

Poster #17

Research Study

Title: “The association between participation in the Special Supplemental Nutrition Program for Women, Infants, and Children and infant mortality in low birth weight infants in the United States”

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Introduction and Objective. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is offered to mothers and infants below the federal poverty line and those enrolled in Medicaid. Prenatal nutritional support aims to improve pregnancy outcomes. Four in ten expectant mothers in the U.S. utilize WIC benefits during pregnancy. However, despite prenatal dietary supplementation, many infants are born at low birth weights, and it is still being determined what benefits WIC may provide to these infants. Therefore, our study explores the association between maternal prenatal WIC enrollment and infant mortality rates in low birth weight infants.

Methods. We assembled a historical cohort utilizing the CDC's Period Linked Birth-Infant Death Data File 2017. We excluded subjects who were foreign residents or those missing information on WIC status or race/ethnicity. We tested the association between WIC enrollment and infant mortality while controlling for demographic and socioeconomic factors, prenatal care, and maternal comorbidities and testing for effect modification by race/ethnicity by fitting a binary multiple logistic regression.

Results. Our sample included 239,030 women who delivered a living singleton infant weighing less than 2,500 g (low birth weight). The cohort of women utilizing WIC benefits throughout their pregnancy had significantly lower infant mortality, with 3529 deaths, than those who did not use WIC, with 6423 deaths (3.4% vs. 4.8% $p < 0.001$). Further stratifying by race/ethnicity, and adjusting for confounders, showed that the highest reduction in the odds of infant mortality was amongst infants from non-Hispanic Asian mothers 43%, followed by non-Hispanic Others 31%, non-Hispanic Blacks 29%, and Hispanics 24%, with the lowest reduction observed in non-Hispanic Whites 18%. [Adjusted OR (95% CI): Asian; 0.57 (0.40-0.81), Other; 0.69 (0.53-0.90), Black; 0.71 (0.65-0.78), Hispanic; 0.76 (0.68-0.85), White; 0.82 (0.75-0.90), respectively, all with $p < 0.001$.]

Conclusions-Implications. Prenatal WIC enrollment significantly reduces the odds of infant mortality in low birth weight infants. The effect was observed in all races and was most substantial in non-white mothers, specifically Asian mothers. We recommend that future studies investigate the association between WIC enrollment and infant mortality within different regions in the U.S. and compare WIC to other prenatal interventions.