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A Qualitative Study to Understand Nativity Differences in Breastfeeding Behaviors Among Middle-Class African American and African-Born Women

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Abstract *Objective* To explore nativity differences and the role of attitudes, social norms, and behavioral control perceptions surrounding breastfeeding initiation and duration among middle-class African-American (AA) and African-born (AB) mothers in the US. *Methods* Semi-structured individual interviews were conducted with 20 middle-class AA and AB mothers in central Ohio from December 2012 to February 2013. Interview questions were developed based on the Theory of Planned Behavior (TPB). Interviews were analyzed for salient themes by TPB constructs. Differences in themes were examined by nativity status. *Results* All study participants had initiated breastfeeding or bottle-feeding with expressed breast milk, noting the benefits it conferred as well as the persuasive encouragement they received from others. Persistent encouragement was often cited as a factor for sustaining breastfeeding. More AA mothers had discontinued breastfeeding by the time of the interview, which was often attributed to health, lactation, and work challenges. Inconsistent support from health providers, dissuasive remarks from others, ambivalent breastfeeding attitudes, and diminished family support led some mothers to begin formula supplementation. Analysis of maternal narratives revealed nativity differences across sources of encouragement. Specifically, important sources of encouragement were health providers for AA mothers and family, friends, partners and culture for AB mothers. Only AB mothers expressed concerns about difficulty they encountered with breastfeeding due to the lack of proximal family support. *Conclusions* Findings reveal that both groups of mothers may be susceptible to unsupportive breastfeeding norms in the US and also highlight the need for intervention in health care settings and workplaces to improve AA women's breastfeeding rates.

Keywords Breastfeeding · Health disparities · Immigrant health · African American mothers · African-born mothers · Theory of Planned Behavior

Significance

What is already known on this subject? The reasons underlying the persistence of disparities in breastfeeding by race/ethnicity and nativity status are poorly understood. Most breastfeeding disparities research has focused on women at the greatest socioeconomic disadvantage with little attention given to women across the broader socioeconomic continuum or to immigrant women.

What this study adds? This study investigated nativity differences and determinants underlying breastfeeding initiation and duration among middle-class AA and AB mothers. Findings suggest that both groups of mothers may be vulnerable to unsupportive breastfeeding norms in the US and also highlight the need for intervention in health care settings and workplaces to improve AA women's breastfeeding rates.

Introduction

Despite the established benefits of breastfeeding for infant and maternal health [4, 20], racial and ethnic disparities persist for this behavior in the United States (US).

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Surveillance data from 2010 show that initiation, duration, and exclusivity rates vary by age, race, education, and income, and remain low among young women, Black-women, women with less than a college education and those at or below the poverty level [11, 35]. In addition to the racial/ethnic disparities in breastfeeding in the US, recent research has also documented differences by nativity or immigrant status within racial/ethnic groups. Findings from these studies reveal foreign-born or immigrant mothers intend, initiate, and sustain breastfeeding behaviors at higher rates and longer durations than their US-born counterparts among all racial/ethnic groups [12, 25, 37].

Most empirical and qualitative research examining racial/ethnic disparities in breastfeeding and Black women's experiences with breastfeeding, in particular, has focused on women of lower socioeconomic status (SES) [7, 24, 25, 33]. However, socioeconomic gradient patterns in health outcomes, including breastfeeding, suggest that further research is needed to address factors affecting a larger portion of the population across the broader socioeconomic continuum, rather than focusing only on those at greatest socioeconomic disadvantage [5].

Additionally, the literature on the breastfeeding experiences of foreign-born or immigrant Black mothers is limited. Black immigrants of African and Afro-Caribbean origin comprise an increasing share of the U.S. Black population, and children of Black immigrants also comprise a growing proportion of all young Black children in the US [16, 23]. Given the increasing share of immigrants in the Black population and the accompanying acculturative processes that tend to drive immigrant behaviors toward the convergence of native-born-behaviors [13, 14, 26], it is important to understand the protective patterns underlying behaviors and reinforce or encourage these protective factors that accompany immigrants so that immigrant women and their offspring maintain health-promoting behaviors, including breastfeeding.

In particular, there is a dearth of literature on the reasons behind the continuation of racial and intra-racial (by nativity status) breastfeeding disparities. Previous research suggests that subjective norms, particularly discouraging social norms, might underlie the persistent gap in breastfeeding rates between Black women and women from other racial and ethnic groups [2, 24, 27]. Other research noting ethnic-nativity differentials in breastfeeding rates has similarly suggested that such differences might reflect cultural norms surrounding breastfeeding practices in immigrants' countries of origins [37]. The racial and intra-racial differences in breastfeeding behaviors, particularly among Blacks, warrants further investigation because comparisons by race/ethnicity may obscure important differences for breastfeeding that are observed intra-racially. Moreover, interventions that are designed to move Black women's breastfeeding rates closer to national targets established under *Healthy People 2020* are more likely to be successful if they are based on an understanding of the nuanced factors that contribute to differences in these behaviors.

The current study addresses these gaps by exploring socio-cultural and behavioral determinants underlying breastfeeding initiation and duration among middle-class, Black mothers living in the US. Middle-class mothers were selected because there is limited research available on infant feeding decisions among this sub-group of Black mothers. Using a qualitative approach, we aimed to understand infant feeding experiences from mothers' perspectives and how these experiences differed by nativity or immigrant status. The investigation was informed by constructs derived from health behavior change theory, specifically the Theory of Planned Behavior (TPB). The TPB posits that behavior and behavioral intentions are determined by (1) one's attitudes toward performing the behavior; (2) one's beliefs about whether important referent individuals approve or disapprove of the behavior weighted by one's motivation to comply with the referent (subjective norm or social norm); and, (3) one's perceived behavioral control, a construct reflecting an individual's beliefs that they have and can exercise control over performing the behavior [1, 31]. A variety of factors contribute to women's infant feeding decisions, and many of these factors parallel those of TPB constructs [10]. Thus, the TPB offers a useful framework through which to understand women's infant feeding decisions and further unpack breastfeeding disparities. This perspective also allows for exploration into the attitudes, social norms, and constraints that shape Black women's infant feeding decisions.

Methods

Study Design and Sample

This study drew on semi-structured interviews with a purposive sample of 20 Black, both African American (AA) (n = 10) and African-born (AB) (n = 10), mothers in central Ohio who provided information on their infant feeding practices as part of a larger mixed methods investigation exploring the role of social norms, particularly breastfeeding discouragement, on breastfeeding initiation and duration. Potential participants were informed of the study through emails, flyers, and presentations to personal (friends, family, churches, civic organizations) and professional (lactation consultants, health department) networks. Eligibility criteria included: (1) maternal age of 18 years or older; (2) having an infant no older than

18 months of age at the time of the maternal interview to reduce recall bias; (3) Afro/Caribbean, African-born, or African American; (4) English-speaking; and, (5) having a college degree (including associate) OR reporting middle-income status (the latter defined as those who do not qualify for or receive governmental/public services and those with reported annual household incomes at or above 250 % of the federal poverty level (based on 2012 HHS federal poverty guidelines) but not exceeding $150,000).

A total of 20 mothers, ten African-American (n = 10) and ten African-born (n = 10), participated in a single semi-structured interview with the first author (CF). Participants were recruited to meet a priori recruitment goal numbers. Prolonged engagement was used to build trust and rapport within the study population. In particular, by actively engaging with the study population at children's events, religious services, and community gathering places over a 1 month period, the first author became familiar with the people and locations. Half of the interviews were conducted in the mother's home; the remainder occurred in public spaces such as libraries. Before each interview, participants provided written informed consent and completed a brief demographic questionnaire that included their age, birthplace, employment/school enrollment status, residential history in the United States (if applicable), infant feeding choice (ever breastfed versus bottle-fed), and length of time they breastfed (if applicable). Upon completion of the interview, participants received a $20 retail gift card. Interviews lasted between 40 min and 1.5 h and occurred between December 2012 and February 2013. Each interview session was audio-recorded and observational notes of participant's verbal and nonverbal cues were also noted and added to transcripts to aid in data analysis. The Institutional Review Board for human subjects protection at the University of Illinois at Chicago approved the study protocol.

Interviews

The interview format was semi-structured with one introductory question and five core questions. Core questions revolved around the mother's experiences and views about infant feeding (bottle-feeding and breastfeeding) while growing up, during pregnancy, and since the delivery of the infant; the role that family members, friends, and health providers played in those experiences; and, the barriers and challenges that participants encountered during infant feeding in the most recent pregnancy. The interview guide was adapted from questions used in previous research that explored attitudes and infant feeding practices among African American mothers [3]. Core questions were also supplemented with probes to elicit TBP constructs including mother's attitudes, normative beliefs and influences, perceptions of behavioral control, and behavioral intention to breastfeed. The informal structure of the interview format facilitated rapport-building and also allowed participants the opportunity to express their stories in their own ways.

Data Analysis

Conventional qualitative data analysis approaches were used to identify thematic patterns from the interview data [32]. Recorded interviews were transcribed verbatim by the first author and a professional transcription service. Transcripts were then reviewed for accuracy. The first author developed a preliminary codebook based on the topic domains from the interview guides and model constructs from the TPB (attitudes, subjective norms, perceptions of control). This methodology represents a theory-based approach to qualitative data analysis in which conceptual labels are derived from the literature [30]. To refine the codes, an additional researcher trained in qualitative research coded four transcripts (2 transcripts from AA participants and 2 transcripts from AB participants) independently. The two coders discussed disagreements, and code definitions were revised after each meeting. Inter-rater reliability (overall percent agreement) improved after each meeting and reached 83 % for the transcripts involving the AA participants and 73 % for the transcripts from the AB participants. The first author then systematically coded all transcripts using the new codes after importing them into ATLAS.ti qualitative data analysis software.

ATLAS.ti software was used to analyze codes, patterns and relationships, identify themes and examine differences in attitudes, subjective norms, and perceived behavioral control by nativity status. Query reports were generated by nativity status corresponding to each model construct, and passages were reviewed several times for recurrent ideas and patterns. Matrices or data displays were prepared to identify and summarize key themes by model construct and to compare text by nativity status [30]. For each model construct, a separate matrix was created that summarized and organized the relevant quotes and summary statements by themes. The code co-occurrence tool in ATLAS.ti was used to understand factors that contributed to breastfeeding continuation and discontinuation.

Results

All 20 participants had initiated breastfeeding or fed expressed breast milk to their infant following their infant's birth. At the time of the interview, most AA mothers had discontinued breastfeeding whereas most AB mothers were still breastfeeding (Table 1). Reports of breastfeeding

Table 1 Characteristics of qualitative participants, by nativity status, ($N = 20$)

Characteristic	African American ($n = 10$)	African-born ($n = 10$)
Maternal age range, years	22–38	21–39
Mean maternal age, years (*SD*)	30.7 (5.2)	28.8 (4.7)
Mean infant age at interview, months (*SD*)[a]	7.9 (4.9)	6.9 (5.1)
School/work status at time of interview		
Not in school or employed	0	3
On maternity leave	3	2
Enrolled in school or currently employed	7	5
College-educated (including associate)		
Yes	7	8
No	3	2
WIC-eligible		
Yes	4	6
No	6	4
Ever breastfed or expressed breast milk		
Yes	10	10
No	0	0
Still breastfeeding at time of interview		
Yes	3	7
No	7	3
Breastfeeding duration		
Less than 1 month	3	0
1 to <6 months	4	3
6 to <12 months	3	4
12–18 months	0	3
Country of birth		
Ghana	–	4
Nigeria	–	5
Sierra Leone	–	1
Length of residence in US		
<1 year	–	1
1–2 years	–	4
3–9 years	–	0
10–15 years	–	3
16–20 years	–	1
21 years or more	–	1

[a] Age missing for 6 infants (3 African American and 3 African-born mothers)

duration ranged from <1 week to 11.5 months for AA mothers and 9 to 12 months for AB mothers among mothers who had discontinued by the time of the interview. Mean infant age at the time of the interview was 7.9 months (SD = 4.9) for infants of AA mothers and 6.9 months (SD = 5.1) for infants of AB mothers, ($t = 0.29$; $p = .79$). An overview of the demographic characteristics by nativity status for the qualitative sample is shown in Table 1. Table 2 summarizes the reasons cited for breastfeeding discontinuation among those mothers who had weaned by the time of the interview.

The analysis focused on identifying major themes related to the attitudes, social norms, and behavioral control perceptions underlying the infant feeding decisions and practices of middle-class AA and AB mothers, and also understanding how both groups of mothers differed along these constructs. Nine themes related to these constructs were identified. The first three themes (*Significance of Early Life Impressions; Breast is Best;* and, *Breastfeeding Ambivalence*) illustrate the variation in attitudes that emerged among mothers when recalling the ideas they had about breastfeeding as a child, during their pregnancy, and

Table 2 Reasons for discontinuation among mothers who weaned by the time of the interview, ($n = 10$)

Reason	Frequency
Not producing enough milk/nipple pain	3
Decreased milk supply due to returning to work (work demands and schedule)	2
Thought it was a good time to stop	2
Mother got sick and could not breastfeed	1
Mother wanted body back	1
Mother wanted to use contraception and did not want it to interface with breast milk	1

since the delivery of their infant. The next two themes (*Persuasive, Persistent, and Palpable Encouragement;* and *Subtle and Not-so-subtle Dissuasions*) identify and describe the type of social norms that mothers encountered during their infant feeding experiences. The final four themes capture the barriers and facilitators that shaped maternal perceptions of control surrounding their infant feeding practices. These are: *Roller Coaster Confidence; Breastfeeding Interference; Stories of Accommodation and Resilience;* and *Internal and External Desires.* Illustrative quotes are presented by themes and constructs in Table 3. Findings are presented below both by construct and theme.

Attitudes

Significance of Early Life Impressions

Mothers vividly recounted how they remembered witnessing either bottle-feeding or breastfeeding growing up among their family members and community. Some remembered observing both bottle-feeding and breastfeeding and indicated that they were fed via both methods. African American mothers more vividly recalled bottle-feeding and formula-feeding in their youth, while African-born mothers recalled more memories of breastfeeding during their childhood in their respective native countries. Many AA mothers specifically recalled bottle-feeding with formula as the "norm" while growing up, and remembered particular brands of formula, bottle shapes and types, and the preparation that was involved with making a bottle. Additionally, AA mothers also mentioned how feeding decisions were intergenerational: formula was fed to them because "whatever grandma did and grandma said went for the next generation in the household."

A few AB mothers highlighted a growing acceptance of formula-feeding among mothers in their respective countries since their childhood. However, in reflecting on their childhood memories, most AB mothers remarked how breastfeeding was widely accepted and proudly practiced in their home countries, drawing contrasts between African and US cultures views on public breastfeeding.

Breast is Best

Virtually all mothers acknowledged and agreed with the benefits of breastfeeding that are promoted by health professionals with the exception of one AA mother who expressed skepticism about the developmental and emotional benefits of breastfeeding. Most mothers cited the health and nutritional benefits for the baby remarking that the breast milk would "be easier on the baby's digestive system" and prevent illness. Others described the economic benefit to their household finances of not having to purchase formula; the emotional connection that they could establish with their child; the weight loss they could experience; the convenience of breastfeeding, particularly having a "supply ready to go" and not preparing bottles; and, the developmental benefits for baby. A few mothers indicated that such benefits motivated them to initiate or continue breastfeeding.

Breastfeeding Ambivalence

What many mothers viewed as downsides or drawbacks to breastfeeding (i.e., fear of pain, time, cost involved) served as a deterrent to breastfeeding at the breast for one mother (as opposed to bottle feeding her infant with expressed breast milk), and factored into ambivalent or negative views for some. In turn, this ambivalence partially contributed to broad acceptance of supplementing with formula among many mothers.

Social Norms

Persuasive, Persistent, and Palpable Encouragement

Virtually all mothers described how they were encouraged to breastfeed or to continue breastfeeding by health providers, family members, and their partners. Mothers described the helpfulness of doctors, nurses, and lactation consultants during the perinatal period; these individuals, provided encouragement and tangible assistance following the birth of their children, specifically helping mothers handle latching, positioning, and engorgement issues.

Table 3 Factors underlying infant feeding behaviors

Constructs/themes	Illustrative quotes
Attitudes	
Early life impressions	I know a lot of mothers in Africa didn't use bottles because formula was very expensive and most of them couldn't afford it so it was mainly breastfeeding. That's what I was raised around.—African-born mother
	My mom formula-fed so I was like obviously it's fine. I turned out okay you know so that's why I was just I just stuck with the formula-feeding.—African American mother
Breast is best	I knew I was gonna nurse, but I think the whole sticking it out- I think if I hadn't done any of the readings and hadn't seen all the benefits, I think I probably would've given up sooner because it is difficult to a certain extent to nurse.—African-born mother
	I heard they said that breastfed babies are smarter… That's probably like you know the myth out there. You know people have myths and things so I don't see the difference between breastfeeding and bottle-feeding because if you take care of your kids, you know do what you're supposed to do, they're going to be smart either way… I felt like I can still get closeness with my baby without [breast] feeding. So it's really just—it's just your opinion on how you feel and how you want to raise your child. Everybody has their own opinion on how to raise their child and mine was just bottle.—African American mother
Breastfeeding ambivalence	If you're not pumping, you're breastfeeding, and when you breastfeed, breast milk digests like [gestures] that. So, you have to do it frequently. So it kind of holds you back. You can't really do much. You can't do nothing. You have to be with your baby 24/7 if you're breastfeeding.—African-born mother
	I already knew that I needed to have something on stand-by and something that he was interested in just in case. I had heard scary stories from other friends and family about if you nurse all the time then the child possibly won't want to eat when they go to daycare because you're not there…—African American mother
Social norms	
Persuasive, persistent, and palpable encouragement	I wanted to wean him by six months, but my mum-in-law would call me and beg me and tell me "Are you still breastfeeding him? Please breastfeed him. It's very good. I'm telling you, you want to help him, he will not fall sick often, he will not do this"…. Honestly, she was the motivating factor. She was. Because I would've stopped. –African-born mother
	My OB/GYN who delivered him was really an advocate for breastfed babies. At first, I just was going to bottle-feed, I never really even thought about doing it [breastfeeding]. This was when I first found out I was pregnant. It was the first thought. It was just like I'll just bottle-feed him, you know, I'm so used to bottle-feeding with the other ones [children] that when I would go to my visits and she would talk and give me pamphlets. You know, me and him [fiancé] talked about it and [we were] like "Why not, it won't hurt anything" so what's best for the baby, and we changed our mindset. So, she was real big. Cause like I said, we were just gonna go with the bottles.—African American mother
Subtle and not-so-subtle dissuasions	I was told—at one position [workplace] I was told, "Oh yeah you can [pump]. You can go sit in your car and do it." Well the adapter for my Medela thing was like another 50 bucks and I had just went back to work so I didn't have it and I mean it was so bad that I would be next to tears. Like many days I was in tears driving home because I think I was like maybe 20 minutes from being engorged.—African American mother
	Society wise—they send mixed messages. Yeah, "breast is best" but on the other hand "here's your coupons." As soon as you look at any pregnancy thing, all of a sudden you get all these Gerber and Enfamil and Similac and Nestle. It cracks me up. I'm like "When did chocolate bars start making formula?" I mean, all these different things, but there's no coupons to help you with a breast pump. You don't see very many people sitting up there, saying "Oh I'll give you like on GroupOn—$30 off to go to a class or to get a lactationist." You don't hear any or even really know anything about the resources…. My frustration is that in the hospital, again, breast is best but here they come with Similac bottles and at one point, they had actually fed him 'cause I was asleep and was still coming off my medication and they had fed him. And that's so frustrating.…
	Here we are, you put it on there "breastfed baby" and yet someone sits there and gives him something else, and that's just so irritating to me because then you're dealing with more than just the whole latching on process.—African American mother

Table 3 continued

Constructs/themes	Illustrative quotes
Perceptions of behavioral control	
Roller coaster confidence	I had a lot of anxiety … like what if they give my baby formula in the hospital? And that kind of scared me and just what if my milk doesn't come in like it's supposed to? That scared me. What if I don't make any milk? That scared me…. Then I felt like my breasts were too small so "how in the world could milk come?" And then when I was pregnant, my breasts didn't get big. I thought your breasts was supposed to fill up with milk before you had the baby… that never happened to me…Then I was anxious because I had the anxiety and I thought "well since I have the anxiety, maybe that's gonna make my milk not come in," so I just had a lot of issues around the milk because I really wanted to breastfeed.—African American mother
Breastfeeding interference	Then of course you have to pump more, but as a school teacher, I can't tell my class to hold on while I go pump. So I was never able to catch right back up when they didn't have a room for me… They [employer] don't have a place for you. I would spend my breaks literally walking around the school looking for an empty classroom or an office where I could privately pump because even if there's an empty classroom, we now have cameras. So that was very frustrating. And people are looking for me and rushing me. And I'm like literally, I just got done pumping but that's because I couldn't find a place to pump. Um, so yeah, about the end of November, I was about done. I could not get it [milk supply] back up to where it needed to be. And it was really, really hard…. And finally right at the end, I was angry. I was actually pretty angry because I knew the reason why it was like that. And I'm like that is so not fair because of this job that's causing me to work these hours or not making things conducive so that I can keep stuff up.—African American mother
Stories of accommodation and resilience	I even found myself teetering back and forth because I knew I was going back to work. So it was like "Well, okay, if I can at least make it this long" and that's how I had to start. Like I had to do mini-goals as opposed to just saying "Oh, I'm going to breastfeed…" Instead of just being like "I'll just exclusively breastfeed," I was like "Okay, I need to get through this first month and this first month of only breastfeeding, like no outs" because again I knew what was in store for me. But just breastfeed only and know that I had to mentally prepare—that I can do it. I can produce enough. And even though you can't see it or measure it, per se, I know that he's okay. So I had to think in my head "Get through the first month." And my other goal was "Okay, do not buy any formulas. Don't have any backups."—African American mother
Internal and external desires	What kinds of things would have helped me overcome? I guess if I would see more posters at your practitioners office saying "Breastfeeding is hard, but you've got to do it." Cause they make it seem like "Oh, just breastfeed, it's good for your baby. Breastfeed." They don't tell you, you're waking up every two hours to breastfeed and especially if you have a child who eats a lot. You know, they're constantly hungry for some reason. I guess, people are not aware that it is difficult. So once they encounter it, they are tempted to quit. I guess it should say "It's hard but hey if you stick to it, the benefits to your baby, it's just like invaluable." So that way, you're like "This is hard but I'm gonna do it." So they should keep it real. That's what they should do.—African-born mother

When mothers experienced difficulty with breastfeeding, particularly with supply and production issues, a few mothers sought assistance from lactation consultants and support groups.

In a few cases, persuasive encouragement from various sources convinced mothers who had not previously intended to breastfeed or pump breast milk to do so. Three mothers (two AA mothers and one AB mother) indicated that they did not initially intend to breastfeed during their pregnancy, but all were persuaded to do so by their health providers and family either prenatally or postpartum.

Compared to AA mothers, AB mothers more frequently recalled breastfeeding encouragement, which motivated them to engage in breastfeeding behavior. In addition, the reported type and source of encouragement from normative referents varied markedly between AA and AB mothers. For instance, most AA mothers shared how health providers served as a large source of encouragement by specifically persuading them to consider breastfeeding or to sustain breastfeeding. In contrast, most AB mothers reported that their family members, partners, friends, employers, and their respective cultures played an important role in encouraging them to breastfeed in general, and more specifically to continue breastfeeding and to breastfeed exclusively. Some explained how it was "expected" that they should breastfeed and how mothers and in-laws practically "begged" or "constantly drove in" the idea that they should breastfeed their babies for at least a year. Four AB mothers particularly attributed their breastfeeding duration to the encouragement or insistence of family members and partners.

Both AA and AB mothers expressed how they received additional persuasive encouragement from friends and family in the form of specific advice to improve their milk supply and persistent encouragement to pump and store breast milk. One AA mother shared her surprise to have received such advice since "not a lot of people are pro-breastfeeding for whatever reason." An AB mother detailed how one friend "helped me in knowing that I could actually pump more breast milk than I thought I could" by advising her to get good sleep and drink liquids. Mothers also reported that the palpable presence (tangible assistance) of family members and partners to assist with childcare and feeding gave them time to rest and pump breast milk for later use.

Subtle and Not-So-Subtle Dissuasions

Several mothers expressed how they received unsupportive comments about breastfeeding, in general, and exclusive breastfeeding, in particular. Mothers reported a variety of dissuasive remarks from some family members, employers, and a few health providers ranging from the subtle to the not-so-subtle. Subtle comments included remarks like "Wow, I can't imagine nursing and not having formula" from the family members of one AA mother. In other cases, family members made dissuasive suggestions that would ultimately alter the course of a mother's breastfeeding intention and goals. For instance, one AA participant intended to breastfeed and tried to breastfeed immediately following her son's cesarean delivery but shared how "nothing was coming out" and "worried" that she was "doing harm to [her] baby." She reported that the nurses tried to reassure that it was normal and that sometimes it takes a while. She further explained how her mother gave her the idea to combine formula-feeding and breastfeeding by asking the nurses if the participant began formula feeding whether the baby would still be able to breastfeed. The nurses indicated that she could do both, which led this participant to transition to exclusive formula feeding. In other instances, a few mothers shared that health providers and family members encouraged them to supplement with formula. One AA mother shared that her pediatrician said "if I need to supplement, do not feel bad."

A few AB mothers noted how there were some family and friends, who directly or indirectly dissuaded them from exclusive breastfeeding while living in the United States. A friend of one mother remarked: "while we are here in America, just do bottle-feeding. That makes it easier for you." Less than subtle remarks were also experienced by mothers ranging from grandmothers who had formula-fed their daughters, who would say "you're fine, you grew up all right… you're crazy for all that stuff [breastfeeding]" to more overt discouragement as was the case for a 21-year-old first-time AB mother who lived with her parents and moved with her family to the United States at the age of 10. This participant described ongoing tension with her mother about breastfeeding and her mother's belief that her milk supply was insufficient.

Other participants described discouragement they received from employers; other mothers expressed bewilderment and frustration at the contradictions experienced in their encounters with maternity care at hospitals and media and society. One AA mother described feeling tempted to bottle-feed because of "mixed messages" and frustration with health providers.

Despite the subtle and overt dissuasions mothers encountered with others, all mothers in this sample actually initiated breastfeeding or expressed breast milk. However, dissuasion often led many mothers to discontinue exclusive breastfeeding.

Perceptions of Behavioral Control

Roller Coaster Confidence

While the majority of mothers—19 out of 20—planned to breastfeed prior to the birth of their infant, most described fluctuating levels of confidence throughout the perinatal and postpartum periods. For example, both groups of mothers recalled feeling initially confident in their ability to breastfeed their babies prior to their infant's delivery. However, all AA mothers and most AB mothers expressed some uncertainty in their ability to initiate breastfeeding once their baby was born or continue breastfeeding due to fears and concerns surrounding lactation onset or supply and challenges with their health, lactation, and work. As one African American mother expressed "I knew I could start—just didn't know how long I could keep with it."

Breastfeeding Interference

All mothers encountered a wide range of barriers and challenges related to their personal health, lactation, lifestyle, and/or work after attempting to initiate and sustain breastfeeding. However, AA mothers more frequently recalled instances of breastfeeding barriers and challenges that contributed to their infant feeding experience. At the time of the interviews, ten mothers (7 AA and 3 AB) had discontinued breastfeeding altogether. Six of the seven AA mothers who had weaned their infant by the time of the interview attributed cessation to health, lactation, or work challenges. One mother had developed postpartum high blood pressure and had begun medication that prevented her from breastfeeding her infant. Three mothers expressed that they were not producing enough milk or complained of nipple pain and soreness, which led them to quit. Finally,

two mothers shared how their milk supply decreased in response to work demands and rigid work schedules resulting from returning to work.

While both groups of mothers expressed concerns about health, lactation, and work challenges that interrupted their breastfeeding experiences, only AB mothers reported that the lack of a support system to help with childcare made it more difficult for them to effectively breastfeed, and exclusively breastfeed, in particular. Among the four AB mothers who shared this sentiment, most of them indicated that this lack of support made it difficult to combine exclusive breastfeeding with necessary self-care, such as a proper diet and adequate rest.

Half of all mothers cited work challenges as an issue that might or actually did interfere with their breastfeeding experience. As one AA mother mentioned, "An employer cannot tell you that you cannot pump at work if you're a working mom, but they surely can make it very hard" because "they don't have to convenience you at all…." Some mothers indicated that this inconvenience was due to the lack of places for them to pump at their respective workplaces. Others cited demanding schedules and long work days prevented them from pumping as often as they would have liked.

Stories of Accommodation and Resilience

Several mothers described resources that facilitated their breastfeeding experience and strategies that they utilized to counter their fluctuating confidence levels and breastfeeding challenges. For instance, many cited maternity leave or staying at home as facilitating factors, particularly sleeping positions they could combine with nighttime feeding, and having an abundant milk supply. Some mothers detailed the accommodations their workplaces provided, such as lactation or nursing rooms for working mothers along with a place to store pumped milk. Finally, others described strategies that they employed internally to mitigate challenges and uncertainty surrounding breastfeeding. A few mothers discussed how anxiety interfered with their milk supply and how they learned not to worry. Similarly, a few mothers described goal-setting as a critical strategy in sustaining breastfeeding.

Internal and External Desires

Reflecting on their breastfeeding experiences, many mothers wanted more self-determination and knowledge to overcome the difficulties they encountered. For example, mothers who cited lactation challenges as a barrier desired more information about the obstacles and challenges that one could encounter when breastfeeding.

Other mothers desired more support from their employers, family, health providers, and society at large with overcoming their breastfeeding challenges. Some mothers wanted more accommodating workplaces with spaces set aside for the expression and storage of breast milk or on-site childcare. Some mothers desired the physical help of family members to assist with childcare. A few mothers described how they wanted lactation assistance to be more widely available and affordable, particularly after their discharge from the hospital; a few wanted a more realistic portrayal of breastfeeding in their encounters with health providers, while others desired more societal acceptance of public breastfeeding.

Discussion

In this sample of middle-class AA and AB mothers, nine themes related to TPB model constructs were identified that characterized their infant feeding experiences. All mothers had breastfed or fed expressed breast milk to their infants even though many described hearing about the difficulties of combining breastfeeding with work and lifestyle and also described the absence of witnessing breastfeeding during their early years. However, virtually all mothers acknowledged the health benefits derived from breastfeeding as key factors underlying their decisions to at least attempt to breastfeed or express breast milk to their infant. Notably, breastfeeding support was not uniformly provided by any particular group of normative referents whether for breastfeeding initiation, continuation, or exclusivity. While both groups of mothers reported receiving persistent and palpable encouragement (tangible assistance) from family, friends, and health providers to initiate breastfeeding with specific advice and strategies to help them continue breastfeeding, many mothers encountered unsupportive breastfeeding comments from family, health providers and employers against exclusive breastfeeding.

In line with previous research conducted among diverse SES women and providers [17, 24, 39], health providers were particularly influential in shaping mothers' breastfeeding practices, providing encouragement and tangible assistance. For instance, some mothers who had not previously intended to breastfeed or express breast milk were persuaded to do so by their health providers. This finding contrasts with that of research conducted among lower SES women of color who have reported that health providers, specifically obstetricians-gynecologists and pediatricians, provided little anticipatory guidance, breastfeeding promotion, or hands-on demonstration prenatally or in the postpartum period [8, 22]. In the current study, health

providers' opinions also informed the decisions of some participants to begin formula supplementation.

Many mothers also described facilitators that helped them to sustain breastfeeding, such as proper self-care (e.g., rest and proper diet, not worrying), goal-setting, and workplace accommodations (e.g., maternity leave, flexible time, and space and time to express breast milk). These findings show that middle-class AA and AB mothers may seek out and utilize diverse resources and strategies to counter unsupportive norms and environments they may encounter while breastfeeding. This particular finding is consistent with those of other qualitative studies of diverse SES and low-income AA mothers, which have identified self-determination and intrinsic motivation as factors underlying decisions to breastfeed and which reported how mothers seek out the education and support they need to ensure their success [8, 38].

African American and African-born mothers differed along a few areas of the TPB constructs. For instance, AA mothers more vividly recalled bottle-feeding and formula-feeding in their youth, while AB mothers recalled more memories of breastfeeding during their childhood in their respective native countries. This is consistent with other research which has shown that contemporary AA women of reproductive age are likely to have been raised without witnessing an AA mother breastfeeding in their family or community [9]. Also, the type and source of encouragement from normative referents was markedly different between both groups of mothers in the qualitative study. While most AA mothers indicated that health providers served as a considerable source of encouragement for breastfeeding initiation and continuation, most AB mothers reported that family, friends, partners, employers (particularly those in their origin countries), and their respective cultures played a large role in encouraging them to breastfeed, exclusively breastfeed, and continue breastfeeding. Interestingly, however, only AB mothers expressed concerns about the difficulty they encountered with effectively and exclusively breastfeeding due to the lack of family support at home to help them with child care and self-care. This particular finding suggests that migration may disrupt social support networks that support optimal breastfeeding and that unsupportive breastfeeding norms encountered in US culture may hinder immigrant mothers' efforts to sustain breastfeeding or exclusively breastfeed. This perspective—that migration may have a negative effect on social support and health behaviors—has been advanced by many researchers [18, 19, 21, 26]. A meta-ethnographic study also found that female relatives played a dominant role in the infant feeding decisions and practices of other ethnic migrant women to new countries, where the absence of female relatives negatively affected infant feeding practices [36].

Another important and related difference that emerged was that more AA mothers than AB mothers had discontinued breastfeeding by the time of the interview even though all mothers had initiated breastfeeding and mean infant ages did not vary between the two groups. Most of the AA mothers attributed their discontinuation to health, lactation, or workplace challenges that contributed to their behavioral control perceptions. These factors closely parallel those cited as reasons that lower SES AA mothers began formula supplementation in other studies [8]. Half of all mothers in this qualitative study cited work challenges as an issue that might or actually did interfere with their breastfeeding experience. While it is important for mothers to obtain clinical management and support to navigate lactation challenges and breastfeeding difficulties, the findings from these maternal narratives suggest that breastfeeding disparities may be rooted in structural conditions, pointing to a clear need for employers to provide breastfeeding-friendly workplaces. Until 2010, many states, including Ohio, did not have legislation requiring employers to provide time and space for mothers to express breast milk [6]. State laws that support breastfeeding in the workplace have been associated with increases in breastfeeding initiation and duration with most gains observed among minority women and women of lower education attainment [15].The Patient Protection and Affordable Care Act of 2010 includes protections for breastfeeding: break time and non-bathroom space to express breast milk. However, women may still encounter challenges with combining work and breastfeeding, particularly in the form of unsupportive colleagues and the lack of a storage area for expressed breast milk. As a result, mothers may face diminished economic opportunities and prospects if they decide to breastfeed for longer durations [34]. Legislation and policies that are fully supportive of breastfeeding should include provisions for paid parental leave, flexible work hours, and onsite child care [28, 29].

There were several limitations to the current study. The qualitative sample is not representative of all middle-class AA or AB mothers residing in Ohio. For instance, some college-educated participants in this study reported WIC eligibility, and thus may be a more economically transient group than other more socially advantaged middle-class AA or AB women. All participants were African American or African-born and had breastfed or expressed breast milk to their infants; therefore, it was not possible to understand the experiences of those who chose to exclusively bottle-feed their infants or the experiences of Afro-Caribbean born mothers living in Ohio. Although it was mentioned by many respondents, participants were not asked specific questions about their experience with breastfeeding exclusivity (including complementary feeding) because breastfeeding initiation and duration were the outcomes of

particular interest in this investigation. Additionally, all of the AB mothers migrated from West African countries. Thus, mothers from southern and eastern countries in Africa were not interviewed. Detailed information about participants' marital status, size and quality of social support network, living arrangements, employment status (i.e., full versus part time, type of employment), and migration history and circumstances (i.e., voluntary versus involuntary) was not collected during the interviews or through the background questionnaire. Therefore it was not possible to isolate themes related to these factors in the analysis. We recognize these limitations as areas of interest warranting future study.

The current study adds to emergent literature on racial and intra-racial differences in breastfeeding disparities by providing insight into the attitudes, norms, and behavioral control perceptions that promote and constrain breastfeeding among middle-class, AA mothers and African immigrant mothers, a group that has been largely overlooked in the context of the effects of cultural background on health behaviors. Findings from the current qualitative study reveal that both AA and AB mothers may be susceptible to unsupportive breastfeeding norms in the US. Likewise, this study also highlights the need for breastfeeding intervention in the workplace and health care settings as identified in *Healthy People 2020*. The findings specifically add support to existing calls for all stakeholders, including employers and health providers, to support and promote breastfeeding by creating enabling conditions in workplaces for lactating employees and for health care providers to be trained on the necessary skills to effectively engage with mothers to promote breastfeeding success throughout the perinatal period.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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