
Factors Related to Breastfeeding Discontinuation Between Hospital Discharge and 2 Weeks Postpartum

Elizabeth Brand, BSN

Catherine Kothari, MS

Mary Ann Stark, PhD, RNC

ABSTRACT

Although breastfeeding is known to be beneficial to both mother and infant, many women encounter barriers to breastfeeding, even after successful breastfeeding initiation, which may put them at greater risk for early cessation of breastfeeding. The objectives of this study were to conduct a secondary analysis of data from a longitudinal study of postpartum depression to (a) examine factors related to very early discontinuation of breastfeeding (at 2 weeks postpartum) following hospital discharge and (b) identify women's reasons for very early cessation of breastfeeding. The results of this study support findings from previous research. Having a perceived support system, whether it is personal or professional, may have an effect on both the initiation and duration of breastfeeding. Educating expectant and new mothers, especially women who encounter multiple barriers and are at risk for very early cessation of breastfeeding, of the benefits of breastfeeding and supporting them in developing efficient techniques and problem-solving skills can help increase the duration of breastfeeding.

The Journal of Perinatal Education, 20(1), 36–44, doi: 10.1891/1058-1243.20.1.36

Keywords: breastfeeding initiation, early breastfeeding discontinuation, lactation, lactation support

Exclusive breastfeeding for the first 6 months of life is the best nutrition for infants (American Academy of Pediatrics [AAP], 2005). Since the 1980s, both the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) have promoted breastfeeding by highlighting benefits and proposing initiatives to increase breastfeeding rates on an international level (Walker, 2007). WHO (2008) recommends exclusively breastfeeding infants for the first 6 months of life and continuing with supplements of safe, appropriate foods for up to 2 years. Nationally, AAP (2005) and the U.S. Department of

Health and Human Services (2010) have promoted breastfeeding as the optimal feeding choice.

Despite the growing body of knowledge on breastfeeding benefits and efforts of several national and international groups, only 60% of women in the United States exclusively breastfeed for the first month, and only 51% of women continue to breastfeed at 3 months (Hannula, Kaunonen, & Tarkka, 2008; *Healthy People 2010*, 2000). In a national sample from Canada, 90.3% of women initiated breastfeeding and 51.7% were exclusively breastfeeding at 3 months, but only 14.7% were breastfeeding at 6 months (Chalmers et al., 2009).

Furthermore, breastfeeding disparities extend across racial, socioeconomic, and educational lines, affecting both breastfeeding initiation and duration (Chalmers et al., 2009; Chin, Myers, & Magnus, 2008; Kelly, Watt, & Nazroo, 2006; Kiernan & Pickett, 2006; McCann, Baydar, & Williams, 2007). Although breastfeeding is encouraged, it is often not maintained. The objective of this study was to identify the rate and reasons for very early cessation of breastfeeding (at 2 weeks postpartum) following hospital discharge. Data were collected from a secondary analysis of results from a prospective, population-based study conducted by Kothari (2006) in Kalamazoo County, located in southwest Michigan.

LITERATURE REVIEW

Breastmilk is a well-balanced nutrient that can adapt to the needs of the infant; it contains all needed nutrients for up to 6 months and promotes physical and emotional well-being (Zareai, O'Brien, & Fallon, 2007). As a temperature-controlled nutrient, breastmilk contains antibodies, enzymes, and cytokines that stimulate infants' immune systems. According to Hale (2007) and Venter, Clayton, and Dean (2008), there is evidence of prebiotics in breastmilk to aid in the development of microflora and contribute to a strong immune system. Breastmilk aids in preventing gastrointestinal and respiratory infections, reducing the risk of obesity, reducing the risk of developing otitis media, and improving cardiovascular health. Additionally, breastmilk is associated with fewer allergies, fewer urinary tract infections, and fewer cases of diabetes later in life (AAP, 2005; Camurdan et al., 2007; Hale, 2007; Venter et al., 2008).

Breastfeeding also provides benefits to the mother. Mothers who breastfeed are at a reduced risk for developing postmenopausal breast cancer, have higher bone density after menopause, experience a more timely and efficient return of the uterus to its prepregnancy state, and experience reduced bleeding and increased weight loss in the postpartum period (Hale, 2007; Persad & Mensinger, 2007). Breastfeeding mothers report reduced stress levels, which may be caused by increased prolactin levels (Camurdan et al., 2007; Hale, 2007; Persad & Mensinger, 2007). According to AAP (2005), women who breastfeed have an increased length of time between pregnancies, a decreased risk of ovarian cancer, and a decreased risk of postmenopausal hip fractures.

Variables Influencing the Decision to Breastfeed

Although breastfeeding is beneficial to infant and mother, other factors are involved in the decision to breastfeed. In a study by Persad and Mensinger (2007), breastfeeding intent strongly correlated with

breastfeeding initiation, indicating that women who decide to breastfeed during early pregnancy are likely to initiate lactation after birth. Brodribb, Fallon, Hegney, and O'Brien (2007) reported that the women in their study decided whether or not to breastfeed before or in early pregnancy, and their decisions were based on baby- or mother-centered factors. The baby-centered factor most frequently reported was concern for infant health. Mother-centered factors included either a preference to bottle-feed for convenience or a dislike of breastfeeding because of the reasons that included inconvenience, social barriers, or work-related barriers (Brodribb et al., 2007). Sociocultural, environmental, and personal factors are influential in a woman's decision to breastfeed. If a woman perceives breastfeeding is the social norm, she may be more inclined to breastfeed.

Throughout the literature, a recurring factor that influences a woman's decision to breastfeed is the presence of a support system, whether it is personal or professional (Johnston & Esposito, 2007; Persad & Mensinger, 2007; Taveras et al., 2003). In fact, support systems may be a greater influence than socioeconomic status; if a woman views breastfeeding positively, and has support from her partner, she will be more likely to breastfeed (Persad & Mensinger, 2007). Additionally, the presence of professional support strongly correlates with both breastfeeding initiation (Persad & Mensinger, 2007) and increased duration of breastfeeding (Taveras et al., 2003). Professional support may include support from postpartum nurses during early hospitalization, lactation consultants, physicians (Johnston & Esposito, 2007), and clinicians, such as pediatricians and community lactation consultants outside the hospital (Taveras et al., 2003). Health-care workers during the immediate postpartum period, especially nurses and lactation consultants, play an integral role in assisting the mother to initiate breastfeeding. Education formally presented through individualized, interactional techniques rather than independent and informal means (such as pamphlets or other reading materials) usually yields better results (McInnes & Chambers, 2008; Persad & Mensinger, 2007; Swanson & Power, 2005). Clinicians who are in contact with the mother and infant can affect the duration of breastfeeding by providing positive support, problem solving, and continued patient education. Because of the influence they have, it is important that

A recurring factor that influences a woman's decision to breastfeed is the presence of a support system, whether it is personal or professional.

clinicians have adequate knowledge and skills for educating and supporting women to increase the duration of breastfeeding (Taveras et al., 2003).

Race may also be a factor in initiation and duration of breastfeeding. Chin et al. (2008) found that, among the participants in their study, women of non-White racial backgrounds had lower initiation rates than White women. Additionally, the duration of breastfeeding among non-White women was shorter than among White women. Black women had both lower initiation and duration rates than White women regardless of other demographic and socioeconomic variables. Although several possible explanations may explain this disparity, one reason is thought to be the early introduction of solid foods as a cultural norm (Chin et al., 2008). Conversely, Black women in the United Kingdom who recently immigrated from either the Caribbean or Africa were more likely to breastfeed at 3 months postpartum than White women (Kelly et al., 2006). The same was true of Indian and Bangladeshi mothers at 3 months, with the highest rate of breastfeeding in Black Caribbean women (Kelly et al., 2006).

Women of higher educational status also have higher rates of breastfeeding. In the study by Chin et al. (2008), women who graduated from high school were 70% more likely to breastfeed than those who did not; women who attended college were four times more likely to breastfeed than women who graduated from high school. A relationship between race and education could not be determined. In a national study of Canadian mothers, Chalmers et al. (2009) found women who were educated, older, had incomes above the low-income cutoff level, and had vaginal births were most likely to breastfeed.

Marital status also affects breastfeeding initiation and duration. Compared to unmarried women, married women have higher rates of breastfeeding, especially among Black women. Married Black women are twice as likely to breastfeed as unmarried Black women (Chin et al., 2008; Thulier & Mercer, 2009).

Early Cessation of Breastfeeding

The intention to initiate breastfeeding does not necessarily indicate the mother will exclusively breastfeed for the recommended 6 months. In the study by Chalmers et al. (2009), breastfeeding intention (90.0%) and initiation (90.3%) were high, but their sample supplemented very early (21% in the first week and 25.2% in the second week). Breastfeeding women encounter challenges that may contribute to discontinuation. Several demographic characteristics have been associated with breastfeeding duration (Kiernan & Pickett, 2006;

Thulier & Mercer, 2009). An increasing trend for babies to be born to cohabiting and unmarried parents or to single women (Kiernan & Pickett, 2006) suggests many women may not have the support of a spouse or partner. Single women are at greater risk for early breastfeeding cessation. In a study by Kiernan and Pickett (2006), a greater degree of parental bonding with the infant of married parents was found to be associated with increased duration of breastfeeding. The father's opinion is often taken into account by the mother in her decision to breastfeed. Women who are both unmarried and parenting alone may not have a support system that helps sustain breastfeeding (Johnston & Esposito, 2007; Kiernan & Pickett, 2006). Unmarried women are also less likely to quit smoking during pregnancy (Kiernan & Pickett, 2006). Women who smoke have shorter duration of breastfeeding, encounter more difficulties during breastfeeding, and may be more likely to develop depression, which can contribute to breastfeeding difficulties (Kiernan & Pickett, 2006).

Women of lower socioeconomic status are also less likely to breastfeed (Chalmers et al., 2009) and to continue breastfeeding (Thulier & Mercer, 2009). According to McCann et al. (2007), less than 50% of women enrolled in a Women, Infants, and Children (WIC) program initiate breastfeeding, and less than 25% of those women are breastfeeding their infants at 6 months postpartum. Of the women enrolled in McCann et al.'s study, non-Hispanic Black mothers were less likely than Hispanic or White mothers to breastfeed. Some of the mothers understood the health benefits of breastfeeding, and many who initiated breastfeeding viewed breastfeeding as easier than bottle-feeding. Additionally, they successfully used pumping methods when they returned to work or school. Only half of the women enrolled in WIC who initiated breastfeeding continued to do so at 3 months.

Reasons for Breastfeeding Cessation

Although breastfeeding disparities exist, women across all cultures and socioeconomic status often encounter difficulties that lead to early breastfeeding cessation. Early breastfeeding cessation is commonly influenced by inadequate milk supply, latching difficulties, and painful breasts or clogged milk ducts (Avery, Zimmermann, Underwood, & Magnus, 2009; McInnes & Chambers, 2008; Thulier & Mercer, 2009). Fears of inadequate milk supply, painful breasts, and latching difficulties can be addressed through patient education (Hannula et al., 2008; Swanson & Power, 2005). Women who participated in a study by McCann et al. (2007) reported concerns about

insufficient milk supply, painful breasts during feeding, sexuality issues, maternal smoking, contraception, negative self-image, and embarrassment from public breastfeeding as reasons for early cessation.

Returning to work presents a social factor that may influence women's decision to discontinue breastfeeding. In fact, maternal employment is often linked to premature weaning due to barriers found in the work environment. According to Johnston and Esposito (2007), employed women who return to work after giving birth must cope with the "ecosystem" of the work environment, which includes attitudes of co-workers, length of maternity leave, length of working shifts, and hourly wages or salary. In their study, the researchers found that women who were employed had a 9% lower rate of breastfeeding at 6 months postpartum than women who were unemployed. Johnston and Esposito also found that supportive work environments increase breastfeeding duration. Before returning to work, the employed women in their study felt it was necessary to meet with their managers to discuss breastfeeding. Women who were offered longer maternity leave were more likely to maintain breastfeeding upon their return to work and reported having an easier transition that combined both their breastfeeding needs and work obligations. Moreover, women with higher wages and flexible work schedules were more likely to have longer duration of breastfeeding than women with lower wages and inflexible schedules. Johnston and Esposito's findings are supported by the results of a qualitative study that indicate women who are confident in their ability and committed to breastfeeding are most likely to be successful in their breastfeeding endeavors (Avery et al., 2009).

In summary, research findings demonstrate that breastfeeding is the best feeding option for both mother and infant. However, women often encounter barriers to breastfeeding, even after successful breastfeeding initiation, which may put them at greater risk for early cessation of breastfeeding. The purpose of our study was to conduct a secondary analysis of data from a prospective survey (Kothari, 2006) to (a) examine factors related to very early discontinuation of breastfeeding (at 2 weeks postpartum) following hospital discharge and (b) identify women's reasons for very early cessation of breastfeeding.

METHODS

For our descriptive study, we performed a secondary analysis of data from a prospective survey study conducted by Kothari (2006). The data from the original study were collected by telephone interviews with

Women who are confident in their ability and committed to breastfeeding are most likely to be successful in their breastfeeding endeavors.

participants at 2 to 4 weeks postpartum, eliciting answers to survey questions; additional data were abstracted from participants' prenatal medical records. The original data were collected from October 2002 to May 2003.

Sample

The study sample for the original study was drawn from Kalamazoo County, which is located in southwest Michigan and includes both urban and rural communities and has a population of approximately 238,603 (Kothari, 2006). The original study sample was a population-based cohort of women who were recruited from two hospitals during their postpartum stay. Neither hospital had received the Baby-Friendly designation, which recognizes hospitals that support optimal breastfeeding care as outlined by the WHO and UNICEF (2009); however, both hospitals had lactation consultants available before and after discharge. Compared to the county's maternal population, the study sample contained a larger proportion of women covered by private insurance and a lower proportion of infants born with a low or very low birth weight. Private insurance covered 62.8% of the participants, and 37.2% were covered by Medicaid. Among the study sample, 87% of the women began prenatal care in the first trimester. Only 9% of the women gave birth to either low- or very-low-birth-weight infants. The average maternal age of the women in the study was 27.5 years, and 78.6 % of the women were White, 18.1% were Black, 1.8% were Hispanic, and 1.2% were Asian.

In total, 332 women were included in the original study and represented the population of Kalamazoo County in southwest Michigan (Kothari, 2006). The initial enrollment took place in the postpartum unit of each hospital before discharge. Study subjects were recruited Monday through Friday during the weeks of study enrollment; all women meeting eligibility criteria (residency in the county) were approached. Of the 483 women approached, 332 consented to participate in the study. Women refusing study participation cited lack of time to participate as the primary reason. Of the 332 women, 15 women were dropped from the study because eight women quit and seven women were unreachable. The intent to conduct phone interviews at 2 weeks postpartum proved difficult. Most women were contacted between 2 and 3 weeks postpartum; a few could not be reached until

5 weeks postpartum. Because the study reported here focused on breastfeeding, the subsample analyzed for this study were women who were breastfeeding upon hospital discharge ($n = 239$). At the 2-week postpartum interview, 209 women continued to breastfeed, whereas 30 women had discontinued breastfeeding.

Procedure

The institutional review boards at both hospitals approved the original study, and approval from our university's institutional review board was obtained for the secondary analysis. Subjects had been recruited in the immediate postpartum period and were interviewed by phone at 2 weeks postpartum. In addition to being screened for depression, subjects were questioned regarding the following issues: prenatal, postpartum, and pediatric care; breastfeeding or bottle-feeding preference; maternal smoking habits during both the prenatal and postpartum periods; infant sleeping behaviors; family planning in the postpartum period; history of depression (both personal and familial); perceived support from society, partner, family, and health-care providers; and experience with childhood or adulthood abuse. Additionally, medical and prenatal records were reviewed to obtain the following information: obstetrical data; dates of birth for mother and infant; maternal race; marital status; insurance information; number of previous pregnancies and births; initiation of prenatal care; infant's birth weight; infant's gender; and maternal psychosocial risk factors such as history of mental illness and substance abuse, teen pregnancy, and history of physical or sexual abuse.

Data Analysis

Statistical comparisons were made between groups on categorical variables and calculated using Pearson's chi-square test; comparisons for interval level variables were computed using student *t*-tests and analysis of variance (ANOVA). An alpha level of .05 was determined a priori. Multivariate analyses were conducted using binary logistic regression. All variables with $p < .05$ in the bivariate analysis were included in the model. Variables were entered into the model stepwise, with entry criterion of .05 and removal criterion of .10. Statistical analyses were conducted using SPSS 16.0.1 computer software.

RESULTS

Among the total original study sample of 317 women, 239 (75.3%) initiated breastfeeding prior to hospital discharge. At 2 weeks postpartum, 30 (12.5%) of the

239 women who initiated breastfeeding in the hospital had stopped breastfeeding. The first research question asked what factors were associated with very early breastfeeding cessation. To address this question, women who had initiated breastfeeding but had stopped by 2 weeks postpartum were compared with women who continued to breastfeed.

Data analysis revealed several significant factors associated with very early breastfeeding discontinuation (see Table 1). When demographic variables were considered, race or ethnicity ($\chi^2 = 4.331, p = .037$) emerged as a factor in breastfeeding cessation: Some women from racial or ethnic minorities (Black and Hispanic) stopped breastfeeding in greater proportions than White women. Women who had Medicaid insurance had significantly higher rates of breastfeeding cessation than women with private insurance ($\chi^2 = 16.074, p = .000$). In addition, women who were younger than 30 years old had a greater rate of breastfeeding cessation than women in older age groups ($\chi^2 = 6.725, p = .010$). Marital status was also a significant factor in breastfeeding cessation. Women who were single stopped breastfeeding at a greater rate than women who were married ($\chi^2 = 15.630, p = .000$). Women who did not identify having a partner stopped breastfeeding at a greater rate than women who had partners ($\chi^2 = 12.107, p = .001$). Women who started prenatal care in the first trimester were more likely to continue breastfeeding, whereas women who initiated prenatal care in later trimesters had a greater rate of breastfeeding cessation at 2 weeks postpartum ($\chi^2 = 10.271, p = 0.001$). For the following

TABLE 1
Factors Associated With Very Early Breastfeeding Discontinuation

Variable	Discontinued Breastfeeding ($n = 30$)	Continued Breastfeeding ($n = 209$)	<i>p</i>
First child	63.3%	49.8%	<i>ns</i>
Ethnic minority	30.0%	14.8%	.037
Medicaid	50.0%	17.7%	< .001
Maternal age < 30 years old	80.0%	55.0%	0.010
Single	56.7%	22.5%	< .001
Does not have a partner, postpartum	35.0%	9.0%	.001
Prenatal care after first trimester	30.0%	9.6%	.001
No family planning	39.3%	16.4%	<i>ns</i>
Depression in family	57.1%	36.5%	<i>ns</i>
Childhood trauma	13.0%	10.9%	<i>ns</i>
Domestic violence	6.7%	14.4%	<i>ns</i>

variables, no significant differences emerged between women who stopped breastfeeding and women who continued to breastfeed at 2 weeks postpartum: history of domestic violence ($\chi^2 = 1.337, p = 0.248$); number of pregnancies ($\chi^2 = 0.471, p = 0.493$); gender of the baby ($\chi^2 = 0.815, p = 0.367$); history of previous obstetrical loss ($\chi^2 = 0.001, p = 0.974$); history of depression ($\chi^2 = 0.089, p = 0.765$) or premenstrual syndrome ($\chi^2 = 0.485, p = 0.486$); and perceived helpfulness of the family ($\chi^2 = 0.620, p = 0.431$) or partner ($\chi^2 = 0.143, p = 0.706$).

Because several factors were associated with early breastfeeding cessation (belonging to a racial or ethnic minority, having Medicaid insurance, being younger than 30 years old, being single and without a partner, and seeking prenatal care after the first trimester), logistic regression analysis was run, with breastfeeding continuation or cessation at 2 weeks postpartum as the outcome variable (see Table 2). When all relevant factors were taken into account, not having private insurance (being on Medicaid) and not having a partner increased the odds of discontinuing breastfeeding by a factor greater than 3 (AOR = 3.19, CI = 1.17–9.09, $p = 0.030$ for Medicaid; AOR = 3.48, CI = 1.12–10.81, $p = 0.031$ for no partner).

The second research question asked what reasons women reported for very early cessation of breastfeeding. The most frequent reasons given for breastfeeding cessation in this sample were the breastmilk either did not come in or dried up ($n = 7, 23\%$), the mother perceived her baby preferred the bottle ($n = 7, 23\%$), and sore breasts or nipples ($n = 5, 17\%$; see Table 3).

DISCUSSION

Because many factors influence whether or not a woman decides to breastfeed, the duration of breastfeeding widely varies from the recommended 6 months of exclusive breastfeeding, as advised by the WHO (2008) and AAP (2005). Many barriers to breastfeeding may

TABLE 3
Reasons Reported for Early Breastfeeding Discontinuation

Reason	<i>n</i>	%
Milk did not come in / Milk dried up	7	23%
Perceived that baby prefers the bottle	7	23%
Sore breasts or nipples / Too painful	5	17%
Mother did not prefer nursing/pumping	3	10%
Baby has condition / Baby is a poor nurser	2	7%
Mother returned to work	2	7%
Hospital/neonatal intensive care unit used bottle	1	3%
Infection	1	3%
Convenience	1	3%
Mother overwhelmed	1	3%
Mother on medication	1	3%
Total	31	100%

be biological, social, demographic, or psychological in origin (Thulier & Mercer, 2009). Some women encounter multiple barriers that place them at even greater risk for very early breastfeeding cessation. The purpose of our study was to determine factors associated with very early cessation of breastfeeding (at 2 weeks postpartum). Identifying these factors allows health-care providers and prenatal educators to better anticipate breastfeeding barriers and help mothers prepare for successful breastfeeding.

Factors Associated With Breastfeeding Duration

As found in our study and in previous studies, racial or ethnic status is one of numerous significant factors associated with breastfeeding duration rates. In our study's sample, Black and Hispanic women had lower rates of breastfeeding continuation at 2 weeks postpartum than White women. Similarly, in a study sample of women in Louisiana, Chin et al. (2008) found that Black women had lower rates of breastfeeding at 3 months postpartum than White women, even when varied levels of socioeconomic status were considered. Kelly et al. (2006)

TABLE 2
Factors Associated With Very Early Breastfeeding Discontinuation, Adjusted Odds Ratios

Variable	Discontinued Breastfeeding (<i>n</i> = 30)	Continued Breastfeeding (<i>n</i> = 209)	Odds Ratio, Exp (B)	95% Confidence Interval	<i>p</i>
Ethnic minority	30.0%	14.8%	*		
Medicaid	50.0%	17.7%	3.19	(1.17–9.09)	.030
Maternal age < 30 years old	80.0%	55.0%	*		
Single	56.7%	22.5%	*		
Does not have a partner, postpartum	35.0%	9.0%	3.48	(1.12–10.81)	.031
Prenatal care after first trimester	30.0%	9.6%	*		

Note. *Removed from model, stepwise method.

also examined the association between race or ethnicity and breastfeeding rates; however, in their study, they found that Black women who had recently immigrated to the United Kingdom had higher rates of breastfeeding than White women. Chin et al. also reported that Black women who recently immigrated to the United States were more than four times more likely to breastfeed than White women. The findings from these studies and our study suggest the need to address the effect of not only racial or ethnic status but also cultural assimilation on breastfeeding duration.

In our study sample, insurance status was another significant factor associated with breastfeeding duration. Women who had Medicaid insurance were more likely to discontinue breastfeeding soon after hospital discharge than women with private insurance. Our study's finding is consistent with results from previous research. In one study, women who had Medicaid insurance and were enrolled in WIC programs were less likely to breastfeed (Chin et al., 2008). In another study, more than 50% of women enrolled in WIC initiated breastfeeding, yet only 25% of those women continued breastfeeding at 6 months (McCann et al., 2007). Hospitals where the Baby-Friendly Hospital Initiative was implemented had increased breastfeeding rates regardless of the socioeconomic status of women. Women above the poverty line as well as lower income women on Medicaid both experienced increased rates of breastfeeding, especially if interventions were implemented early in the postpartum period (Murray, Ricketts, & Dellaport, 2007). In Canada, women who reported incomes above the low-income cutoff had higher breastfeeding rates than women below the cutoff (Chalmers et al., 2009). In our study, women who had Medicaid insurance were more than three times more likely to stop breastfeeding by 2 weeks postpartum than women who had other insurance when all factors were considered.

Findings from our study also suggest maternal age is associated with breastfeeding duration. With increased age, there is often an increase in the level of education; both factors are associated with higher breastfeeding rates (Chalmers et al., 2009; Chin et al., 2008). In a qualitative study, women with more confidence in the process of breastfeeding and commitment to breastfeeding were more likely to continue breastfeeding in spite of difficulties (Avery et al., 2009). Older and more educated women are more likely to be confident because they have more life experience and have the opportunity to gain more knowledge. In our study, although the results indicated maternal age is associated with breastfeeding

duration, when other factors were considered, age was not significantly associated with early breastfeeding cessation among the study's participants.

Consistent with the literature, our study's results suggest single women without a partner are less likely to continue breastfeeding than married women and women with a partner. When all factors were considered, women who did not have a partner were more than three times more likely to cease breastfeeding at 2 weeks postpartum than women who had partners. As indicated in previous research, the presence of a support system, whether personal or professional, is one of the strongest influencing factors for women choosing to initiate and to continue breastfeeding (Hannula et al., 2008; Johnston & Esposito, 2007; Kiernan & Pickett, 2006; McInnes & Chambers, 2008; Swanson & Power, 2005). Research findings also suggest that an important influencing variable in the decision to breastfeed includes a woman's personal feelings, which are strongly influenced by the beliefs and attitudes of the support system surrounding her (Hannula et al., 2008; Johnston & Esposito, 2007; Kiernan & Pickett, 2006). Thus, in her decision to initiate and continue breastfeeding, a woman often considers her partner's opinion as well as the perceived breastfeeding culture of her personal support system.

In our study, when all factors were considered, entry into prenatal care in general was not significant regarding breastfeeding duration. However, study results revealed that prenatal care delayed until after the first trimester, in particular, was associated with early cessation of breastfeeding among the study's sample. Evidence in the literature suggests prenatal care positively influences breastfeeding continuation. Semenic, Loiselle, and Gottlieb (2008) found that women who receive prenatal care and attend prenatal educational classes are more likely to have breastfeeding duration levels closer to the recommendation by the WHO and AAP than women who do not receive prenatal care. However, it is important to note that the women in Semenic et al.'s study were considered members of a socioeconomic class that likely afforded them advantages that helped promote their breastfeeding decisions. They may have had a support system consisting of partners and families who positively viewed breastfeeding; they were educated; and they were employed, with adequate maternity leave benefits. Women with higher socioeconomic advantages may not face the same barriers to breastfeeding duration as women with a lower socioeconomic status. In their study, Rosen, Krueger, Carney, and Graham (2008) found that prenatal care that includes breastfeeding education increases

breastfeeding duration and is associated with women breastfeeding exclusively for a longer period. Their finding suggests that early prenatal care that includes breastfeeding education and support for breastfeeding may promote breastfeeding continuation.

Few studies have demonstrated the relationship of domestic violence and breastfeeding initiation or duration. This study found no statistically significant differences in breastfeeding cessation among women who had experienced domestic violence compared to those who had not. According to a study by Lau and Chan (2007), women who are victims of domestic violence have a decreased likelihood to initiate breastfeeding. Their finding was thought to be related to control issues by the partner. If a woman is abused, she may be less likely to attend prenatal appointments and, therefore, may receive little, if any, breastfeeding education during pregnancy. Another possible explanation for women in abusive relationships not breastfeeding is the partner's jealousy of the infant (Lau & Chan, 2007). Jealousy may be exacerbated if the partner views breasts as sexual objects. Our study did not distinguish whether domestic abuse was committed by the current partner or by a previous partner; it may be that only abuse from a current partner affects a woman's choice on whether or not to initiate and continue breastfeeding.

Women's Reasons for Early Breastfeeding Cessation

Our study found no single reason that women give for very early breastfeeding cessation. Rather, women may report various reasons for early cessation. Other studies have found similar results. According to Gatti (2008), perceived insufficient milk supply is a global issue that women report for early discontinuation and is one of the leading reasons for cessation in the first 4 weeks postpartum. Kirkland and Fein (2003) found the following four leading reasons women often report for breastfeeding discontinuation: breast discomfort (including nipple pain); perceived insufficient milk supply; a negative family or health-care support system; or conflicts with other activities, such as employment. It is recommended that interventions for these women be supportive and educational in nature. If a woman has individualized breastfeeding education, she may be able to avoid perceived insufficient milk supply or painful breasts (Gatti, 2008; Persad & Mensinger, 2007). Additionally, support from health-care providers and prenatal educators for troubleshooting breastfeeding techniques can also help women overcome these barriers (Persad & Mensinger, 2007). Social support from family and coworkers is also beneficial (Johnston & Esposito, 2007; Kirkland & Fein, 2003).

STUDY LIMITATIONS

Our study had several limitations that should be considered. The primary limitation was that the study was a secondary analysis of a dataset whose main purpose was not breastfeeding. Because of the design of the original survey, not all factors pertaining to very early breastfeeding cessation could be considered. Our group of interest (women who initiated breastfeeding but discontinued within 2 weeks postpartum) was small, limiting statistical power. Last, the data were collected by self-report in phone interviews, so accuracy could not be verified.

IMPLICATIONS FOR PRACTICE

Many factors may be related to very early breastfeeding cessation. Women encounter barriers to breastfeeding across all socioeconomic, racial, marital, and demographic lines. However, the findings in our study indicate that the key contributors to early breastfeeding cessation are poverty (as indicated by Medicaid insurance coverage) and being alone (as indicated by not having a partner during the postpartum period).

We recommend perinatal educators and other members of the health-care team identify at-risk women and intervene with appropriate, individualized interventions to promote breastfeeding. Perinatal educators may be in a unique position to assist women between hospital discharge and 2 weeks postpartum. During this time, women may not be in contact with nurses or physicians, but may look to perinatal educators for support because of the information and skills educators provided during perinatal education classes. Intervening early with a woman who is having difficulty breastfeeding may prevent breastfeeding discontinuation. Common reasons for breastfeeding discontinuation can be anticipated and interventions can be quickly initiated. Professional support from prenatal educators, nurses, and other practitioners can educate women about the benefits of breastfeeding and provide the support they need to become confident and committed to breastfeeding continuation (Avery et al., 2009).

Additionally, interventions can be aimed at populations who may be less likely to initiate breastfeeding and more likely to cease breastfeeding early (e.g., women who have Medicaid insurance or do not have a partner). Women who have low levels of education and are young, single, and part of a minority group need additional attention and support to initiate and maintain breastfeeding to benefit both mother and child (Thulier & Mercer, 2009).

REFERENCES

American Academy of Pediatrics. (2005). Policy statement: Organizational principles to guide and define

- child health care system and/or improve the health of all children. *Pediatrics*, 115(2), 496–506.
- Avery, A., Zimmermann, K., Underwood, P. W., & Magnus, J. H. (2009). Confident commitment is a key factor for sustained breastfeeding. *Birth*, 36, 141–148.
- Brodribb, W., Fallon, A. B., Hegney, D., & O'Brien, M. (2007). Identifying predictors of the reasons women give for choosing to breastfeed. *Journal of Human Lactation*, 23, 338–344.
- Camurdan, A. D., Ozkan, S., Yuksel, D., Pasli, F., Sahin, F., & Beyazova, U. (2007). The effect of the baby-friendly hospital initiative on long-term breast feeding. *International Journal of Clinical Practice*, 61(8), 1251–1255.
- Chalmers, B., Levitt, C., Heaman, M., O'Brien, B., Suave, R., & Kaczorowski, J. for the Maternity Experiences Study Group of the Canadian Surveillance System. (2009). Breastfeeding rates and hospital breastfeeding practices in Canada: A national survey of women. *Birth*, 36, 122–132.
- Chin, A. C., Myers, L., & Magnus, J. H. (2008). Race, education, and breastfeeding initiation in Louisiana, 2000–2004. *Journal of Human Lactation*, 24, 175–185.
- Gatti, L. (2008). Maternal perceptions of insufficient milk supply in breastfeeding. *Journal of Nursing Scholarship*, 40(4), 355–363.
- Hale, R. (2007). Infant nutrition and the benefits of breastfeeding. *British Journal of Midwifery*, 15(6), 368–371.
- Hannula, L., Kaunonen, M., & Tarkka, M. T. (2008). A systematic review of professional support interventions for breastfeeding. *Journal of Clinical Nursing*, 17, 1132–1143.
- Healthy People 2010. (2000). Vols 1–2. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Office of the Assistant Secretary of Health.
- Johnston, M. L., & Esposito, N. (2007). Barriers and facilitators for breastfeeding among working women in the United States. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 36(1), 9–20.
- Kelly, Y. J., Watt, R. G., & Nazroo, J. Y. (2006). Racial/ethnic differences in breastfeeding initiation and continuation in the United Kingdom and comparison with findings in the United States. *Pediatrics*, 118(5), 1427–1435.
- Kiernan, K., & Pickett, K. E. (2006). Maternal status disparities in maternal smoking during pregnancy, breastfeeding and maternal depression. *Social Science & Medicine*, 63, 335–346.
- Kirkland, V., & Fein, S. (2003). Characterizing reasons for breastfeeding cessation throughout the first year postpartum using the construct of thriving. *Journal of Human Lactation*, 19(3), 278–285.
- Kothari, C. L. (2006, March). *Onset and nature of maternal depression over the first 18 months postpartum*. Paper presented at the Annual Conference of the Association of Maternal and Child Health Programs, Washington, DC.
- Lau, Y., & Chan, K. (2007). Influence of intimate partner violence during pregnancy and early postpartum depressive symptoms on breastfeeding among Chinese women in Hong Kong. *Journal of Midwifery & Women's Health*, 52(2), e15–e20.
- McCann, M. E., Baydar, N., & Williams, R. L. (2007). Breastfeeding attitudes and reported problems in a national sample of WIC participants. *Journal of Human Lactation*, 23(4), 314–324.
- McInnes, R. J., & Chambers, J. A. (2008). Supporting breastfeeding mothers: Qualitative synthesis. *Journal of Advanced Nursing*, 62(4), 407–427.
- Murray, E. K., Ricketts, S., & Dellaport, J. (2007). Hospital practices that increase breastfeeding duration: Results from a population-based study. *Birth*, 34(3), 202–211.
- Persad, M., & Mensinger, J. L. (2007). Maternal breastfeeding attitudes: Association with breastfeeding intent and socio-demographics among urban primiparas. *Journal of Community Health*, 33, 53–60.
- Rosen, I., Krueger, M., Carney, L., & Graham, J. (2008). Prenatal breastfeeding education and breastfeeding outcomes. *MCN: The American Journal of Maternal/Child Nursing*, 22(5), 315–320.
- Semicic, S., Loisel, C., & Gottlieb, L. (2008). Predictors of the duration of exclusive breastfeeding among first-time mothers. *Research in Nursing & Health*, 21, 428–441.
- Swanson, V., & Power, K. G. (2005). Initiation and continuation of breastfeeding: Theory of planned behaviour. *Journal of Advanced Nursing*, 50(3), 272–282.
- Taveras, E. M., Capra, A. M., Braveman, P. A., Jensvold, N. G., Escobar, G. J., & Lieu, T. A. (2003). Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics*, 112, 108–115.
- Thulier, D., & Mercer, J. (2009). Variables associated with breastfeeding duration. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 38, 259–268.
- U.S. Department of Health and Human Services. (2010, August 1). *Breastfeeding*. Retrieved from <http://www.womenshealth.gov/breastfeeding/>
- Venter, C., Clayton, B., & Dean, T. (2008). Infant nutrition part 2: The midwife's role in allergy prevention. *British Journal of Midwifery*, 16(12), 791–803.
- Walker, M. (2007). International breastfeeding initiatives and their relevance to the current state of breastfeeding in the United States. *Journal of Midwifery & Women's Health*, 52, 549–555.
- World Health Organization. (2008). *Breastfeeding recommendations*. Retrieved from <http://www.who.int/about/en/>
- World Health Organization, & United Nations Children's Fund. (2009). *Baby-Friendly Hospital Initiative: Revised, updated and expanded for integrative care*. Geneva, Switzerland: World Health Organization.
- Zareai, M., O'Brien, M. L., & Fallon, A. B. (2007). Creating a breastfeeding culture: A comparison of breastfeeding practices in Australia and Iran. *Breastfeeding Review*, 15(2), 15–24.

ELIZABETH BRAND is a senior staff nurse at NYU Langone Medical Center in the Medical Intensive Care Unit and a graduate of Western Michigan University Bronson School of Nursing. CATHERINE KOTHARI is a senior investigator in Maternal-Child Health at Michigan State University/Kalamazoo Center for Medical Studies. She is also the program evaluator for Michigan's Kalamazoo County Healthy Babies–Healthy Start, for Mental Health Recovery Court in Kalamazoo, and for the Centering Pregnancy Program (a group prenatal care program) at Borgess Women's Health in Kalamazoo, Michigan. MARY ANN STARK is an associate professor in the Bronson School of Nursing at Western Michigan University in Kalamazoo.