feeds bottles etc)
- When you feed the baby with a bottle, do you ever add anything in addition to the formula or milk? (probe: cereal in bottle, how (enlarge nipple), why, etc.)
- How is the formula mixed? (is it ready made, powder, why chose the one they use)
- Ask about free samples of formula…from where?
- Let's imagine that you have prepared a bottle for your infant or a cup of milk (if not bottlefeeding at all), and when the bottle is half finished, your baby doesn't want any more. What do you do? Why or why not? (probe: should the baby finish or not)
- Some people prop the baby's bottle. Tell me about what you think about that? Do you or did you ever or do others?? give your baby a bottle in this way? Why or why not?
- Does the baby have a pacifier? Why or why not? If yes, when use it, how often, how feel about that, when plan to discontinue, etc.

Introduction first foods

- What is the best age to begin giving other foods/fluids (in addition to infant formula/milk?) (probe: why, what food/fluids, at what age, get lists and reasons)
- How do you know when it is time to begin feeding other things in addition to milk? (probe on cues for different foods)
- What about with this infant, what did you/do you plan to do in terms of introduction of other foods/fluids?
- At what age did you introduce fruit? What about vegetables?
- Let's imagine that you would like to introduce green beans to the diet of your baby. What would you do if she rejected the first bite that you gave to her? (probe: try to continue feeding? Try again another day? Give up completely?) What about other 'new' foods?
- What are baby's favorite foods? Do you often feed them? Why or why not?

Frequency of feeds

- How often should an infant be fed during the day? Meals? Snacks?
- Is it important to have a schedule or routine for feeding? Why/why not?
- What happens to your schedule/routine (if any) when you must go out (to work, other venue)? How do you feel about that?
- How do you keep track of how much and how often your child eats?

Feeding environment

- Earlier you fed your baby by… Is this how you normally feed ____? Tell me about where you feed your infant? Where is the infant? Where are you? (probe: floor, high chair/regular chair, special utensils etc)
- Does baby eat with the rest of the family or be fed separately? Why or why not?
- Does the baby listen to music or watch TV during feeding time? Tell me about that.
- Can you give me one word or phrase that describes how you generally feel when feeding baby? Why? [probe: stress, confident, frustrated, worried, etc.]

Multiple Caregivers

- Tell me about who takes care of your baby? (probe: typical day, weekdays, weekends)
- Who feeds the infant? Why? When/how often? (probe, grandmother, father, others)
- Do you ever worry that someone will feed your baby differently than you would like? Tell me about that?
- Under what circumstances do others feed the baby? How do you feel about it? What about in daycare?
- Do they feed differently than you, in terms of the types, amounts, or feeding environment?

Hunger/appetite/cues/satiety

- Do you think that babies can be different kinds of 'eaters', for example, have different kinds of appetites? (probe: Are some babies always hungry? Always not hungry? Finicky? Accepting? Voracious? Etc. you want a taxonomy here, probe carefully for terms, labels such as 'greedy', 'picky')
- How do you know when your infant is hungry? What happens?
- What do you do when you think your child is hungry? (probe: feed immediately, breast/bottle/snack)
- Does your baby ever show you he doesn't want to eat? What does he do?
- Tell me about **your** baby's appetite? What kind of an appetite does she have? What do you think about that? (probe: poor appetite, 'greedy', insatiable, etc.)
- Does she ever show you that she is still hungry, or wants more to eat after you have fed her? What do you do?
- Let's imagine that your child isn't accepting very much food you offer for 1-2 days, what should happen? (probe: pressure to eat; not concerned; talk w doctor, others, etc.)
- Do you think a baby can eat too much? Why or why not? What can happen? (probe: what is too much)
- Do you think a baby can eat too little? Why or why not? What can happen? (probe: what is too little)
- Compared to other babies, do you think your baby eats more? Why or why not? What can happen? (probe: what is eating more)
- Compared to other babies, do you think your baby eats less? Why or why not? What can happen? (probe: what is eating less)

Advice and Experience

- Before you had your baby, did you have any experience with infant feeding? What was it? Do you find yourself doing things differently with your baby? Before you baby was born, did you have any ideas about how you would feed her? What made you decide that??
- In general, do you feel that you have enough knowledge about how to feed baby? If not, what more would you like to know? What don't you feel you understand?
- Do you feel knowledgeable about feeding your baby? What about other babies?
- What do you feel you are doing right? What are you struggling with?
- Were you given advice about how to feed your baby? What was it? From whom? (find out about peoples' ages, relation to respondent, etc…)
- What advice did you keep? How do you know what to keep and what to ignore?
- What do you think is the reason they told you to do…?
- Are there any circumstances where you feel either that what you are being told is wrong or that your child needs something different?
- Do you have any memories of mealtime when you were younger? Did your mother have any particular way that she fed you that you remember? [probe, does that influence her style] What do you remember about being fed when you were younger?

Styles of feeding

- Can you give me one word or phrase that describes your style of feeding?
- Are there any foods that you think it's important for your child to eat daily? What are those foods? How do you make sure she eats those foods? What happens if she rejects those foods?

- Are there any foods that you try to avoid feeding your baby? What, when? [probe junk, sugar, salt, other]
- Are there any circumstances when a mother/caregiver should insist that a child finishes all her food? (probe, if yes, what are the strategies/behaviors to do this?; if no, why not?)
- When do you think a child can begin to self-feed, at least some foods? (probe: when, why, how know?
- When do you think a child can begin to hold a bottle and feed herself? (probe: when, why, how know?)
- When do you think a child can hold a cup and drink herself? (probe: when, why, how know?)
- When do you think a child should feed herself completely? Why? How do you know? (probe: when, why, how know)
- Is it okay for baby to touch, explore even play with food when learning how to eat? How long should this happen?
- Do you think it is ok for a baby to get very messy with food (on floor, on face, etc)?
- Are there any circumstances when a mother/caregiver should offer the child no help to eat at all? (probe: why or why not?)
- Do you think that it is more important for the baby to decide when he or she should eat or how much to eat, or is it more important for the mother to decide how much the baby should eat?
- What are all the different ways a mother can encourage her child to eat? (probe on strategies, such as helping, verbalization, role playing, pressuring etc)
- What kind of help/encourage is just right? Works best?
- What kind is too much? Isn't helpful? Is harmful?
- How do you think children become fat or overweight? Does the way a mother feeds a baby influence this?

Types of Food and Utensils

- What are the main foods that your baby is eating now? (videotape or take picture if possible) (probe to see if food is jarred, homemade, cereal etc)
- How often does s/he eat each food? Every day?
- What are the specific brands of the food? How is it made?
- Are the utensils you used today what you would normally use to feed your baby? What in addition?

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