

5-5-2022

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Recommended Citation

Slotkowski, Rebecca; Hanson, C.; Samson, K.; Anderson Berry, A.; and Su, D., "Racial Disparities in Caesarean Delivery Among Nulliparous Women that Delivered at Term: Cross-Sectional Decomposition Analysis of Nebraska Birth Records" (2022). *Child Health Research Institute Pediatric Research Forum*. 64.

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Racial Disparities in Caesarean Delivery Among Nulliparous Women that Delivered at Term: Cross-Sectional Decomposition Analysis of Nebraska Birth Records

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Background: Access to medically indicated caesarean sections is an essential strategy for reducing maternal and infant mortality rates worldwide. However, overuse of medically unnecessary caesarean sections is associated with excess maternal-child morbidity. Previous studies suggest higher rates of caesarean section among women who identify as racial/ethnic minorities.

Significance of Problem: Despite national efforts to prioritize the reduction of medically unnecessary caesarean sections, caesarean rates in the United States have remained stable over the last decade. Women who identify as racial or ethnic minorities experience disproportionately higher rates of caesarean, even when controlling for demographic, behavioral, medical, and institutional level factors. However, detailed analysis of factors contributing to racial/ethnic disparities in caesarean section rates remains largely unexplored. Identifying these factors and assessing their relative importance is critical for the development of interventions specifically tailored to reduce racial and ethnic disparities in caesarean use.

Question: The objective of this study was to understand underlying social and demographic factors that contribute to differences in caesarean rates across racial and ethnic groups.

Experimental Design: Data was collected from 2005-2014 Nebraska birth records on singleton births occurring on or after 37 weeks gestation (n=87,908). Risk ratios (RR) and 95% confidence intervals (CI) for caesarean were calculated for different racial and ethnic categories. Fairlie decomposition technique was utilized to quantify the contribution of individual variables to the observed differences in caesarean.

Results: In the adjusted analysis, relative to non-Hispanic (NH) White race, both Asian-NH (RR 1.21, 95% CI 1.14, 1.28) and Black-NH races (RR 1.13, 95% CI 1.08, 1.19) were associated with a significantly higher risk for caesarean. The decomposition analysis showed that among the variables assessed, maternal age, education, and pre-pregnancy BMI contributed the most to the observed differences in caesarean rates across racial/ethnic groups.

Conclusion: This analysis quantified the effect of social and demographic factors on racial differences in caesarean delivery, which may guide public health interventions aimed towards reducing racial disparities in caesarean rates. Interventions targeted towards modifying maternal characteristics, such as reducing pre-pregnancy BMI or increasing maternal education, may narrow the gap in caesarean rates across racial and ethnic groups. Future studies should determine the contribution of physician characteristics, hospital characteristics, and structural determinants of health towards racial disparities in caesarean rates.