



ECHO

Environmental influences
on Child Health Outcomes

A program supported by the NIH

Study Summary

Exploring Gaps in Factors that Affect Pre-term Birth

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Who sponsored this study?

This research was supported by the Environmental influences on Child Health Outcomes (ECHO) program, Office of The Director, National Institutes of Health.

Why was this study needed?

There are high rates of preterm birth (PTB) in the US. Previous studies show that the rates of PTB are different based on race and location, but there is not much information available on what causes these differences. This study also explored the link between the mother's SES, race, and location and how they affect the baby's age at birth. Socioeconomic status (SES) is a combination of factors such as education, income, and occupation.

Who was involved?

Women enrolled in the ECHO Program who delivered a baby were included in this study. They provided all of the required information about themselves and their infant. More than 20,000 mother-infant pairs participated.

What happened during the study?

Researchers studied a variety of information including the mother's age at delivery, education, physical address or region, alcohol use, prenatal care, and the child's birth sex and how many weeks they were at birth. They took this information and looked for patterns and connections between factors that affect PTB.

What were the study results?

There were differences in how early the baby was born based on the mother's race and ethnicity. Compared to non-Hispanic white women, women of all other races had a higher chance of PTB. For women overall, a bachelor's degree or above was linked to less chances of PTB, and a high school education or less led to higher chances of PTB. This link between education level and PTB was mostly seen in non-Hispanic white women and those who lived in the South and Midwest regions of the US. This study also collected data on neighborhood factors; non-Hispanic white women living in a rural area had a higher chance of PTB delivery compared to women living in an urban area.

Impact

This study explored an important gap in the field of children's health. It gathered information on how factors such as the mother's race/ethnicity, location, education level, and SES affect if a baby is born early. The results show that higher education among women could help decrease the chances of PTB in the US, especially in the South and Midwest regions.

What happens next?

Non-Hispanic Black women, Native American, and Alaskan Native women have the highest rates of PTB. Future studies in these populations will help explore the causes for these differences and figure out ways to prevent PTB.

Where can I learn more?

View the full journal [article](#), titled "Racial and geographic variation in effects of maternal education and neighborhood-level measures of socioeconomic status on gestational age at birth: Findings from the ECHO cohorts" in *PLOS One*.

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