

UK study of over a million births finds stark racial and social inequalities in pregnancy outcomes

November 2 2021



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A nationwide study of over 1 million births in the English National Health Service (NHS) between 2015 and 2017, published in *The Lancet*,

has found large inequalities in pregnancy outcomes between ethnic and socioeconomic groups in England.

The findings suggest that current national programmes to make pregnancy safer, which focus on individual women's risk and behaviour and their antenatal care, will not be enough to improve outcomes for babies born in England. The authors say that to reduce disparities in birth outcomes at a national level, politicians, public health professionals, and healthcare providers must work together to address racism and discrimination and improve women's [social circumstances](#), social support, and health throughout their lives.

"The stark reality is that across England, women's socioeconomic and ethnic background are still strongly related to their likelihood of experiencing serious adverse outcomes for their baby. I think that people will be shocked to see that these inequalities are still responsible for a substantial proportion of adverse pregnancy outcomes in England," says co-lead author Dr. Jennifer Jardine from the Royal College of Obstetrics and Gynaecologists, UK.

She continues, "Over the past few decades, efforts to close the gap in birth outcomes focusing primarily on improving maternity care and targeting individual behaviours have not been successful. Birth outcomes don't only represent a woman's health during pregnancy but also reflect her health and wellbeing across her entire life. While we must continue to encourage healthy behaviours during pregnancy, we also need public health professionals and politicians to strengthen efforts to address the lifelong, cumulative impact of racism and social and economic inequalities on the health of women, families, and communities."

The NHS has set a target of halving stillbirth and neonatal death rates and reducing levels of preterm birth by 25% by 2025. Socioeconomic deprivation and minority ethnic background are known [risk factors](#) for

adverse pregnancy outcomes. However, little is known about the strength of these risk factors or the scale of their impact at the population level. Moreover, a lack of information about how differences in pregnancy outcomes are related to women's societal circumstances and pre-existing health conditions can hamper efforts to improve pregnancy outcomes and reduce inequalities.

To find out more, a team from the National Maternity and Perinatal Audit analysed birth records between 1st April 2015 and 31st March 2017 in NHS hospitals in England to quantify socioeconomic and ethnic inequalities in stillbirth (the death of a fetus after 24 weeks of pregnancy), preterm birth ([live birth](#) before 37 weeks), and fetal growth restriction (FGR) in England.

The team calculated the proportion of adverse pregnancy outcomes that would not have occurred if all women had the same pregnancy risk as the women in the least deprived 20% of neighbourhoods or as those from a white [ethnic background](#), both with and without adjusting for smoking status, body mass index (BMI), and other pregnancy risk factors. Socioeconomic status was measured for each local area using the Index of Multiple Deprivation that combines information on income, employment, education, housing, crime, and the living environment.

In total, 1,155,981 women with a singleton [birth](#) were included in the study, of whom 77% were white, 12% South Asian, 5% Black, 2% mixed race/ethnicity, and 4% other race/ethnicity. Overall, 4,505 women experienced a stillbirth (0.4% [ranging from 0.3% in the least socioeconomically deprived group to 0.5% in the most deprived group]). Of the 1,151,476 liveborn babies, 69,175 (6% [4.9% to 7.2%]) were preterm births and 22,679 (2% [1.2% to 2.2%]) were births with FGR.

The analysis estimates that 24% of stillbirths, 19% of live preterm births, and 31% of live births with FGR were attributed to

socioeconomic [inequality](#) and would not have occurred if all women had the same risk of adverse pregnancy outcomes as women in the least deprived group. Adjusting for ethnicity, maternal smoking, and BMI substantially reduced these inequalities (to 12%, 12%, and 16%, respectively)—suggesting that these characteristics can explain a considerable part of the socioeconomic inequalities in pregnancy outcomes.

Pregnancy complications disproportionately affected Black and minority ethnic women—with 12% of all stillbirths, 1% of preterm births, and 17% of births with FGR attributed to ethnic inequality. Importantly, adjusting for [socioeconomic deprivation](#), maternal smoking, and BMI had little impact on these associations —indicating that other factors related to discrimination based on ethnicity and culture may contribute to poor pregnancy outcomes.

However, the largest increases in excess risk of stillbirth and FGR occurred in the most socioeconomically disadvantaged South Asian and Black women. For example, more than half of stillbirths and three-quarters of births with FGR among the most deprived South Asian women were attributable to socioeconomic and ethnic inequalities and could therefore be avoidable.

"There are many possible reasons for these disparities," explains co-lead author Professor Jan van der Meulen from the London School of Hygiene & Tropical Medicine, UK. "Women from deprived neighbourhoods and Black and minority ethnic groups may be at a disadvantage because of their environment, for example, because of pollution, poor housing, social isolation, limited access to maternity and health care, insecure employment, poor working conditions, and stressful life events. National targets to make pregnancy safer will only be achieved if there is a concerted effort by midwives, obstetricians, public health professionals, and politicians to tackle the broader socioeconomic

and ethnic inequalities."

The authors propose three key measures to reduce inequalities in pregnancy outcomes. The first measure includes targeting high-risk groups with clinical interventions during pregnancy, such as smoking cessation and nutrition programmes, and improved access to high-quality antenatal care (for example, monitoring fetal growth more precisely and frequently, and offering to induce labour when stillbirth risk is increased). They also recommend public health strategies to reduce inequalities in women's health before [pregnancy](#), focusing on smoking and dietary habits as well as broader aspects of maternal adversity, such as mental health issues, substance abuse, and stress related to social disadvantage. Lastly, the authors call for more comprehensive policies to address the fundamental causes of inequality, such as income, education, and employment, that indirectly influence [pregnancy outcomes](#).

The authors acknowledge that their findings show observational differences and note some methodological limitations. They used an area-based measure of socioeconomic deprivation, which might not accurately represent the range of individual [socioeconomic status](#) within a particular area. Additionally, their findings assume the effects of socioeconomic deprivation and ethnicity are not modified by other circumstances, such as overall health, lifestyle, and nutrition—which may limit the conclusions that can be drawn.

Writing in a linked Comment, Dr. Katherine Grantz from the US National Institutes of Health (who was not involved in the study) says, "It is therefore crucial to develop population-level solutions to change rates of adverse [birth outcomes](#) on a national level. Given the volume of evidence that racial and socioeconomic disparities persist in perinatal and women's health, upstream approaches that target systemic causes of inequality and discrimination are more likely to help nations reach their population goals than are those downstream approaches that have

traditionally been employed to target individual behaviours."

More information: Jennifer Jardine et al, Adverse pregnancy outcomes attributable to socioeconomic and ethnic inequalities in England: a national cohort study, *The Lancet* (2021). [DOI: 10.1016/S0140-6736\(21\)01595-6](https://doi.org/10.1016/S0140-6736(21)01595-6)

Provided by Lancet

Citation: UK study of over a million births finds stark racial and social inequalities in pregnancy outcomes (2021, November 2) retrieved 25 April 2024 from <https://medicalxpress.com/news/2021-11-uk-million-births-stark-racial.html>

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