

## Preconception Health Disparities and Birth Outcomes among Foreign-Born and Native-Born Hispanic Women in Oklahoma

### Background

The Hispanic population is the largest and fastest growing racial/ethnic minority group in the United States. According to the Census Bureau, it was projected that by 2020 there would be more than 11.8 million Hispanic women of child bearing age (15-44) in the U.S.<sup>1</sup> In 2018, half of all U.S. births among foreign-born mothers were to women of Hispanic origin; 17% of all U.S. births among native-born mothers were to women of Hispanic origin.<sup>2</sup>

According to a recent Census Bureau report, Hispanics have lower rates of formal education, lower socioeconomic status, higher rates of certain chronic health conditions, and a higher uninsured population than non-Hispanic (NH) whites.<sup>3</sup> Yet despite these risk factors, Hispanics in the U.S. overall have a longer life expectancy and tend to have more favorable pregnancy outcomes in certain metrics (such as lower rates of low birth-weight infants) than NH whites. This phenomenon is known as the Latina paradox. Of critical note, with more time spent living in the U.S., these paradoxically good pregnancy outcomes decline, and Hispanic health status draws closer to and sometimes below that of NH whites.<sup>4,5</sup>

Numerous studies have also shown an unexpected paradox in birth outcomes between native and foreign-born Hispanic women. These studies indicate that foreign-born Hispanic women who immigrated to the U.S. had better birth outcomes than native-born Hispanic women. The strong role of family, living in immigrant communities, and other community factors all tend to encourage healthy behaviors which lead to better birth outcomes.<sup>6,7</sup>

Data from the Oklahoma Pregnancy Risk Assessment Monitoring System (PRAMS) indicate there are differences in preconception behaviors and experiences between foreign-born and native-born Hispanic women. This report examines these disparities and their relationship to birth outcomes.

### Methods

Oklahoma PRAMS and birth data were analyzed for years 2016-2018. PRAMS sampling frame includes a subset of birth certificate data; it provides estimates of maternal behaviors and experiences before, during, and shortly after pregnancy. During 2016-2018, a total of 8,545 mothers were sent an Oklahoma PRAMS survey. Of these, 4,854 mothers responded for a weighted response rate of 58.7%. Data weighting procedures and detailed methodology are described elsewhere.<sup>8</sup>

The term Hispanic is used throughout the study for consistency and is used to reference the Hispanic, Latina, and LatinX population. Nativity of the mother was

### OKLAHOMA FACTS

- In 2016-2018, **15%** of all live births in Oklahoma were to Hispanic women
- Over half (**53%**) of these births were to foreign-born Hispanic mothers
- Foreign-born Hispanic mothers were older and had less formal education than native-born Hispanic mothers
- Prior to pregnancy, foreign-born Hispanic mothers mostly had no health insurance (**66%**) although about **11%** had coverage through Medicaid
- Foreign-born Hispanic mothers were less likely to use alcohol or smoke cigarettes & more likely to use birth control prior to pregnancy
- Foreign-born Hispanic mothers had significantly lower numbers of stressors compared to native-born Hispanic mothers
- There were no substantial differences between foreign-born & native-born Hispanic mothers related to birth outcomes

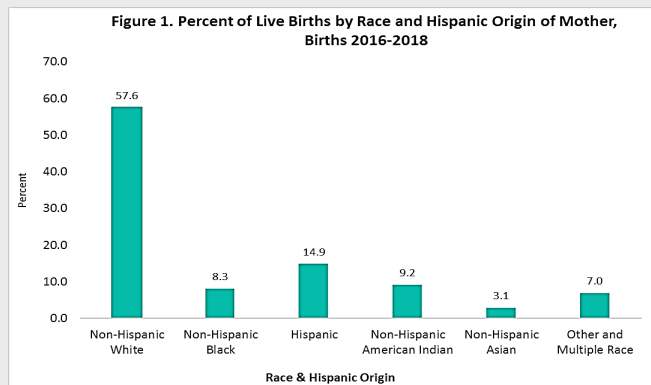


assessed using the place of birth indicator on the birth certificate. Foreign-born refers to those Hispanic mothers who were born outside of the U.S. Native-born refers to those Hispanic mothers who were born in the U.S.

Preconception health is the health of women prior to pregnancy and is a crucial factor affecting delivery and birth outcomes. PRAMS includes data for several of the preconception indicators commonly assessed. For this report, PRAMS data were summarized for indicators including body mass index, diabetes, hypertension, depression, smoking, alcohol use, multivitamin use, pregnancy intention, stressors, and birth control use. Infant outcomes including low birthweight, preterm birth, and infant mortality were compared between foreign-born and native-born Hispanic mothers. Weighted prevalence rates with 95% confidence intervals and Cochran-Mantel-Haenszel chi square tests were used to examine the differences in the indicators between foreign-born and native-born Hispanic mothers. SAS and SAS-callable SUDAAN procedures were used for the analyses.

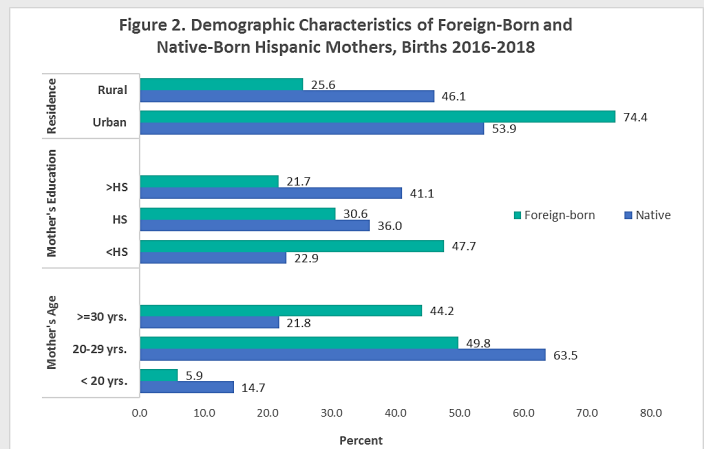
## Results

Live births to Hispanic mothers increased ten-fold between 1991 and 2001; however, the percent of Hispanic live births have remained relatively steady since 2010. In 2016-2018, 15% of all live births in Oklahoma were to Hispanic women (Figure 1) and over half (53%) of the Hispanic mothers were foreign-born.

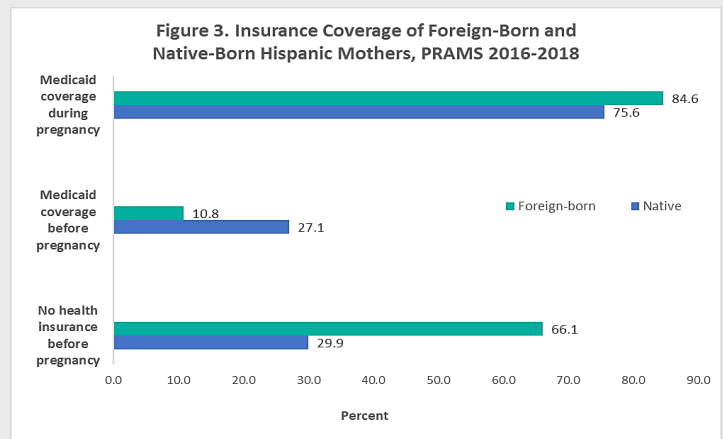


Foreign-born Hispanic mothers were older and had less formal education than native-born Hispanic mothers. Over 44% of foreign-born mothers were 30 years or older compared to 22% among native-born Hispanic mothers. Nearly 15% of the native-born mothers were teens with the majority of native-born mothers being 20-29 years of age. Nearly one in two foreign-born mothers had less

than a high school education; 22% of foreign-born reported education higher than high school. Foreign-born mothers resided mostly in urban areas (74%) while the residence of native-born mothers was nearly evenly split between urban and rural (Figure 2).

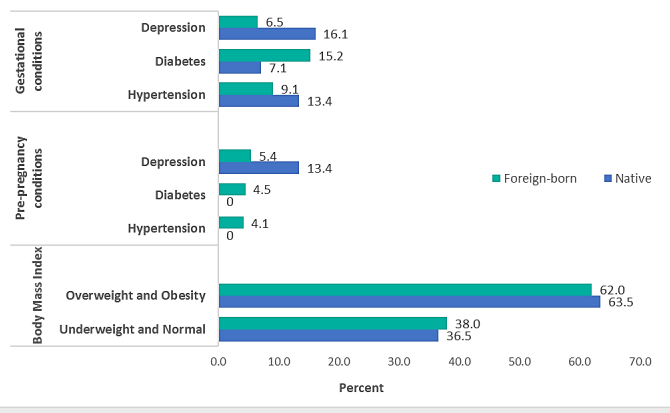


Prior to pregnancy, foreign-born Hispanic mothers mostly had no health insurance (66%) although about 11% had coverage through Medicaid. However, nearly 85% of foreign-born mothers were enrolled in Medicaid during pregnancy compared to 76% enrolled among native-born mothers (Figure 3).



Foreign-born Hispanic mothers had lower rates of overweight and obesity compared to native-born Hispanic mothers (62% and 64%, respectively). About 4% of foreign-born mothers reported having pre-pregnancy diabetes and hypertension. The prevalence of these conditions among native-born mothers is not displayed due to a small sample size. However, native-born Hispanic mothers had over twice the rate of pre-pregnancy depression compared to foreign-born mothers (13.4% and 5.4%, respectively). The prevalence of gestational hypertension and depression is significantly higher among native-born Hispanic mothers, while gestational diabetes is higher among foreign-born Hispanic mothers (Figure 4).

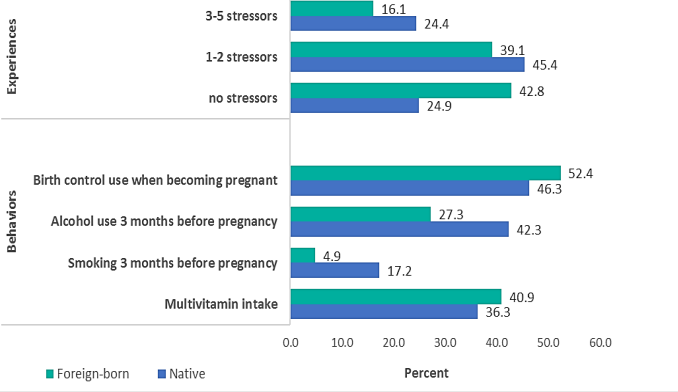
Figure 4. Body Mass Index and Chronic Conditions among Foreign-Born and Native-Born Hispanic Mothers, PRAMS 2016-2018



PRAMS data show that foreign-born Hispanic mothers were less likely to use alcohol or smoke cigarettes, and more likely to use birth control prior to pregnancy. The prevalence of smoking cigarettes was 17% among native-born Hispanic mothers compared to 5% among foreign-born mothers ( $p < 0.05$ ). A similar disparity was observed in alcohol use; native-born Hispanic mothers used alcohol at a significantly higher rate than foreign-born Hispanic mothers (42.3% compared to 27.3%). Nearly 41% of foreign-born Hispanic mothers reported taking a multivitamin at least once a week before pregnancy; this rate was slightly higher than that among native-born Hispanic mothers (36.3%; **Figure 5**).

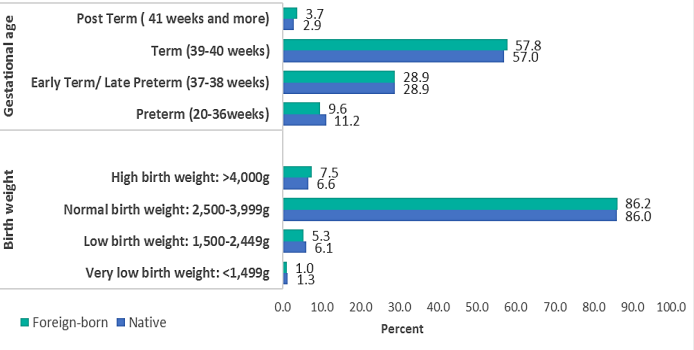
Foreign-born Hispanic mothers had significantly lower numbers of stressors compared to native-born Hispanic mothers. From the list of twelve stressors included in PRAMS, nearly 43% of foreign-born mothers reported no stressors compared to 25% among native-born mothers. Moreover, 45% of native-born mothers and 39% of foreign-born mothers reported 1-2 stressors. About 24% of native-born mothers reported 3-5 stressors compared to 16% reported by foreign-born mothers (**Figure 5**).

Figure 5. Behaviors and Experiences of Foreign-Born and Native-Born Hispanic Mothers Prior to Pregnancy, PRAMS 2016-2018



The substantial differences observed in the select preconception health indicators between foreign-born Hispanic mothers and native-born Hispanic mothers were not apparent in indicators related to birth outcomes. However, foreign-born Hispanic mothers had lower rates of preterm births and lower prevalence of low birth weight infants than native-born Hispanic mothers (**Figure 6**).

Figure 6. Select Birth Outcomes of Foreign-Born and Native-Born Hispanic Mothers, Births 2016-2018



**Limitations**

This study had limitations. First, most of the data was self-reported, which is subject to recall and desirability bias. Additionally, chronic conditions were not verified by medical records but were also self-reported. Perception bias may play a role in response to stressor questions (foreign-born mothers may have different types of stressors not accounted for within the survey). Also, although nativity of mothers was used, there was a lack of data available and examined on mothers' country of origin and length of time in the U.S. Similar research suggests that including these items may produce different study results in terms of birth outcomes.

**Discussion**

This study shows consistent disparities among foreign-born Hispanic mothers compared to native-born Hispanic mothers regarding preconception health behaviors. The data indicate that around 66% of foreign-born mothers had no health insurance at all prior to pregnancy. They were also less likely than native-born mothers to have Medicaid coverage before pregnancy (although they were more likely than native-born mothers to have Medicaid coverage during pregnancy). Lack of quality preventive care has been associated with poor pregnancy outcomes in certain populations<sup>9</sup> and numerous organizations, including the Centers for Disease Control and Prevention, World Health Organization, the American Academy of Family Physicians, and the Association of Maternal and

Child Health Programs, all assert the benefits of preconception care on birth outcomes.<sup>10-13</sup>

However, this study indicated no significant differences in gestational age and birth weight between babies born to foreign-born and native-born Hispanic mothers; despite disparities in preconception behaviors and experiences (including insurance coverage). Further research regarding this is warranted. One possible explanation may be that differences in pre-pregnancy behaviors and experiences are equalized over time between the two groups in large part due to U.S. cultural and societal influences (including consistent exposures to discrimination and other inequalities), which affect birth outcomes. Moreover, additional analysis is needed to examine if preconception and birth outcome disparities exist between these two groups and other racial and ethnic groups in Oklahoma. This would support or weaken evidence of the existence of the “Latina paradox” in Oklahoma.

Although there were no significant differences in gestational age and birth weight, foreign-born Hispanic mothers did have slightly lower rates of both preterm births and low birth weight infants compared to native-born Hispanic mothers. This finding aligns with several research studies, which also noted this same result among Hispanic women.<sup>14-16</sup> However, the mechanism of how being a foreign-born Hispanic woman translates as a protective factor has various theories. One argument is that the lower rates of preterm and low birth weight infants are aligned with the decrease in births to foreign-born Hispanic women. While from 2000 to 2017 the number of births per 1,000 Hispanic foreign-born women of childbearing age fell 25%, births among native-born Hispanic women also fell by approximately 25% during this same time frame<sup>2</sup>, which leads to looking at other possible explanations.

Other theories revolve around the protective factors of community and family support in other countries and the adverse impact of acculturation and U.S. cultural influences once immigration occurs. For example, stressors are now widely known to impact birth outcomes negatively. This study showed that foreign-born Hispanic mothers reported lower numbers of stressors across the board than native-born Hispanic mothers. The presence of these stressors in native-born Hispanic mothers may account for some of the differences in preterm and low birth weight infants compared to foreign-born women.

## Recommendations

Foreign-born Hispanic women who adopt U.S. cultural lifestyles may develop negative health consequences, leading to poor birth outcomes.<sup>17,18</sup> Education and prevention programs targeting Hispanic mothers may have important effects on those who have become acculturated, thereby having a significant potential to reduce health behaviors that lead to poor birth outcomes.<sup>18</sup>

Recommendations in preventing these outcomes include:

- Increase access to health care providers, including granting full practice authority for nurse practitioners in rural areas;
- View every interaction with a health care provider as an opportunity for preconception health education;
- Educate women on the benefits of being as healthy as possible prior to conception;
- Increase awareness of the role of acculturation in Hispanic behaviors, health outcomes, and health care use to providers of public health programs;
- Public health practitioners should have information on the language and nativity of all their Hispanic clients;
- Utilize appropriate cultural and language counseling and prevention strategies;
- Medicaid coverage expansion;
- Further examine life course and social determinants contributions to health and apply them to public health practice.

## Conclusion

Many of the disparities seen in the data may exist due to differing lived experiences and behaviors. Native-born mothers have different health behaviors due to the cultural norms and values that are carried from their native countries of birth.<sup>19</sup> In foreign-born mothers, social norms have been adapted, and the outcome of conforming behavioral practices are presented in the management of pregnancy.

As immigrants spend more time in the U.S., they may adopt behaviors that are more typical of the U.S. culture, which lead to less resistance to negative influences. These adoptive behaviors tend to weaken the health advantages found in the Latina paradox.<sup>4,20</sup> To help address these disparities, early access to care before and during pregnancy is needed, appropriate prevention messaging and interventions applied, and work done to improve structural barriers that affect social determinants.



The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing, population-based study designed to collect information about maternal behaviors and experiences before, during, and after pregnancy.

Monthly, PRAMS sampled between 200 to 250 recent mothers taken from the Oklahoma live birth registry. Mothers were mailed up to three questionnaires in either English or Spanish seeking their participation. Follow-up phone interviews for non-respondents were conducted.

A systematic stratified sampling design was used to yield sample sizes sufficient to generate population estimates for groups considered at risk for adverse pregnancy outcomes. Information included in the birth registry was used to develop analysis weights that adjust for probability of selection and non-response.

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