

# Reasons for Earlier Than Desired Cessation of Breastfeeding



**WHAT'S KNOWN ON THIS SUBJECT:** Reasons mothers cite for breastfeeding cessation vary across an infant's first year of life; however, once women stop breastfeeding, little is known about whether they breastfed as long as they desired or reasons why they did not meet their desired duration.



**WHAT THIS STUDY ADDS:** About 60% of mothers do not meet their desired breastfeeding duration. Mothers who do not breastfeed as long as they desire primarily cite concerns about maternal or child health and processes associated with breastfeeding as their reason to stop breastfeeding.

## abstract

**OBJECTIVE:** To describe the prevalence and factors associated with not meeting desired breastfeeding duration.

**METHODS:** Data were analyzed from 1177 mothers aged  $\geq 18$  years who responded to monthly surveys from pregnancy until their child was 1 year old. When breastfeeding stopped, mothers were asked whether they breastfed as long as they wanted (yes or no) and to rate the importance of 32 reasons for stopping on a 4-point Likert scale. Multiple logistic regressions were used to examine the association between the importance of each reason and the likelihood of mothers not meeting their desired breastfeeding duration.

**RESULTS:** Approximately 60% of mothers who stopped breastfeeding did so earlier than desired. Early termination was positively associated with mothers' concerns regarding: (1) difficulties with lactation; (2) infant nutrition and weight; (3) illness or need to take medicine; and (4) the effort associated with pumping milk.

**CONCLUSIONS:** Our findings indicate that the major reasons why mothers stop breastfeeding before they desire include concerns about maternal or child health (infant nutrition, maternal illness or the need for medicine, and infant illness) and processes associated with breastfeeding (lactation and milk-pumping problems). Continued professional support may be necessary to address these challenges and help mothers meet their desired breastfeeding duration. *Pediatrics* 2013;131:e726–e732

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### KEY WORDS

breastfeeding, duration, intention, lactation

### ABBREVIATIONS

aOR—adjusted odds ratio

IFPSII—Infant Feeding Practices Study II

WIC—Special Supplemental Nutrition Program for Women, Infants and Children

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A mother's stated intention to breastfeed is 1 of the strongest predictors of breastfeeding initiation.<sup>1,2</sup> Breastfeeding as long as one desires, however, is a dynamic process that is affected by socioenvironmental factors and breastfeeding experiences mothers have once breastfeeding has begun.<sup>1,3</sup> According to the Listening to Mothers Survey, 80% of pregnant women state that they intend to breastfeed, which nearly matches the high breastfeeding initiation rate in the United States (75% of children were ever breastfed in 2008).<sup>4,5</sup> However, in a previous study, among mothers who initiated breastfeeding and prenatally intended to continue breastfeeding for at least 2 months, 14% stopped breastfeeding by 6 weeks, suggesting that difficulties encountered after birth may not allow mothers to meet their desired goals for breastfeeding.<sup>6</sup> Once a mother stops breastfeeding, whether she perceives that she has met her desired duration may be determined by the kinds of problems she experienced while breastfeeding.

Previous studies have documented why mothers stop breastfeeding and how these reasons vary by infant age.<sup>2,7-9</sup> However, reasons that mothers do not meet their desired breastfeeding duration have not been identified in the literature. The concerns, challenges, and demands of breastfeeding that were not anticipated during the prenatal period may affect a mother's decision to continue breastfeeding.<sup>10,11</sup> These may include factors related to a mother's need for autonomy or concerns that require the support of clinicians, including lactation problems or concerns regarding infant growth and development.<sup>8,12</sup> It is important to understand mothers' reasons for stopping breastfeeding that are associated with not meeting their desired breastfeeding goals so that interventions can be designed to reduce discrepancies between

intended and actual breastfeeding behaviors.

Our objectives were to estimate the percentage of mothers who did not breastfeed as long as they wanted (referred henceforth as "desired breastfeeding duration") and to examine the reasons for stopping breastfeeding associated with perceptions of whether the mother met her desired breastfeeding duration. We hypothesized that the reasons for stopping breastfeeding would differ between mothers who met and did not meet their desired breastfeeding duration. Moreover, reasons among mothers who do not meet their desired breastfeeding duration might be modifiable risks that warrant the focus of public health interventionists and clinicians.

## METHODS

### Participants and Procedure

The Infant Feeding Practices Study II (IFPSII) is a longitudinal study of mothers of infants that was conducted from 2005 to 2007 by the US Food and Drug Administration and the Centers for Disease Control and Prevention. Women were recruited in their third trimester of pregnancy from a consumer opinion panel of ~500 000 households throughout the United States. Eligibility criteria included that the mother be at least 18 years old, the mother and infant be without medical conditions that would affect feeding, and the infant be born after at least 35 weeks of gestation and weigh at least 5 pounds. Each participant was mailed 1 prenatal and 10 postnatal questionnaires at nearly monthly intervals. Approximately 4900 pregnant women completed the prenatal questionnaire. Of those, 77% ( $n = 3033$ ) responded to the neonatal questionnaire. Response rates for each postnatal survey ranged from 63% ( $n = 1808$ ) to 83% ( $n = 2552$ ). A more detailed explanation of the IFPSII sample and methodology has been published previously.<sup>13</sup>

On each postnatal survey (sent to participants when infants were ~2, 3, 4, 5, 6, 7, 9, 10.5, and 12 months old), mothers were asked whether they had completely stopped breastfeeding or pumping milk. If they indicated "yes," mothers were then asked, "Did you breastfeed as long as you wanted to (yes or no)?" Thus, the dependent variable in this study is a measure of maternal perception of meeting her desired breastfeeding duration after cessation. Mothers who indicated that they had stopped breastfeeding were asked to rate the importance of each of 32 reasons for stopping breastfeeding on a 4-point Likert scale. The reasons for stopping breastfeeding, the main predictor variables, were dichotomized as either important (3 or 4 on the Likert scale) or not important (1 or 2 on the Likert scale). In a previous study of IFPSII, Li et al<sup>8</sup> used principal components analysis to identify 7 factors from the 32 reasons mothers rated in their decision to stop breastfeeding: lactation problems; lifestyle conflicts; pumping constraints; medical, nutritional, or psychosocial concerns; and self-weaning. As a continuation of this previous work, we used the same 7 factors as a way of referencing a category under which an item could be found.

### Statistical Analysis

First, by using  $\chi^2$  tests, we examined sociodemographic differences between mothers who met and did not meet their desired duration. Next, we compared differences in the percentage of mothers citing each of the 32 reasons as important in the decision to stop breastfeeding by whether the mother met her desired duration. Finally, we used multiple logistic regression to examine the association between the importance of each reason and the likelihood of mothers not meeting their desired breastfeeding

duration. All final estimates were adjusted for maternal age, parity, race, marital status, maternal education, postpartum participation in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), household poverty level (ie, the ratio of household income to the poverty threshold by household size expressed as a percentage), and prenatal months of breastfeeding intention. Mothers estimated number of months of breastfeeding they planned to breastfeed when asked “How old do you think your baby will be when you completely stop breastfeeding?” at the prenatal survey.

All analyses were conducted by using SAS version 9.2 (SAS Institute, Inc, Cary, NC).

## RESULTS

Of the 2572 mothers who initiated breastfeeding, 1457 completely stopped breastfeeding and pumping milk during the study period. We excluded mothers who did not answer questions about meeting their desired breastfeeding duration ( $n = 26$ ), why they stopped breastfeeding ( $n = 12$ ), and those who had missing data on the covariates ( $n = 242$ ), which yielded an analytic sample of 1177. Among these mothers, 60% ( $n = 706$ ) said that they did not breastfeed as long as they desired, and 40% ( $n = 471$ ) met their desired duration. There were no significant differences between mothers who did and those who did not meet their desired duration with respect to the average number of months they reported prenatally as their intended breastfeeding duration ( $P < .05$ ). However, the mean breastfeeding duration was 7.8 months among mothers who postnatally reported that they met their desired duration compared with only 3.8 months among mothers who postnatally reported that they did not meet their desired breastfeeding duration.

Compared with mothers who breastfed as long as they desired, mothers who did not meet their desired duration were more likely to be unmarried, multiparous, less educated, and WIC participants (Table 1). On average, mothers who did not breastfeed as long as they desired cited a greater number of reasons as important in their decision to stop breastfeeding compared with mothers who met their desired duration (5.0 vs 4.4;  $P < .05$ ). Mothers who did not meet their desired duration rated concerns about lactation, infant nutrition and weight, illness or the need to take medicine, and milk pumping at higher rates than mothers who met their desired duration in their decision to stop breastfeeding. In contrast, mothers who met

their desired breastfeeding duration rated concerns about managing psychosocial problems (ie, leaving infant for several hours), lifestyle conflicts, and infant self-weaning at higher rates (Table 2).

Figure 1 shows the adjusted odds ratios (aOR) of reasons for stopping breastfeeding that were significantly associated with not meeting desired breastfeeding duration, regardless of the direction of the association. Of the 32 reasons mothers rated, 13 were significantly associated with increased odds of not meeting desired duration (aOR range: 1.28–4.42) and were related to lactation, nutrition, medicine/illness, and milk-pumping concerns. In contrast, 6 reasons were significantly associated with decreased odds of not

**TABLE 1** Sociodemographic Characteristics of Mothers Who Met and Did Not Meet Their Intention for Breastfeeding Duration

Characteristic	Overall ( <i>N</i> = 1177)	Did Not Meet Intentions ( <i>n</i> = 706)	Met Intentions ( <i>n</i> = 471)	<i>P</i>
Age, y				.18
18–24	21.6	23.4	18.9	
25–29	34.0	34.4	33.3	
30–34	28.9	27.8	30.6	
≥35	15.6	14.5	17.2	
Marital status				.0006
Married	79.4	76.1	84.3	
Not married	20.7	23.9	15.7	
Parity				.001
Primiparous	32.4	64.0	73.0	
Multiparous	67.6	36.0	27.0	
Education				<.0001
High school or less	18.2	19.8	15.7	
Some college	40.7	44.3	35.2	
College graduate	41.1	35.8	49.0	
Income (% of poverty)				.14
<185	38.2	39.0	37.2	
185–<350	34.1	35.4	32.1	
≥350	27.7	25.6	30.8	
WIC participant				.003
No	63.0	59.5	68.2	
Yes	37.0	40.5	31.9	
Race				.10
White	84.8	86.4	82.4	
Black	4.0	3.4	4.9	
Hispanic	7.1	5.8	8.9	
Other	4.2	4.4	3.8	
Prenatal breastfeeding intention: mean ± SD no. of months	8.3 ± 4.0	8.4 ± 4.1	8.1 ± 3.7	.16

Data are presented as % or mean ± SD. *P* value was determined by using the  $\chi^2$  test for all control variables except prenatal breastfeeding intention, which was determined by using a *t* test.

**TABLE 2** Percentage of Mothers Citing Reasons as Important for Stopping Breastfeeding by Intention (*N* = 1177)

Reason	Did Not Meet Intentions ( <i>n</i> = 706)	Met Intentions ( <i>n</i> = 471)	<i>P</i> <sup>a</sup>
<b>Lactational factor</b>			
My baby had trouble sucking or latching on	26.8	7.6	<.0001
My nipples were sore, cracked, or bleeding	20.3	10.0	<.0001
Breastfeeding was too painful	15.2	7.0	<.0001
My breasts were overfull or engorged	10.9	5.7	.002
My breasts were infected or abscessed	6.1	3.2	.02
My breasts leaked too much	6.0	5.3	.64
<b>Psychosocial factor</b>			
Breastfeeding was too inconvenient	15.9	18.3	.28
I wanted or needed someone else to feed my baby	17.1	16.8	.87
I wanted to be able to leave my baby for several hours at a time	12.9	19.3	.003
Breastfeeding was too tiring	13.2	12.5	.75
I did not want to breastfeed in public	11.3	13.6	.25
I had too many household duties	10.1	9.3	.69
Someone else wanted to feed the baby	8.9	10.8	.28
<b>Nutritional factor</b>			
I didn't have enough milk	57.8	29.9	<.0001
Breast milk alone did not satisfy my baby	52.0	46.3	.06
I had trouble getting the milk flow to start	28.8	11.0	<.0001
I thought that my baby was not gaining enough weight	18.7	10.6	.0002
A health professional said my baby was not gaining enough weight	15.6	5.7	<.0001
<b>Lifestyle factor</b>			
I wanted my body back to myself	9.5	22.7	<.0001
I wanted to go on a weight loss diet	6.2	11.5	.002
I did not like breastfeeding	7.7	7.2	.79
I wanted to go back to my usual diet	6.1	7.9	.23
I wanted to smoke again or more than I did while breastfeeding	2.8	3.2	.73
<b>Medical factor</b>			
I was sick or had to take medicine	16.7	8.7	<.0001
My baby became sick and could not breastfeed	7.9	3.6	.003
I became pregnant or wanted to become pregnant again	4.7	6.4	.21
I was not present to feed my baby for reasons other than work	5.0	3.4	.20
<b>Milk-pumping factor</b>			
Pumping milk no longer seemed worth the effort that it required	20.7	15.9	.04
I could not or did not want to pump or breastfeed at work	14.5	16.1	.43
<b>Baby's self-weaning factor</b>			
My baby lost interest in nursing or began to wean him- or herself	26.9	35.7	.001
My baby was old enough that the difference between breast milk and formula no longer mattered	12.5	25.5	<.0001
My baby began to bite	9.2	28.5	<.0001

<sup>a</sup> *P* value for  $\chi^2$  difference test.

meeting desired breastfeeding duration (aOR range: 0.26–0.64) and were related to psychosocial concerns, lifestyle conflicts, and infant self-weaning. The primary purpose of the current study was to identify reasons that may put mothers at risk for terminating breastfeeding earlier than desired; hence, Table 3 displays the aORs and 95% confidence intervals for the 13 reasons significantly associated with increased odds of not meeting desired

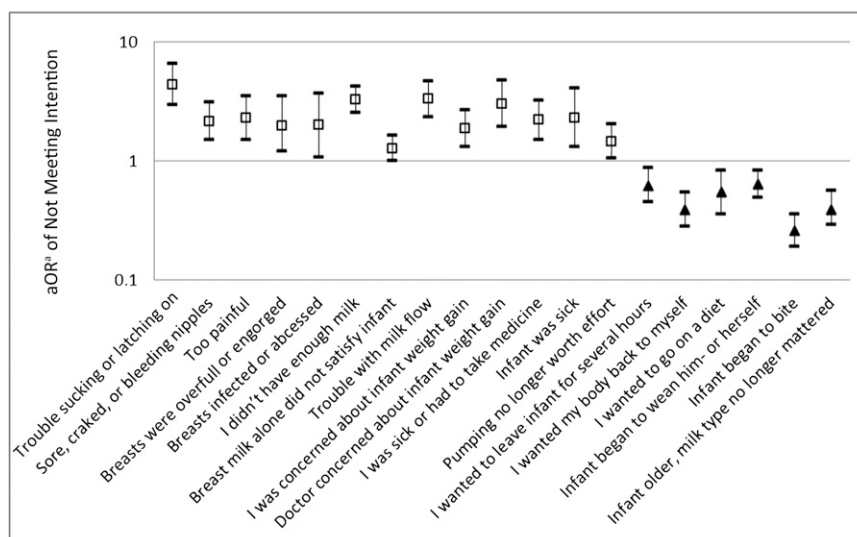
breastfeeding duration. These reasons included lactation problems (“trouble with infant sucking or latching on,” “sore, cracked, or bleeding nipples,” “breastfeeding too painful,” “breasts overfull or engorged,” “breasts infected or abscessed”); nutritional problems (“I didn't have enough milk,” “breastmilk alone did not satisfy my baby,” “I had trouble getting milk flow to start,” “I was concerned about infant weight gain,” “a health professional was

concerned about infant weight gain”); medical problems (“I was sick or had to take medicine,” “baby was sick and could not breastfeed”); and 1 concern regarding the milk-pumping factor (“pumping milk no longer seemed worth the effort that it required”).

## DISCUSSION

We found that 60% of mothers who initiated breastfeeding did not breastfeed their infant for as long as they desired, thus limiting infants' exposure to the benefits that meeting their desired duration could have provided. Many of the reasons mothers cited for not breastfeeding as long as desired were related to concerns about maternal or child health and processes associated with breastfeeding, including concerns about: (1) lactation; (2) infant nutrition and weight; (3) the need to take medicine or illness; and (4) milk pumping. Improper latching may begin a cascade of negative events that undermine breastfeeding, including nipple pain, ineffective milk transfer, and insufficient milk production.<sup>12</sup> When a mother perceives that she is not providing an adequate quality or quantity of milk to her infant, she is likely to stop breastfeeding regardless of the infant's age.<sup>8,12</sup> Yet, studies show that <5% of women are biologically incapable of producing a sufficient quantity of milk or are unable to accomplish adequate infant weight gain through breastfeeding alone.<sup>14,15</sup>

Barriers to breastfeeding that are associated with concerns about maternal health, infant development, or processes associated with breastfeeding can be alleviated when women receive professional support.<sup>9,16–18</sup> For example, in a recent study, breastfeeding duration rates were improved by 9% to 15% in a pediatric practice where routine lactation consultation was integrated into the initial postpartum



**FIGURE 1** Reasons for stopping significantly associated with mother's breastfeeding intention. <sup>a</sup>Adjusted for age, parity, household poverty level, race, marital status, education, WIC participation, and prenatal months of breastfeeding intention (*N* = 1177).

**TABLE 3** Reasons for Mothers (*N* = 1177) Stopping Breastfeeding Associated with Increased Odds of Not Meeting Breastfeeding Intentions

Reason	aOR	95% CI
My baby had trouble sucking or latching on	4.42	2.99–6.54
My nipples were sore, cracked, or bleeding	2.17	1.50–3.13
Breastfeeding was too painful	2.31	1.51–3.52
My breasts were overfull or engorged	1.97	1.22–3.52
My breasts were infected or abscessed	2.00	1.08–3.69
I didn't have enough milk	3.27	2.53–4.23
Breast milk alone did not satisfy my baby	1.28	1.00–1.63
I had trouble getting the milk flow to start	3.34	2.36–4.72
I thought that my baby was not gaining enough weight	1.89	1.32–2.70
A health professional said my baby was not gaining enough weight	3.04	1.95–4.76
I was sick or had to take medicine	2.22	1.51–3.26
My baby became sick and could not breastfeed	2.32	1.31–4.10
Pumping milk no longer seemed worth the effort that it required	1.47	1.06–2.03

aOR was adjusted for age, parity, household poverty level, race, marital status, education, WIC participation, and prenatal months of breastfeeding intention. CI, confidence interval.

visit.<sup>17</sup> Similarly, mothers are more likely to reach their goals for breastfeeding when they experience a greater number of “baby-friendly” maternity care practices.<sup>6,19</sup> Step 2 of the Ten Steps to Successful Breastfeeding in the Baby-Friendly Hospital Initiative states that all health care staff should be trained to counsel mothers on breastfeeding during prenatal visits and should learn skills to support breastfeeding in the hospital and at follow-up health care visits until breastfeeding stops.<sup>20</sup> When mothers

receive routine preventive care by clinicians who are trained to screen and prevent early discontinuation of breastfeeding, women report fewer breastfeeding difficulties and breastfeed for longer periods.<sup>18</sup>

In the current study, regardless of whether a mother met her desired breastfeeding duration, on average she set the same expectations for breastfeeding duration prenatally (~8 months). Mothers who later reported that they met their desired duration

breastfed ~8 months, as initially intended; however, mothers who did not meet their desires, breastfed for about one-half their intended duration (7.8 vs 3.8 months, respectively). These findings imply that most IFPSII mothers intend to breastfeed for an extended duration; however, the large gap between prenatal expectations and duration outcomes for some mothers suggests barriers (clinically confirmed or perceived) that interfere with breastfeeding as long as they desire. Although numerous studies<sup>9,17,18</sup> demonstrate that common barriers to breastfeeding can be resolved through individualized management, our study suggests that clinical support alone is not sufficient for ensuring that mothers meet their desired breastfeeding durations. We found that mothers did not breastfeed as long as they desired when they reported spending too much effort on milk pumping. This concern might reflect the challenges of balancing the return to work or school and other aspects of family life while still nursing. A combination of workplace supports for breastfeeding and clinical management on effective expression of breast milk could help



mothers meet their breastfeeding goals. For mothers to breastfeed as long as they desire, support is likely needed from multiple entities, including health care providers, families, communities, and employers.<sup>21</sup>

There are a few limitations to our study findings. First, mothers in the IFPSII survey were drawn from a consumer opinion mail panel who were more likely to be white, employed, and well educated.<sup>13</sup> IFPSII is uniquely the largest longitudinal study on infant feeding practices in the United States; however, it was not practical or economically feasible to select a large sample of pregnant women from a nationally representative sample of the US population. Second, estimates in our study were based on maternal self-report, and social desirability could have influenced how mothers rated the importance of each reason for stopping breastfeeding. However, the longitudi-

nal design of IFPSII minimized the impact of recall bias on our results. Third, we excluded mothers from analysis who were still breastfeeding at the time they completed their last questionnaire. Exclusion of these mothers may have led to an overestimate of the percentage of mothers who did not breastfeed for as long as they desired. A series of sensitivity analyses were conducted to assess how our estimates of not meeting desired breastfeeding duration might have changed if data on these women were included ( $n = 917$ ). If we assumed that mothers who continued breastfeeding beyond the age that they expected prenatally ( $n = 329$ ) had indeed met their desired duration, the overall percentage of mothers who would not have met their desired breastfeeding duration was reduced to 49%. If we included the remaining women who left the study when their infants were younger than

their prenatally intended breastfeeding duration ( $n = 588$ ), this percentage ranged from 37% to 61% depending on whether we assumed they all met or did not meet their desired breastfeeding duration, respectively.

## CONCLUSIONS

A large number of mothers do not breastfeed their infants for as long as they desire. Our findings suggest that hospitals and routine clinic visits may serve as the primary points of intervention, particularly when mothers' reasons for stopping are associated with concerns about maternal or child health and processes associated with breastfeeding. Support from pediatricians and other health care providers may be necessary to address these challenges and to help mothers meet their own desired breastfeeding goals.

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