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# PRAMS Brief

Oklahoma Pregnancy Risk Assessment Monitoring System

## OKLAHOMA FAST FACTS

According to PRAMS data:

Just over **10%** of Oklahoma babies were born preterm



Breastfeeding initiation among mothers of preterm and term infants was similar

**(86.3% vs. 86.5%)**



Mothers of preterm infants had **lower** rates of breastfeeding duration than mothers who had term births



Among mothers of preterm infants, **Non-Hispanic American Indians** had the lowest breastfeeding initiation and duration rates, and **Hispanic** mothers had the lowest exclusive breastfeeding rates



**Teen mothers** who gave birth preterm initiated breastfeeding at **significantly higher rates** than those who had term births

**(95.1% vs. 79.9%)**

## BREASTFEEDING AMONG MOTHERS WITH PRETERM AND TERM BIRTHS: PRAMS 2016-2019

Several factors (time availability, physical comfort, working status, milk supply, parental preference, and historical and cultural contexts) can influence breastfeeding\*. Yet, there is evidence that breastfeeding provides some protections unavailable in formula feeding alone. These protections afford buffers against some short and long-term conditions, such as asthma, obesity, diabetes, and ear infections<sup>1,2</sup> among term and preterm babies.

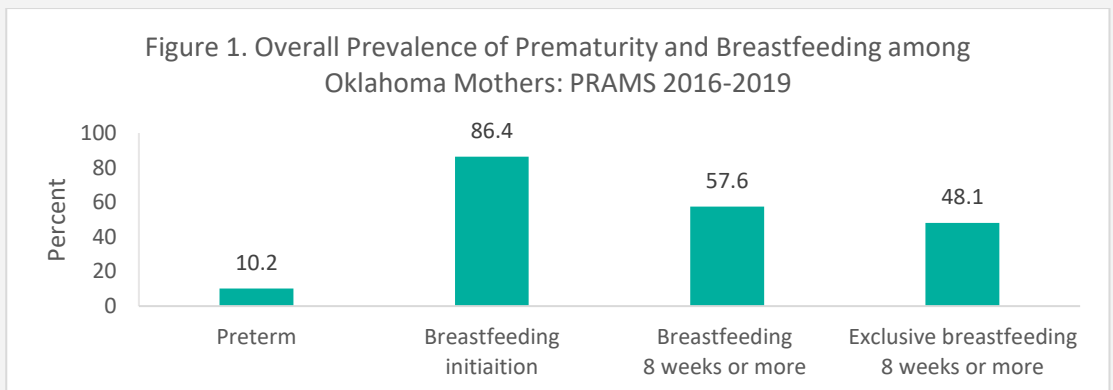
Preterm birth (<37 weeks) is one of the primary causes of infant mortality and occurs in over 10% of Oklahoma births. Premature babies are often more likely to have long-term health issues than full-term infants, including respiratory distress, hypoglycemia, late-onset sepsis, retinopathy, prolonged hospital stay, and readmission after discharge.<sup>3,4</sup> For those who can or choose to feed breast milk to their preterm infants, the protections afforded may reduce these incidences.

This study examines and compares the prevalence of breastfeeding (BF) initiation,

duration, and exclusivity among mothers who had preterm or term births. The study also investigates disparities by the mother's age, race, and Hispanic origin. Data were analyzed from the Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS) for 2016-2019, which included 6,182 respondents (weighted response rate of 56.1%).

The study employed bivariate and multivariate analyses to assess associations between breastfeeding, preterm/term births, and selected maternal demographics using prevalence rates and adjusted risk ratios with 95% confidence intervals. All analyses were conducted using SAS callable SUDAAN. Birth certificates provided gestational age at delivery. Live births with a gestational age of fewer than 37 weeks were considered preterm, and equal to or above 37 weeks were considered term.

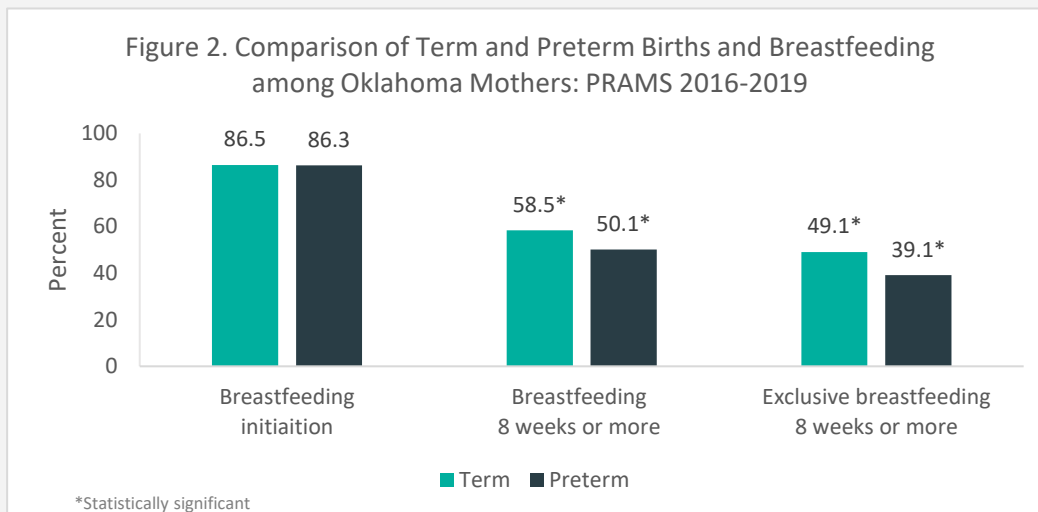
**Figure 1** shows that overall, 10.2% of infants in Oklahoma were born preterm\*\*, 86.4% of all mothers (those of preterm and term infants) initiated BF, 57.6% of all mothers breastfed to at least 8 weeks, and 48.1% breastfed exclusively for at least 8 weeks.



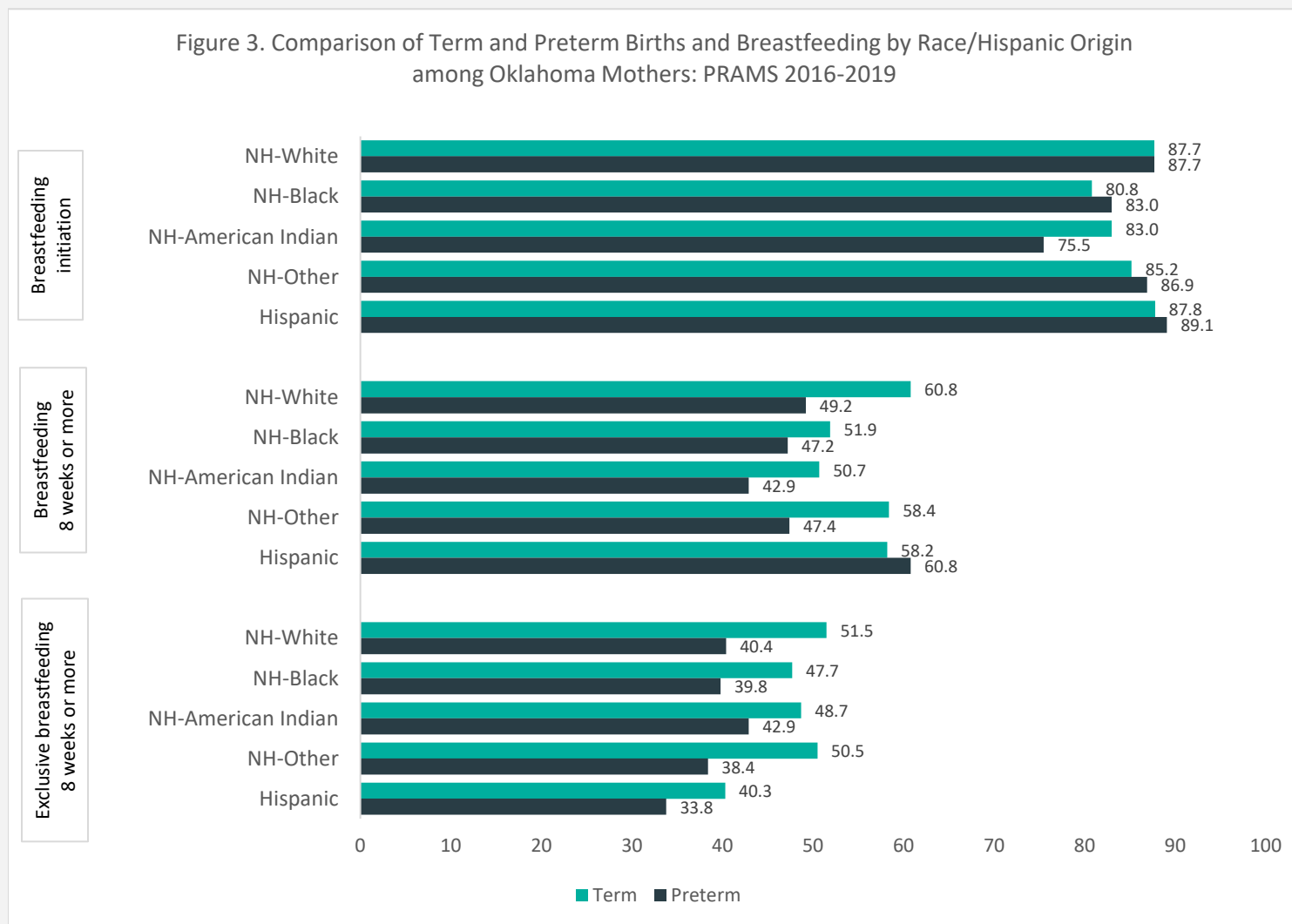
\*Oklahoma PRAMS acknowledges the terms "breastmilk" and "breastfeeding" may not fully capture the range of human milk-feeding experiences. The terms are referred to as such in this brief for consistency with the PRAMS survey tool.

\*\*The preterm rate in PRAMS was slightly lower than that from birth certificate (BC) data from the same period (10.2% PRAMS vs. 11.1% BC)<sup>5</sup>, although the BC data still fits within the confidence interval of the PRAMS data (95% C.I of 9.2-11.4).

**Figure 2** indicates BF differences between mothers of preterm and term infants. The prevalence of BF initiation among mothers of preterm infants was 86.3%, compared to 86.5% among mothers of term infants. This prevalence was similar, although duration (BF to 8 weeks or more) and exclusivity (exclusive BF to 8 weeks or more) were significantly lower among mothers who had preterm births.

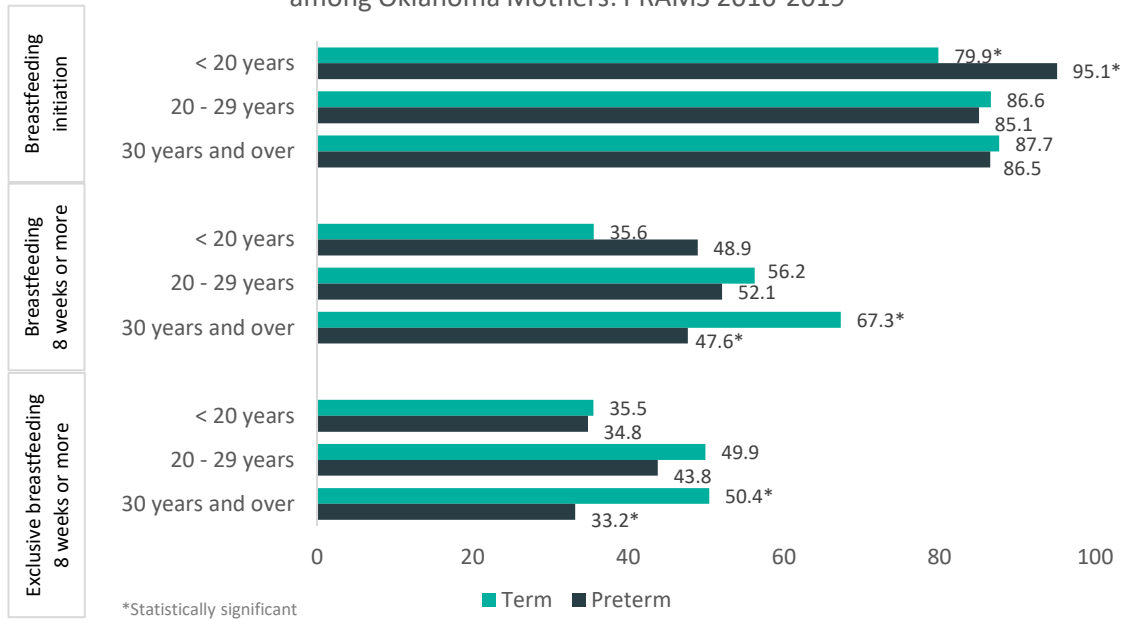


Examining BF by race and Hispanic origin, **Figure 3** shows there were no significant differences in initiation, duration, or exclusivity between mothers who had preterm or term births. While not statistically significant, among mothers of preterm infants, Non-Hispanic (NH) American Indians had the lowest BF initiation and duration prevalence, and Hispanic mothers had the lowest BF exclusivity. Similarly, among mothers of term infants, NH Black mothers had the lowest BF initiation prevalence, NH American Indians had the lowest duration, and Hispanic mothers had the lowest exclusivity.



Breastfeeding practices differed significantly between preterm and term births for teenage mothers (< 20 years) and older mothers (30 years and over). Teen mothers who gave birth preterm initiated BF at significantly higher rates than those who had term births (95.1% vs. 79.9%) (Figure 4). Conversely, older mothers who gave birth preterm had significantly lower rates of BF duration (47.6% vs. 67.3%) and exclusivity (33.2% vs. 50.4%) than older mothers who had term births.

Figure 4. Comparison of Term and Preterm Births and Breastfeeding by Age among Oklahoma Mothers: PRAMS 2016-2019



When adjusting for maternal age, race and Hispanic origin, education, and income, **Table 1** shows that mothers with preterm births were as likely as mothers with term births to initiate BF. They were also 31% less likely to breastfeed for 8 weeks or more and 35% less likely to breastfeed exclusively for 8 weeks or more.

Table 1. Adjusted association of preterm birth and breastfeeding

	Adjusted Odds Ratio <sup>^</sup>	95% Confidence Interval
<b>Breastfeeding initiation</b>		
Preterm birth (<37 weeks)	1.0	0.7-1.5
<b>Breastfeeding duration – 8 weeks or more</b>		
Preterm birth (<37 weeks)	0.689	0.5-0.9
<b>Breastfeeding exclusivity – 8 weeks or more</b>		
Preterm birth (<37 weeks)	0.651	0.5-0.9

<sup>^</sup>Reference group is term birth (>=37 weeks)

The American Academy of Pediatrics recommends exclusive breastfeeding for six months following birth. The organization notes that preterm infants have decreased breastfeeding rates compared to term infants<sup>2</sup>, which supports the overall results of this study. However, there is a paucity of information available in the literature to explain the statistical difference in BF initiation between teens with preterm and term births. This is a worthwhile topic of investigation for future research studies.

Breastfeeding is often a personal family choice, ideally made jointly with caring health professionals. Families need support to provide infant nourishment in ways that fit their situations, circumstances, and desires. Factors that lead to breastfeeding difficulties cannot be dismissed. Structural barriers may play an unseen role in the disparate rates seen in breastfeeding duration and exclusivity. Stress and mother-infant separation are unique challenges faced by preterm mothers. Other factors influencing breastfeeding duration and exclusivity for mothers of preterm infants must be identified and addressed to help improve health outcomes for the most vulnerable Oklahomans.

*My baby would have stayed in my hospital room and breastfed immediately, but he had to be transferred to the NICU at a different hospital. At 48 hours, I was able to be with him and start breastfeeding. Before that, I sent breastmilk (pumped) to the NICU.*

-PRAMS mom

PRAMS is a population-based surveillance system about maternal behaviors and experiences before, during, and after pregnancy. Approximately 250 Oklahoma mothers are selected monthly to participate. Mothers are sent mail questionnaires in English or Spanish seeking their participation with follow-up phone interviews for non-respondents.

Information included in the birth registry is used to develop analysis weights that adjust for probability of selection and non-response. Prevalence rates were calculated using SAS callable SUDAAN. PRAMS 2016-2019 had a response rate of 56.1%.

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