Unraveling Preterm Birth Disparities: How A Better Understanding of Data Enables Tailored Solutions

Health Equity

Date Posted:

Jul 11, 2024



In the United States, where approximately 1 in 10 infants are born too early, preterm birth (generally defined as born before 37 weeks gestation) is the cause of death in about 16% of babies under the age of one.

In addition to higher risk of death, preterm infants also face heightened risks of other enduring health complications. Compounding this issue are persistent racial and ethnic disparities. Non-Hispanic Black pregnant people experience a 50% higher rate of preterm birth compared to non-Hispanic White pregnant people.

As perinatal health equity researchers, we are driven to inform effective solutions for this pressing public health crisis, especially given the lack of success seen in many preterm birth prevention strategies. **A critical issue that may be undermining our ability to both decrease overall preterm birth rates in the population and close unjust racial gaps is the broad way in which preterm birth itself has been defined across many studies.**

Below, we'll discuss how preterm birth is currently defined, outline how our first-of-its-kind research takes a different approach, and highlight key takeaways to inform future research.

NOT ALL PRETERM BABIES ARE ALIKE

The clinical outcomes, economic burdens, and repercussions of preterm birth on patients and families can vary significantly, especially when one takes into account both the diverse life experiences of the mother/birthing person (*note: we will hereafter use the term birthing person for inclusivity*) and the gestational age at which a baby is born.

While the dichotomous classification of preterm birth into "yes" (born before 37 weeks) or "no" (born at 37 weeks or later) has long been the most commonly used definition for preterm birth in both epidemiologic studies and clinical trials, there is ample data that a baby born at 35 weeks is very different from a baby born at 25 weeks' gestation.

About 75% of all preterm births occur in weeks 34-36 of a pregnancy; these babies are considered "late" preterm infants. While these infants have a lower risk of death, they tend to have an increased risk for morbidities involving nearly every organ system, including neurodevelopmental impairment, compared to full-term infants born in the 37th week or later.

On the other hand, while extremely preterm babies (infants born before 29 weeks' gestation) make up less than 1% of all preterm births, they have very high rates of serious morbidity and overall mortality, even when compared to late preterm infants.

As a result, when preterm birth research has investigated preterm births taking into account gestational length, much more of it has focused on extremely preterm infants, with only recently burgeoning attention to moderate and late preterm infants in large epidemiologic analyses or cellular pathway studies.

WHAT NEW RESEARCH TELLS US

Our team wanted to explore the risks associated with delivering at specific gestational lengths across different populations and identify groups that may require more focused study and resource allocation.

In a recent study conducted with colleagues at Children's Hospital of Philadelphia, we discovered that risk of preterm birth varies significantly when we consider a birthing person's maternal nativity, ethnicity, and race all together and when associating this intersectional identity with different severities of preterm birth.

Our study is one of the first in the U.S. to examine national preterm birth racial and ethnic disparities by categorizing births into three groups: late preterm (34-36 weeks' gestation), moderately preterm (29-33 weeks' gestation), and extremely preterm (<29 weeks' gestation).

By breaking down preterm birth into these severity categories, we discovered previously undescribed disparities between different demographic groups.

We found that the risk of extremely preterm birth was elevated for all minoritized racial and ethnic groups compared to U.S.-born White birthing individuals. This was true even among minoritized groups who are normally considered to not have an increased risk of preterm birth in the U.S., such as foreign-born Hispanic and Asian communities.

Another new finding was our discovery of a decreased risk of late preterm birth among immigrant Black and Hispanic birthing people compared to U.S.-born non-Hispanic White birthing people, which challenges the notion that Black birthing people always have an increased risk of preterm birth compared to White birthing people.

These two findings highlight that race, ethnicity, and nativity may be proxies for different upstream factors when it comes to late vs. extreme preterm birth, and these factors may operate in different ways.

In other words, what drives racial disparities in late preterm birth may not be the same factors that drive disparities in early preterm birth.

WHY THIS MATTERS

While we know preterm birth is a complex, multifaceted outcome, its root causes are not yet clear.

Failures to recognize that race, ethnicity, and nativity may interact in ways that contribute to risk for certain types of preterm birth and resilience to other types of preterm birth may be contributing to our inability to decrease preterm birth rates in these populations and close racial gaps.

Defining better causal frameworks can enable us to design better strategies to tackle upstream structural factors such as health system-related issues or governmental policies impacting socioeconomic status and mobility. And given the changes to the race/ethnicity standards enacted by the U.S. Office of Management and Budget in March of this year, now more than ever we will need detailed analyses that investigate what variables like race, ethnicity and nativity actually represent with respect to health outcomes like prematurity.

What preterm birth trends will emerge when people can choose both an ethnicity and a race in the same question? What about when people of Middle Eastern and North African identity finally see an option that represents them?

Only ongoing granular epidemiologic analyses will be able to tell us.

Thankfully Congress has passed the PREEMIE Reauthorization Act (S. 3029/H.R. 6085) which underscored once again the importance of federally funded research and community-based educational engagement around the prevention of preterm birth. Researchers, policymakers, and program designers using such funds would do well to continue stratifying the outcome and considering demographic variables in intersectional, nuanced ways.

Our findings clearly demonstrate that the variations in risk between different racial and ethnic groups requires us to both stratify preterm birth and study interventions in targeted, culturally humble ways. Only by embracing the complexity and heterogeneity of preterm birth risk can we move closer to better outcomes for infants and families across all communities, which is what equity means to us.

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