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Does Pregnancy Intent Impact the Decision to Breastfeed?

Thesis Submitted in Partial Fulfillment of Honors

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Abstract

Current literature overwhelmingly supports the benefits of breastfeeding for mothers and infants. Numerous studies significantly correlate specific demographics and background factors of breastfeeding and non-breastfeeding mothers. However, little research has focused on the intendedness of the pregnancy and its association with breastfeeding. The goal of this study was to examine the association between pregnancy intendedness and breastfeeding plans and behavior. The first question of interest examined was whether pregnancy intent was associated with a woman's intent to exclusively breastfeed when asked during the third trimester, after control for potentially confounding differences between the two groups. The second question of interest was whether pregnancy intendedness predicted exclusive breastfeeding initiation after control for potentially confounding background variables. Data analysis was completed on a group of women who were part of the Tennessee Intervention for Pregnant Smokers (TIPS) program. The participants were recruited from six prenatal provider offices in Northeast Tennessee. There were 509 women who participated but only 379 women were used in this study due to lack of data on the variables of interest. The study showed that pregnancy intendedness was significantly associated with intent and initiation of breastfeeding after controlling for background factors. Women who planned their pregnancies were two thirds more likely than those who did not to indicate intent to exclusively breastfeed. Also, women who planned their pregnancies were one third more likely to initiate breastfeeding in the postpartum period than women who did not plan their pregnancies. This association is important in the clinical setting because usually women decide whether or not they will breastfeed before delivery. Therefore,

healthcare providers can intervene by providing patients with education on the benefits of breastfeeding early in the prenatal period to support increased rates of breastfeeding initiation.

Introduction

According to the Guttmacher Institute in 2006, for every 1000 women aged 15 to 44 there were 52 unintended births. Of those unintended pregnancies, 43% ended in abortion and the other 48% ended in birth. The United States rate of unintended pregnancies is significantly higher than in other developed countries, and the rate of unintended pregnancies is higher in the South and Southwest than in other parts of the country (Guttmacher, 2012). Because the rate of unintended pregnancies is high in the United States, it is vital to determine the association between pregnancy intent and breastfeeding intent and initiation. The health benefits of breastfeeding are evident and it is the healthcare providers' responsibility to educate women prenatally on breastfeeding in order to support increased breastfeeding rates. By examining the association between pregnancy intent and breastfeeding, the healthcare provider is better able to target women in the most need of breastfeeding education prenatally. The goal of the current study was to examine the association between pregnancy intendedness and breastfeeding plans and behavior. The first question of interest examined was if the pregnancy was intended and if pregnancy intention was associated with intent to exclusively breastfeed when asked during the third trimester, after control for potentially confounding differences between the two groups. The second question of interest was whether pregnancy intendedness predicted exclusive breastfeeding initiation after control for potentially confounding background variables.

Literature Review

Health benefits of breastfeeding for the mother and the baby have been studied, and research overwhelmingly supports breastfeeding an infant has a positive effect on both the mother and the child. Breastfeeding has shown to reduce the risk of breast cancer (Godfrey and Lawrence, 2010; Hale, 2007), type 2 diabetes (Godfrey and Lawrence, 2010; Hale, 2007), cardiovascular disease, and post partum depression in mothers (Godfrey and Lawrence, 2010). Studies also support that breastfeeding can help mothers lose pregnancy weight faster (Hale, 2007). The release of oxytocin initiated from breastfeeding stimulates the uterus to contract back to its pre-pregnancy state, therefore reducing the risks of postpartum hemorrhage (Godfrey and Lawrence, 2010; Hale, 2007). The hormones prolactin and oxytocin are released when a mother breast feeds her child, and these two hormones are known to have antidepressant effects as well as anxiolytic effects thereby reducing the chances of a mother experiencing postpartum depression and promoting a sense of calmness (Godfrey and Lawrence, 2010; Hale, 2007). Long term breastfeeding may reduce the instance of type 2 diabetes in mothers by regulating glucose levels (Godfrey and Lawrence, 2010; Hale, 2007). Breast feeding is more cost efficient and less work after initiation in terms of preparing bottles and mixing formula. There are also many benefits for the newborn who is breastfed. Most research that has been conducted has shown a decrease in gastrointestinal infections, respiratory infections, reduced risk of obesity later in life, increased cardiovascular health, reduced risk of allergies, and reduced risk of urinary tract infections (Hale, 2007). One benefit of breast milk when compared to formula is that breast milk helps to develop the baby's immune system. The mother is exposed to

a pathogen, develops immunity to it, and this immunity is passed through the breast milk to the child whose immune system is not fully developed (Mainstone, 2008). Breast milk has the perfect combination of proteins, fats, carbohydrates, vitamins, and liquid for the baby's complete nutrition; breast milk gives the baby all nutrients he needs in order to grow and develop after birth (Mainstone, 2008). Breastfeeding is an extremely adaptive function of the mother to the child (Godfrey and Lawrence, 2010). The infant and mother are able to bond through skin to skin contact while the mother provides the infant with nutrition that is continuously "evolving" to meet the infant's nutritional needs (Godfrey and Lawrence, 2010). Research has established that breastfeeding is the best practice for promoting long term health, but regardless of these studies findings, not all women choose breastfeeding.

According to the Center for Disease Control in the breastfeeding report card, in 2009 breastfeeding initiation was 76.9%. While this statistic has increased from 2008, it is important to determine what a woman who is most likely to breastfeed her infant looks like demographically in order to identify women who are most in need of breastfeeding education before, during and after pregnancy. White women are more likely to initiate breastfeeding than black women (Taylor and Cabral, 2002). One study found that women who had support from family members or a partner about breastfeeding, women with annual incomes greater than 30,000, and women who attended breastfeeding classes were significantly more likely to have intent to breastfeed than women who did not meet these criteria (Persad and Mensinger, 2008). The same study, along with others, found that the more education a woman had, the greater the odds of her intending to breastfeed (Persad and Mensinger, 2008; Taylor and Cabral, 2002). A

women's attitude towards breastfeeding also affects whether or not she will initiate breastfeeding. A negative attitude towards breastfeeding results in a decreased rate of breastfeeding initiation (Persad and Mensinger, 2008; Dennis, 2002). A literature review conducted showed that women least likely to breastfeed were women who were young, had low incomes, and are in a minority, employed full-time, have a negative attitude towards breastfeeding, or do not believe in their ability to breastfeed (Dennis, 2002).

The intent of pregnancy plays a major role in a women's choice to receive early or any prenatal care. One study showed that women who never intended to become pregnant were twice as likely as women who did intend to become pregnant to underutilize prenatal care (Humbert et al, 2011). Another study looking into the intent of the pregnancy in relation to breastfeeding found that women who intended to become pregnant were more likely to initiate breastfeeding than women who did not intend to become pregnant. The breastfeeding initiation rate for women who intended to breastfeed was 55.9% while it was only 28.0% for women who had unwanted pregnancies (Taylor and Cabral, 2002). This study also found that of the women who initiated breastfeeding at sixteen weeks after initiation only 32.6% of women with intended pregnancies were still breastfeeding, while only 15.5% of women with unwanted pregnancies were still breastfeeding. This association of intendedness of pregnancy and higher chance of breastfeeding initiation and duration was only significant for white women in the study. (Taylor and Cabral, 2002). A study conducted on a rural sample showed several significant factors predictive of the intent to breastfeed. Those factors included being at least 20 years of age, being married,

having graduated from high school, and holding private insurance (Bailey and Wright, 2011). This study also showed a very significant relationship between smoking and intent to breast feed. Mothers who smoked were significantly less likely to intend to breast feed than mothers who did not smoke (Bailey and Wright, 2011). A population based study showed that a higher number of prenatal visits and earlier initiation of prenatal care were significant to maternal report of intent to breastfeed (Chertok et. al, 2011). In congruence with Bailey and Wright's study, this study also showed a significant increase in maternal report of intent to breastfeed with higher maternal age, higher years of maternal education, being married, and holding private insurance (Chertok et al, 2011).

Not enough research has been conducted on pregnancy intent and breastfeeding. There are several studies that outline characteristics of women who breastfeed and those who do not. Also, several studies are available that outline characteristics of women who plan their pregnancies and those who do not. However, the link between pregnancy intent and breastfeeding has not been fully addressed, it is important to examine the association between the two factors. This association will help healthcare identify the at-risk population so that interventions can be taken to increase breastfeeding rates.

Methods

Participants

Study subjects were participants in the first phase of a pregnancy smoking intervention program recruited from six prenatal provider offices in Northeast Tennessee. Of the 509 program participants whose pregnancy resulted in a live birth at an area hospital, 379 completed both the first and third trimester assessments, and thus had complete data on all variables of interest. Thus, the final study sample contained 379 women, who did not differ on any primary demographic factors from the 140 women who did not complete one of the two research assessments.

Procedure and Assessments

Study procedures were approved by the affiliated university Institutional Review Board. Following informed consent, participating women completed in depth interviews during both their first or third trimester of pregnancy, either before or after a scheduled prenatal visit in. Interviews were conducted in private offices, and were directed by a study research assistant. Most participants read the survey tools and marked their own responses on the forms. Where reading comprehension was a potential problem (n=15), the research assistant read the questions aloud to the participant and facilitated form completion. Interviews, which included many assessments not relevant to the current study, took up to an hour to complete. Participants received a \$20 incentive for their time.

Of interest in the current study were the following assessments completed as part of the pregnancy interview. First, a detailed demographic tool was completed

during the first trimester assessment and included a question asking the woman if her current pregnancy was planned or unplanned. Pregnancy smoking was assessed via self-report at both the first and third trimester interview using well-validated standardized tools that included detailed smoking history information. During the third trimester, a detailed infant feeding questionnaire was administered and included an item asking the woman how she intended to initially feed her baby. Those who responded “Breastfeeding only” were classified as intending to exclusively breastfeed, while those who responded “Formula” or “Both breastfeeding and formula feeding” were classified as not intending to exclusively breastfeed. Those who indicated “Undecided” (only 6.9% of the current sample) were classified as not intending to exclusively breastfeed. Finally, following delivery, hospital charts were reviewed for breastfeeding information. A participant was considered to have initiated exclusive breastfeeding if she was breastfeeding her infant without any formula supplementation at the time of hospital discharge.

Data Analysis

Before primary analyses were undertaken, all variables were checked for normality of distribution and analysis assumptions were verified. Initially, t-tests and chi-square analyses were used to compare women whose pregnancy was planned with those whose pregnancy was unplanned on all background variables. Chi-square analysis was also used to examine the bivariate associations between pregnancy intendedness and breastfeeding intent and initiation. Finally, logistic regression analysis was used to examine the associations between pregnancy intendedness and both breastfeeding intent and breastfeeding initiation controlling for significant background differences.

Results

Of the 379 women in the study sample, only 112 (29.6%) indicated their pregnancy was planned. Only one third of women (32.5%; N=123) indicated an intent to exclusively breastfeed when asked during their third trimester, while half (50.7%; N=192) actually did initiate exclusive breastfeeding.

Differences between women whose pregnancy was intended and those whose was not are presented in Table 1. As can be seen, pregnancy intendedness was highly associated with most of the background variables. Compared with women whose pregnancy was planned, those with unplanned pregnancies were significantly younger, had fewer years of formal education, had lower family income levels, were less likely to be married, and were more likely to have smoked during pregnancy.

Bivariate associations between pregnancy intendedness and both breastfeeding intention and breastfeeding initiation were next examined and are also presented in Table 1. Women who planned their pregnancies were two thirds more likely than those who didn't to indicate intent to exclusively breastfeed, a statistically significant difference. In addition, women who planned their pregnancies were one third more likely to actually initiate exclusive breastfeeding than those who had an unplanned pregnancy, also a statistically significant difference.

In order to control for possible background differences, two logistic regression analyses was then performed predicting both breastfeeding intent and breastfeeding initiation from pregnancy intendedness. Background variables that were significantly associated with pregnancy intendedness were entered into the regression equation on

the first step, however, due to a high degree of collinearity between education level and both age and income, level of education was excluded from the final models.

Breastfeeding intention was entered on the second step in the first equation, while breastfeeding initiation was entered on the second step in the second equation. These results are presented in Table 2. As can be seen, background factors were significantly associated with both breastfeeding intent (accounting for 13.4% of the variance), and breastfeeding initiation (accounting for 8.9% of the variance). However, even after control for these background factors, pregnancy intendedness still accounted for a significant amount of variance in both the intention to exclusively breastfeed (1.6%), and the actual initiation of exclusive breastfeeding (1.2%).

Table 1. Background characteristics of participants by pregnancy intendedness

Background Characteristic	Pregnancy Not Planned (N=267)	Pregnancy Planned (N=112)	t/χ^2	p
Age (yrs)	23.5	26.0	4.20	<.001
Education level (yrs)	12.2	13.3	4.99	<.001
Family Income (%<\$20,000)	72.6%	42.0%	45.76	<.001
Marital Status (% married)	28.5%	70.5%	57.78	<.001
Number of children	.9	1.0	1.09	.274
Pregnancy smoking (%)	50.9%	29.5%	14.72	<.001

Table 2. Logistic regression results predicting breastfeeding intent and breastfeeding initiation from pregnancy intendedness

Outcome					
Predictor	R²^a	R² change^b	p^c	Wald^d	p^e
Intent to Exclusively Breastfeed					
Background Variables	.089	.089	<.001		
Age				2.03	.154
Income				5.53	.019
Marital status				.21	.651
Pregnancy smoking				8.85	.003
Pregnancy Intendedness	.105	.016	.028	4.87	.027
Breastfeeding Initiation					
Background Variables	.134	.134	<.001		
Age				5.04	.025
Income				6.87	.009
Marital status				.11	.737
Pregnancy smoking				14.34	<.001
Pregnancy Intendedness	.146	.012	.046	2.97	.046

N=379

a Value for overall model at that step

b Value for that step

c significance value associated with R² change for that step

d Wald for each individual predictor on the final step with all variables entered into the equation

e significance value associated with the Wald statistic for each individual variable

Discussion

This study found an association between pregnancy intendedness and breastfeeding intent and initiation. If a woman's pregnancy was intended she was two thirds more likely to state intent to exclusively breastfeed compared to a woman who did not plan her pregnancy. Also women who planned their pregnancy were one third more likely to initiate breastfeeding in the postpartum period than those who did not plan their pregnancy. After controlling for background factors, the association between pregnancy intendedness and both maternal breastfeeding intent and initiation was still statistically significant. Further research examining the intent of pregnancy and its association with breastfeeding duration is imperative to completely examine pregnancy intent and its association with breastfeeding. In this study, there was no data that evaluated the duration of breastfeeding after actual initiation in the immediate postpartum period. Researchers should examine a more varied sample in order to apply these results universally. Because this study recruited participants from six prenatal care providers in Northeast Tennessee, the sample size needs to be expanded to include state wide and national data. A study showed that only 37% of the sample population stated that their healthcare provider suggested that they breastfeed (Sable and Patton, 1998). There is significant research illustrating the risks of no breastfeeding for both the mother and the infant. Healthy People 2020's goal for the rate of breastfeeding initiation is 81.9%. The national rate of breastfeeding initiation in 2012 was 76.9%, and for Tennessee the breastfeeding initiation rate was even lower at 64.3%. In order to meet Healthy People 2020's goal for breastfeeding, it is the responsibility of health care providers to provide pregnant women with breastfeeding education. There are several studies which outline

variables that put a woman at risk for not breastfeeding. This study found significant background characteristics of women who plan their pregnancy compared to women who did not plan their pregnancy. It is the responsibility of healthcare providers to identify women who are at risk for not breastfeeding such as women who did not plan their pregnancy, women who are young, have a low income, from a minority, women who are not private insurance carriers and women who have negative attitudes towards breastfeeding. When the healthcare provider targets this at-risk population, he or she can provide her with education on breastfeeding benefits. According to the World Health Organization, colostrum is the perfect food for the infant. The WHO recommends six months of exclusive breastfeeding and up to two years of breastfeeding with appropriate complementary foods. Because the risks of not breastfeeding are so high, it is imperative that the healthcare community do its part in increasing the awareness on the benefits of breastfeeding. It is the responsibility of the healthcare provider to intervene through early education to the women who can be identified at more risk to not breastfeed. These women need to be provided with education on breastfeeding and encouraged to make the best choice for themselves and their infant.

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