Reviewer's report

Title: Are there differences in mean birth weight between neighbourhoods in a Nordic welfare state: a 10 year cohort study

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Reviewer: Maria Melchior

Reviewer's report:

General
This article examines the relationship between neighborhood characteristics and birthweight in three Swedish cities. The authors find no association between neighborhood income and ethnic mix and low birthweight above and beyond maternal characteristics. My main questions regarding the manuscript follow.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Why are neighborhoods thought to influence birthweight? What are would be the mechanisms of this association? This should be included in the introduction.

Non-Swedish readers may not be familiar with ethnic diversity in Sweden. In the introduction, could the authors describe in some detail the percentage of individuals who belong to ethnic minorities in Sweden, their ethnic background, major immigration waves that recently took place, changes in the ethnic mix of neighborhoods over time?

Throughout the analyses, a single classification of neighborhood SES and ethnic mix should be used (probably the one using three categories). The variable describing neighborhood ethnic mix should be described in greater detail - what makes a neighborhood 'integrated, Swedish in character' or 'integrated' or 'integrated, character of visible minorities'?

Why was birthweight studied as a continuous variable? Wouldn't a cutoff of low birthweight or low for gestational age birthweight be more appropriate?

P-values should be added to tables 2, 3 and 4.

Conclusions about the role of Swedish public policies in curtailing the effects of neighborhood characteristics on population health go beyond the data presented and should probably be removed from the text. The authors may want to discuss the ways in which differences between neighborhood ethnic diversity and income distribution may contribute to their lack of replication of findings from the United States.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

What are the characteristics of births that were not included in the study (out of the 330 096) included in the original dataset?

'Neighborhood ethnicity' is unclear - the authors may want to choose another term ('neighborhood ethnic mix')?

In the discussion, it is stated that '...maternal height () can also be considered a social indicator of ethnicity'. Could the authors clarify this?

Discretionary Revisions (which the author can choose to ignore)
What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.