PRAMSGRAM
OKLAHOMA PREGNANCY RISK ASSESSMENT MONITORING SYSTEM VOL 9 NO 1

Breastfeeding, Part I: Initiation

Introduction:

The significance of breastfeeding in improving the health of infants and mothers has been recognized by national and state health organizations as a priority for many years.[1-4] Breastfeeding is known to provide immediate benefits to infants and mothers as well as long-term protection from chronic health problems that lead to morbidity and mortality. To underscore that importance, Healthy People 2010 Objective 16-19 encourages Americans to "Increase the proportion of mothers who breastfeed their babies" during the early postpartum period to 75% by the year 2010.[5]

Breastfeeding is the biological norm. When infants are not breastfed, the risk of health problems increases significantly. Artificially fed infants have decreased immune system function and decreased resistance to infectious diseases. These infants have increased respiratory and gastrointestinal infection and increased hospitalizations. Infants who are not breastfed have increased risk of chronic conditions such as diabetes, obesity, asthma and leukemia.[1,6]

Breastfeeding impacts maternal health in several ways. The breastfeeding mother experiences oxytocin release during nursing sessions, which speeds uterine involution and reduces postpartum hemorrhage. The physiological effects of oxytocin also cause maternal relaxation and enhance bonding between mother and child. Women who have never breastfed have increased risk of breast cancer, ovarian cancer and osteoporosis.[1]

The positive effects of breastfeeding know no racial, ethnic or socio-economic boundaries. Most women are making the decision whether or not to initiate breastfeeding during the early prenatal period. Therefore this PRAMSGRAM, Part I defines Oklahoma breastfeeding initiation rates and addresses factors influencing the decision to initiate breastfeeding. Part II will define duration rates and address factors influencing breastfeeding duration in Oklahoma.

In Oklahoma

- 68.9% of mothers in Oklahoma initiated breastfeeding in 2000-2002.
- 70.9% of mothers nationwide initiated breastfeeding in 2003.[7]
- Only 51.1% of African American and 60.9% of American Indian mothers initiated breastfeeding as compared to White mothers (71.7%).
- Hispanic women initiated breastfeeding at higher rates than Non-Hispanic women (75.9% vs. 68.3%).
- Mothers with less than a high school education initiated at significantly lower rates (54.6%) than mothers who had 12 years (62.8%) and more than 12 years of education (80.8%).
- 62.4% of women with unintended pregnancies initiated breastfeeding, compared to 75.1% of women with intended pregnancies.

Methods:

PRAMS asked mothers, "Did you ever breastfeed or pump breast milk to feed your new baby after delivery?" An affirmative response indicated that the mother initiated breastfeeding. This question did not consider exclusive breastfeeding versus those that supplemented breastfeeding with breast milk substitutes, nor did it account for duration of breastfeeding. Thus, mothers who reported even one breastfeeding session were included as having initiated breastfeeding. No threshold for duration was established for this analysis.

Using SUDAAN software, the prevalence and 95% confidence intervals were calculated for the initiation of breastfeeding. Prevalence estimates by demographic and pregnancy-related characteristics are described. The chi-square statistic was used to determine significant associations using a significance level of $p \leq .05$.

Results:

Overall, 68.9% of Oklahoma mothers initiated breastfeeding after delivery. However, these rates of breastfeeding initiation differed among ethnic and racial groups. White mothers were more likely to breastfeed than African American or Native American mothers (71.7% compared to 51.1% and 60.9%, respectively, p<0.0001; See Figure 1). Hispanic mothers in Oklahoma initiated breastfeeding at higher rates than non-Hispanic mothers (75.9% vs. 68.3%, p<0.05).

Factors relating to socioeconomic status, such as maternal education and Medicaid funded prenatal care, showed a strong relationship with initiation rates. Women with more than 12 years of education were more likely to begin breastfeeding than those with less than a high school education (80.8% and 54.6%, p<0.0001). Women with a high school education initiated breastfeeding at 62.8%. Among women with prenatal care paid for by Medicaid, only 59.3% initiated breastfeeding (See Figure 2) compared to 78.1% of women without Medicaid during their prenatal period.

Pregnancy intention and the presence of other children in the home also impacted breastfeeding initiation rates. Of women who defined their pregnancy as mistimed or unwanted, only 62.4% initiated breastfeeding, compared to 75.1% with intended pregnancies (p<0.0001). Mothers with no previous births or with only one child were also more likely to initiate breastfeeding than women with two or more children (See Figure 2).

The timing and source of prenatal care reflected differing rates of breastfeeding initiation. Oklahoma mothers most likely to breastfeed were those who received first trimester prenatal care (71.1%) when compared to women who received care in the second trimester (62.7%) and the third (42.8%, p<0.0001). Rates of breastfeeding initiation also differed for sources of prenatal care visits. Indian Health Services or Tribal Clinics had the lowest number of breastfeeding mothers (56.4%). Moderate but significant differences (p<0.0071) were seen between hospitals (62.7%), health department clinics (72.4%), private doctors facilities (71.3%) and community clinics (66.4%; See Figure 3). Discussions about breastfeeding during prenatal care with a health care provider occurred for approximately 70% of surveyed women, regardless of initiation status. The difference between the two categories was not significant.

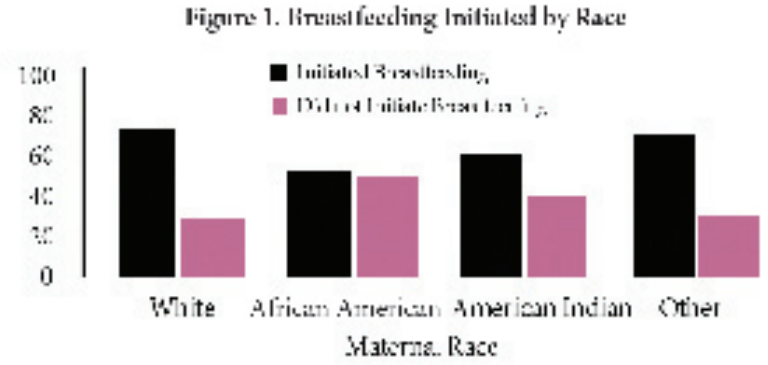


Figure 2: Prevalence of Breastfeeding Initiation. PRAMS, 2000-2002

Characteristic	N	%	95% CI	χ^2
Overall	5,251	68.9	66.9, 70.9	
Maternal Race				
White	4,072	71.7	69.5, 73.8	p < .0001
African America	542	51.1	43.8, 58.3	
American Indian	517	60.9	53.9, 67.4	
Other	100	69.8	54.1, 81.9	
Maternal Ethnicity				
Non-Hispanic	4,815	68.3	66.1, 70.3	p < .05
Hispanic	436	75.9	69.0, 81.7	
Maternal Age				
< 20	753	59.1	53.3, 64.6	p < .0001
20-24	1,636	64.7	61.0, 68.3	
25-29	1,410	72.5	68.8, 76.0	
30 or older	1,451	75.8	72.2, 79.1	
Maternal Education*				
< 12 years	765	54.6	49.0, 60.1	p<.0001
12 years	1,802	62.8	59.2, 66.3	
> 12 years	2,211	80.8	78.1, 83.2	
Marital Status				
Married	3,176	77.2	74.9, 79.3	p < .0001
Other	2,043	57.3	53.8, 60.7	
Previous Live Births				
None	2,213	71.6	68.4, 74.6	p < .0001
One	1,627	71.2	67.7, 74.4	
Two	868	61.8	56.9, 66.5	
Three or more	525	63.6	56.8, 70.0	
Pregnancy Intendedness				
Intended	2,680	75.1	72.5, 77.6	p < .0001
Unintended	2,506	62.4	59.3, 65.3	
Prenatal Care Covered by Medicaid				
No	2,685	78.1	75.6, 80.4	p<.0001
Yes	2,476	59.3	56.2, 62.3	

*Includes only Mothers ages 19 or older.

PRAMS is an ongoing, population-based surveillance system designed to gather information about Maternal behaviors and experiences before, during and after a woman's pregnancy. Each month a sample of approximately 200 new mothers is taken from the Oklahoma live birth registry. Sampled mothers are mailed up to three questionnaires after which non-respondents are contacted for telephone interviews. PRAMS employs a systematic stratified sampling design/ births are stratified by birth weight. Mothers at high risk of adverse pregnancy outcomes are over sampled. Using information from the birth certificate, analysis weights are developed to adjust for selection probability and non-response. For this report, PRAMS data covering the period 2000-2002 were examined (n=5,251.) The response rate was 79%.

The three most common reasons why women did not initiate breastfeeding were: Did not like breastfeeding (43.5%), went back to work or school (29.5%), and had other children to take care of (27.4%), see Figure 4. Respondents were given the option to choose more than one reason for not initiating breastfeeding.

Discussion:

Several factors have shown a strong relationship with breastfeeding initiation in Oklahoma. Race, entry into prenatal care, factors relating to socioeconomic status, and intendedness of pregnancy appear to influence the decision to begin breastfeeding. With effective interventions some of these disparities can be ameliorated. Research has shown that African American mothers, with counseling and information from healthcare providers about the long term protective benefits of breastfeeding both during and after delivery, will choose to breastfeed at rates comparable to white mothers.[8]

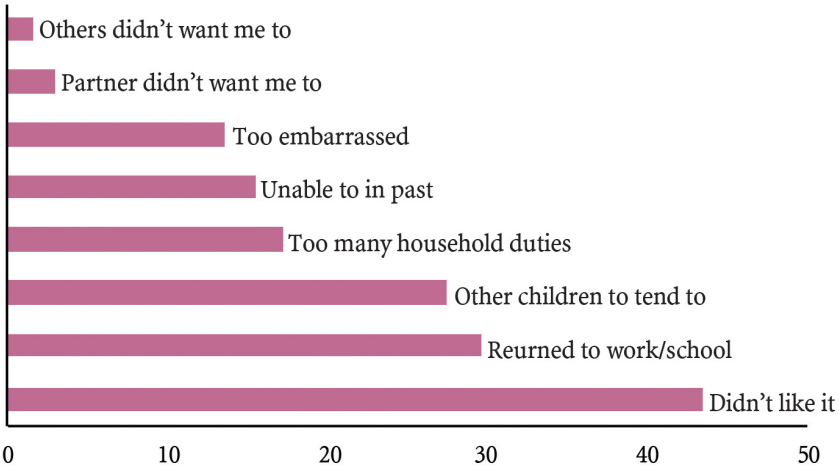
The largest barrier for initiating breastfeeding, "didn't like it", underscores the need for more in-depth prenatal discussion regarding a woman's specific breastfeeding concerns and misconceptions. Health care providers could then offer more targeted education. The second barrier, "had to go back to work or school", indicates that many women did not feel either comfortable or able to continue breastfeeding upon returning to work or school. For women who work full-time, especially in low wage positions, barriers such as the lack of workplace support, limited sanitary or comfortable places to pump and few break times in which to pump, may discourage efforts to initiate breastfeeding.[9]

Several limitations for this study exist. The analysis looked at variables independently and did not control for covariates. Adjusting for covariates may moderate these relationships. This study describes women who indicated that they did or did not initiate breastfeeding and does not examine their overall feeding practices. By not establishing a threshold for breastfeeding duration, women with substantially different feeding practices may be grouped into the same category. Additionally, questions about the content and timing of provider visits are limited by recall bias.

Figure 3: Prevalence of Breastfeeding Initiation. PRAMS, 2000-2002

Characteristic	N	%	95% CI	χ^2
Trimester Entry into Prenatal Care				
1st	3,955	71.1	68.8, 73.2	p < .0001
2nd	786	62.7	56.5,68.5	
3rd	129	42.8	30.4, 56.1	
Source of Prenatal Care Visits				
Hospital	612	62.7	56.5, 68. 5	p = .0071
Health Department Clinic	233	72.4	62.5, 80.4	
Private Doctor's Office/HMO Clinic	3,424	71.3	68.8, 73.6	
Indian Health Service/Tribal Clinic	296	56.4	47.2, 65.1	
Community Clinic	223	66.4	56.2, 75.3	
Other	320	72.9	64.1, 80.2	
Health Care Worker Discussed Breastfeeding				
No	902	70.1	65.0, 74.7	NS
Yes	4,203	68.8	66.6, 70.9	

Figure 4: Reasons for not Initiating Breastfeeding, OK PRAMS 2000-2002



Recommendations:

I. Educate Providers:

- Develop standards for patient and health care provider edcation related to breastfeeding.
- Ensure that breastfeeding education is current and evidence-based across all health care settings.

II. Educate Prospective Parents

- Ensure access to evidence-based breastfeeding information.
- Facilitate discussions to address common concerns of par ents making a feeding choice for their infant.
- Discuss options for breastfeeding after return to work or school, if applicable.

III. Educate Community/Society

- Develop standards for breastfeeding education that begin with school-age children.
- Advocate for family and community support of breastfeeding mothers.

IV. Identify Cultural Barriers:

- Examine cultural barriers to breastfeeding in the American Indian and African American populations.
- Develop interventions to reduce the identified barriers to breastfeeding in these populations.

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