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Association of Family and Health Care Provider Opinion on Infant Feeding with Mother's Breastfeeding Decision

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Abstract

In the United States, about 25% of women choose not to initiate breastfeeding, yet little is known about how opinions of individuals in a woman's support network influence her decision to breastfeed. In the 2005–2007 Infant Feeding Practices Study II, women completed questionnaires from the last trimester of pregnancy until 12 months postpartum. Mothers indicated prenatally their family members' and health care providers' opinion on how newborns should be fed: breastfed only, formula fed only, breast and formula fed, or no opinion/don't know. Breastfeeding initiation was determined by asking mothers around 4 weeks postpartum (n=2,041) whether they ever breastfed. Logistic regression was used to examine the association between mothers' perception of family members' and health care providers' opinion on how to feed the infant and the initiation of breastfeeding, adjusting for sociodemographic characteristics. Nearly 14% of mothers surveyed did not initiate breastfeeding. Mothers who believed their family members or health care providers preferred breastfeeding only were least likely not to initiate breastfeeding. Never breastfeeding was significantly associated with the following perceptions: the infant's father (odds ratio [OR]=110.4; 95% CI 52.0 to 234.4) or maternal grandmother (OR=15.9; 95% CI 7.0 to 36.0) preferred only formula feeding; the infant's father (OR=3.2; 95% CI 1.7 to 5.9) or

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STATEMENT OF POTENTIAL CONFLICT OF INTEREST

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doctor (OR=2.7; 95% CI 1.2 to 6.2) preferred both breast and formula feeding; and the infant's father (OR=7.6; 95% CI 4.5 to 12.7), maternal grandmother (OR=5.4; 95% CI 2.6 to 11.0), or doctor (OR=1.9; 95% CI 1.0 to 3.7) had no opinion/didn't know their feeding preference. The prenatal opinions of family members and health care providers play an important role in a woman's breastfeeding decisions after the infant's birth.

Keywords

Breastfeeding; Initiation; Perception

Breastfeeding is recommended as the most beneficial form of infant nutrition for at least the first year of life. The American Academy of Pediatrics recommends breastfeeding for 12 months or as mutually desired by the mother and infant.¹ Research provides strong evidence that infants who are not breastfed are at increased risk of infections, autoimmune disease, sudden infant death syndrome, type 2 diabetes, and obesity.² Despite these health benefits, approximately one in four women in the United States chooses not to initiate breastfeeding.³ Previous research focused primarily on identifying demographic factors associated with never breastfeeding. Women who are young, African American, primiparous, of low socioeconomic status, or low education are less likely to initiate breastfeeding.³⁻⁶ Other potential factors associated with women's decisions about breastfeeding might arise from interactions with individuals within their support networks. Previous studies have identified the infant's fathers' and health professionals' opinions as significant determinants of women's breastfeeding outcomes⁷⁻¹²; however, the opinions of multiple family members and health care providers before the birth have not been considered jointly. The purpose of this study was to determine the percentage of mothers who did not breastfeed by family and health care provider opinions and to determine whether mothers' prenatal perception of these opinions was associated with their decision not to initiate breastfeeding.

METHODS

We analyzed data from the Infant Feeding Practices Study II (IFPS II), a longitudinal survey of mothers of healthy infants that was conducted by the US Food and Drug Administration and Centers for Disease Control and Prevention from 2005 to 2007. Women were recruited during their third trimester of pregnancy through a consumer-opinion mail panel of approximately 500,000 households. Eligibility criteria included that mothers be at least 18 years of age and that infants be born after at least 35 weeks' gestation, have no medical conditions that might affect feeding, and weigh at least 5 lb at birth. Participants were followed from pregnancy through the entire first year after birth with 11 mailings, including one prenatal and 10 nearly monthly postpartum questionnaires. A total of 3,033 pregnant women responded to both the prenatal and neonatal questionnaires. Of these women, 992 (33%) were excluded due to the following: they did not answer or gave a contradictory response on the main predictor variables (n=72); they did not have anyone to report a response for on the main predictor variables (n=688); they had missing data on covariates (n=232). The study sample included 2,041 mothers with complete data on all variables from the prenatal and neonatal period. All data-collection procedures were approved by the US

Food and Drug Administration Institutional Review Board. Women were sent a brochure with information on informed consent with the initial mailing and if they returned a questionnaire, they were assumed to have agreed to the study conditions. Signatures were not required because study participants would not be subject to intervention or experimental conditions. A more detailed explanation of the IFPS II methodology and sample were published previously.¹³

Many of the IFPS II questions were derived from the original study, IFPS I (1992–1993), and other established questionnaires. Validated questions were used if available. The main predictor variables for the current study were mothers' prenatal report of the opinions of family members and health care providers on how her infant should be fed. These questions were derived from the original IFPS survey instrument, which asked mothers a single question about whether the baby's father thinks the baby should be breastfed, formula fed, or both breast and formula fed. In order to understand how the opinions of other individuals influenced mothers' decision to breastfeed, researchers who developed the IFPS II expanded this question to include other family members and clinicians. The new question was tested in cognitive interviews and then in a pilot test that included a debriefing questionnaire asking the respondent to list any questions they had difficulty answering or aspects of the question that were confusing. Results from the cognitive testing and pilot were used to revise the survey question for the final survey administration. During the third trimester of pregnancy, mothers were asked, "How do the following people think your baby should be fed?" Mothers chose the statement that best described the opinion of the mother's doctor and the infant's doctor, father, and maternal and paternal grandmothers. Response options included "only breastfeed," "only formula feed," "both breast and formula feed," "no opinion/don't know," or "no one in this category" (excluded from this analysis).

Covariates controlled for in this study include maternal age (18 to 24, 25 to 29, 30 to 34, 35+ years), parity (multiparous, primiparous), marital status (married or not married), education (high school or less, some college, college graduate), household poverty income ratio (<185%, 185% to <350%, and 350%), postpartum participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (no or yes), and race/ethnicity (white, black, Hispanic, other). We did not include maternal prenatal intention to breastfeed in the main study model because it was considered a mediating factor in the causal pathway of the association between others' breastfeeding opinion and mother's initiation status during the conceptualization of this analysis. However, a separate model tested the influence of including maternal prenatal intention. We conducted multiple-variable logistic regression analysis to examine the association of family members' and health care providers' opinions on infant feeding with mother's breastfeeding initiation status after controlling for sociodemographic covariates mentioned here. All family and health care provider's opinions were entered simultaneously into the model and analyses were conducted using SAS 9.2 (2008, SAS Institute).

RESULTS AND DISCUSSION

Overall, nearly 14% of mothers in this study did not initiate breastfeeding. The majority of mothers who never breastfed were 30 to 34 years old, white, unmarried, had some college

education, had a household poverty income ratio <185%, had at least one child, and participated in the Special Supplemental Nutrition Program for Women, Infants, and Children during the postpartum period (Table 1). Fewer than 5% of mothers did not initiate breastfeeding when they perceived that either a family member or health care provider thought that the infant should only be breastfed (Table 2). A slightly larger percentage of mothers did not initiate breastfeeding when they perceived that family or provider preferred both breast and formula feeding. However, about 40% to nearly 90% of mothers did not initiate breastfeeding when they perceived that either family or provider preferred only formula. In addition, when mothers perceived that either a family member or provider did not have an opinion or the women did not know their opinion about feeding, up to 27% did not initiate breastfeeding. Multivariable analyses (Table 2) indicated that never breastfeeding was associated with maternal perception that the infant's father or maternal grandmother preferred only formula feeding. We did not observe a significant association between mother's or infant's provider preference for formula only and never breastfeeding, which might be due, in part, to the small number of physicians recommending formula only. Also, we did not find a significant association between the paternal grandmother's preference for formula and not breastfeeding. Mothers' perception that the infant's father or doctor preferred both breast and formula feeding was associated with never breastfeeding. Interestingly, mothers who perceived that family and clinicians had no opinion on how to feed their baby or did not know the opinions of these individuals had increased odds of not initiating breastfeeding. In addition, as predicted in our theoretical model, a separate analysis on testing the mediator effect of breastfeeding intention demonstrated that including mother's prenatal intention to initiate breastfeeding in the model greatly attenuated the effect sizes of the association between family and clinicians' opinion and breastfeeding initiation status, and results for clinicians' opinion were no longer significant (data not shown here).

Infant feeding decisions are complex and are influenced by many factors, including the opinions and support of individuals in a woman's social network. In this study, we found that mothers who believe that their family or provider prefers breastfeeding only are the least likely not to initiate breastfeeding. Research findings consistently show that mothers who choose to breastfeed report greater support in their feeding decision from their partners and family members than mothers who do not breastfeed.^{7,9,10,14-16} Other studies have found that expectant fathers who report plans for exclusive breastfeeding at birth are more likely to report knowledge of the benefits of breastfeeding, want mothers to breastfeed, and have positive attitudes toward women who breastfeed compared with fathers who report plans for formula feeding.⁹ Grandmothers, especially maternal grandmothers, are also primary sources of influence in women's breastfeeding decisions. Previous studies suggest that women are more likely to successfully establish breastfeeding when grandmothers acknowledge that breastfeeding is important, affirm women's decision to breastfeed, and provide encouragement in overcoming breastfeeding difficulties.^{7,14} Although many women make their decisions about breastfeeding before conception or during the first trimester of pregnancy, if they receive encouragement to breastfeed, information on the benefits of breastfeeding, or how to overcome problems with breastfeeding from a physician or nurse during the prenatal period, expectant mothers are more likely to change their infant feeding plan from formula feeding to breastfeeding.^{17,18}

The findings of the current study are supported by previous research, which indicates that both negative and neutral attitudes toward breastfeeding by members in a mother's social network can be a barrier for breastfeeding initiation.^{4,8,10} Our findings suggest that when mothers perceived no opinion or did not know the feeding preferences of the infant's father, maternal grandmother, or doctor, it might be as influential in their decision not to breastfeed as believing that these individuals have a preference for some formula use. In addition, we uniquely considered the joint effect of family members and health care providers to determine the independent association of each with breastfeeding initiation. Other research indicates that fathers who prefer formula feeding or who are indifferent about feeding method are less likely to have a spouse that breastfeeds and are more likely to believe that breastfeeding is unnatural, interferes with a woman's attractiveness or sex, or has a damaging effect on breast appearance, than fathers who prefer breastfeeding.^{9,10,16,19} It appears important that fathers receive prenatal breastfeeding education to help debunk myths related to breastfeeding and learn the benefits of breastfeeding and how to support mothers. In a randomized controlled trial, expectant fathers who received breastfeeding education during the prenatal period were more likely to have a partner who initiated breastfeeding than fathers who received education on infant care only.²⁰ Breastfeeding education might also need to include grandmothers, particularly those who have not breastfed. Grandmothers who are not knowledgeable about current information on breastfeeding can provide advice that discourages breastfeeding.^{21,22} After an intervention for fathers and grandmothers that discussed the benefits and mechanics of breastfeeding, as well as the need for emotional and practical support, more mothers in the intervention than control group continued breastfeeding at 8 weeks.²³

Clinicians play an important role in mothers' breastfeeding decisions. Previous studies indicate that many clinicians believe that breastfeeding and formula feeding are equally acceptable methods of infant feeding, and recommend not breastfeeding when mothers have medical conditions that do not preclude breastfeeding.^{24,25} Inadequate clinician education and training on how to help mothers overcome breastfeeding problems has been identified as a major factor that undermines breastfeeding.²⁵⁻²⁷ In our study, the opinion of the infant's doctor (breastfeeding and formula, no opinion or don't know), was associated with not initiating breastfeeding. However, all providers who meet with pregnant women, including obstetricians and family physicians, have the opportunity to promote breastfeeding and support women in their decision to breastfeed by imparting messages and guidance that are accurate and consistent with American Academy of Pediatrics guidelines.^{1,11,27}

This study has several limitations and strengths. First, IFPS II is not a nationally representative dataset and findings might not be generalizable; however, it would be very costly to randomly select a large sample of pregnant women and follow them throughout the first year postpartum. We suspect that because mothers in IFPS II are more likely to be employed and well educated,¹³ our estimate of mothers who never breastfed is somewhat lower than reported previously. Second, although mothers were able to rate the opinion of the infant's father, maternal and paternal grandmother, and doctors, this was not an exhaustive list of individuals who might be part of a woman's breastfeeding support network. Third, in this study, the opinion of health care providers was measured through the perceptions of their patients and we have no information about infant feeding advice and

education actually provided by clinicians, a potential confounder. However, the findings do provide insight on mothers' perception of providers' feeding opinions. No causal inference can be made from this study, as it is possible that women who want to breastfeed are more likely to have a larger network of family and friends who have already breastfed or are more likely to seek the advice and counsel of professionals who can provide support. Finally, this analysis excluded participants with missing data, which might have introduced bias. Despite the limitations of this study, IFPS II is the largest longitudinal study on infant feeding practices in the United States and, although not exhaustive, mothers were able to provide information on the breastfeeding preferences of a wide-ranging group of individuals in their support network.

CONCLUSIONS

Our analysis suggests that the opinions of family members and health care providers play an important role in a woman's decision to breastfeed. During the prenatal period, health care providers have an opportunity to communicate the importance of breastfeeding. Prenatal education, including the father and maternal grandmother, and professional training for health care providers are needed to improve breastfeeding initiation rates.

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Table 1

Sample characteristics by breastfeeding initiation status, Infant Feeding Practices Study II, 2005–2007

Characteristics	Breastfeeding Initiation		
	Overall (n=2,041)	Yes (n=1,762)	No (n=279)
	←— n (%) —→		
Age (y) *			
18–24	361 (17.7)	312 (17.7)	49 (17.6)
25–29	713 (34.9)	639 (36.3)	74 (26.5)
30–34	631 (30.9)	526 (29.9)	105 (37.6)
35+	336 (16.5)	285 (16.2)	51 (18.3)
Parity *			
Multiparous	1,587 (77.8)	1,353 (76.8)	234 (83.9)
Primiparous	454 (22.2)	409 (23.2)	45 (16.1)
Marital status *			
Married	1,716 (84.1)	1,494 (84.8)	222 (79.6)
Not married	325 (15.9)	268 (15.2)	57 (20.4)
Education *			
High school or less	378 (18.5)	294 (16.7)	84 (30.1)
Some college	813 (39.8)	700 (39.7)	113 (40.5)
College graduate	850 (41.7)	768 (43.6)	82 (29.4)
Poverty income ratio^{a,*}			
<185%	793 (38.9)	664 (37.7)	129 (46.2)
185% to <350%	786 (38.5)	692 (39.3)	94 (33.7)
350%	462 (22.6)	406 (23.0)	56 (20.1)
WIC^b participant *			
No	1,340 (65.7)	1,189 (67.5)	151 (54.1)
Yes	701 (34.4)	573 (32.5)	128 (45.9)
Race/ethnicity			
White	1,761 (86.3)	1,508 (85.6)	253 (90.7)
Black	67 (3.3)	58 (3.3)	9 (3.2)
Hispanic	120 (5.9)	109 (6.2)	11 (3.9)
Other	93 (4.6)	87 (4.9)	6 (2.2)

^aRatio of self-reported family income to the federal poverty threshold value depending on the number of people in the household.

^bWIC=Special Supplemental Nutrition Program for Women, Infants, and Children.

* $P < 0.05$ for association between characteristic and level of initiation.

Table 2

Percentages and odds ratios of not initiating breastfeeding by maternal perception of family members' and providers' opinion about infant feeding

	n	% Not initiating	Adjusted odds ratio ^a	95% CI
	2,041			
Feeding preference by family members				
Infant's father				
Breastfeeding only	1,141	1.9	Reference	
Formula only	135	82.2	110.4	52.0–234.4
Breastfeeding+formula	350	10.0	3.2	1.7–5.9
No opinion or don't know	415	26.8	7.6	4.5–12.7
Maternal grandmother				
Breastfeeding only	814	1.6	Reference	
Formula only	161	55.3	15.9	7.0–36.0
Breastfeeding+formula	317	8.2	2.0	0.9–4.5
No opinion or don't know	749	20.2	5.4	2.6–11.0
Paternal grandmother				
Breastfeeding only	595	3.4	Reference	
Formula only	119	39.5	0.5	0.2–1.4
Breastfeeding+formula	261	8.4	1.4	0.6–3.3
No opinion or don't know	1,066	17.8	1.4	0.8–2.7
Feeding preference by providers				
Infant's doctor				
Breastfeeding only	919	4.8	Reference	
Formula only	25	88.0	2.0	0.2–18.8
Breastfeeding+formula	247	17.8	2.7	1.2–6.2
No opinion or don't know	850	19.9	1.9	1.0–3.7
Mother's doctor				
Breastfeeding only	882	5.0	Reference	
Formula only	29	75.9	5.4	0.8–38.3
Breastfeeding+formula	242	17.8	1.3	0.5–3.0
No opinion or don't know	888	19.1	1.3	0.7–2.6

^a All sociodemographic covariates, the family, and health care provider's opinions were entered simultaneously into the model. Covariates included maternal age; parity; marital status; education; household poverty level; participation in the Special Supplemental Nutrition Program for Women, Infants, and Children; and ethnicity.