

The effects of maternal stature and race/ethnicity on adverse birth outcomes; A retrospective cohort study

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March 31, 2022

Abstract

Objective: To examine the association between maternal stature and adverse perinatal outcomes, and the modifying effect of race/ethnicity. Design: Retrospective cohort study. Settings: USA, 2016-2017. Population: Women with a singleton stillbirth or livebirth (N=7,361,713). Methods: Using data from the National Center for Health Statistics, short and tall stature were defined as <10th and >90th centile of the maternal height distribution. Logistic regression was used to obtain adjusted odds ratios (AOR) and 95% confidence intervals (CI). Main Outcome Measures: Preterm birth (PTB, <37 weeks' gestation), perinatal death, and the composite of perinatal death/severe neonatal morbidity (PD/SNM). Results: Short women had elevated risk of adverse outcomes, while tall women had a decreased risk relative to average stature women. Short women had an increased risk of perinatal death and PD/SNM (AOR=1.14, CI: 1.10-1.17; AOR=1.21, CI: 1.19-1.23, respectively). The association between short stature and perinatal death was attenuated in non-Hispanic Black women compared with non-Hispanic White women (AOR=1.10, 95% CI 1.03-1.17 vs AOR=1.26, CI 1.19-1.33). Compared with women of average stature, tall non-Hispanic White women had lower rates of PTB, PD/SNM (AOR=0.82, CI 0.81-0.83; AOR=0.95, CI 0.91-1.00; AOR=0.90, CI 0.88-0.93, respectively). Conclusion: Relative to women of average stature, short women have an increased risk of adverse perinatal outcomes; these effects are attenuated in Hispanic women, and for some adverse outcomes in non-Hispanic Black women. All tall women have a lower risk of preterm birth, and tall non-Hispanic White women have also lower risk of perinatal death/severe neonatal morbidity.

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