Reviewer's report

Title: Urinary Cortisol and Depression in Early Pregnancy: Role of Adiposity and Race

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Reviewer: Olanma Ogbuehi

Reviewer's report:

Comment 1: Overview
Overall, this is an interesting study in a specialist area, with some potential to inform the researchers, scientists and clinicians working in this field. The abstract is clear and well-focussed and accurately describes the study methodology and results, it is sometimes clearer and better focussed than the main report. The title is clear and relates well to the study. The authors have given some valid interpretations of their findings and clearly acknowledged the limitations of the research in terms of sample size and selection, and non-standardization of urinary collection methods. They have provided a rationale for further study in this area with a larger population and greater rigour. The authors acknowledge their debt to previous work.

Comment 2. Discretionary Revision
In the background section, paragraph 1, it is not clear to me whether cortisol levels, which are stated to normally be elevated in response to stress, are also necessarily elevated in depressed individuals. If so, this should be made clearer to provide a stronger rationale the investigation of cortisol levels in pregnant women, in relation to depression. In the background section paragraph 2, inflammatory markers and stress markers are noted to be related to depression and to be more prevalent in black women, however, it should somewhere be stated that cortisol is a stress marker which has been shown to be elevated in depressed individuals, compared to the non-depressed population, if this is something that informed the aims and design of the study.

Comment 3: Discretionary Revision
In the background, paragraph 2, the concept of race is introduced, which is a major element of the study. Whilst, this aspect may have been explained at length in other reports, relating to the larger scale longitudinal study, in which this one is nested, here there is no attempt to explain how the different races have been defined. Is there an agreed tool that has been used to define black or white? Race is a complex concept. Have different national and ethnic origins been considered (e.g. black African (born in sub-Saharan Africa, or with parents who are from Sub-Saharan Africa) or black American (where there might be much more ethnic diversity))? Is mixed race categorised differently from black? These aspects may also have a bearing on different socioeconomic profiles within the sample of black women.
Comment 4: Discretionary Revision
In the Background section, paragraph 3 there is a lack of clarity around the aims and objectives of the study. From the way the focus of the study has been written, it is difficult to understand what the null hypotheses are. For instance: are the null hypotheses that:

• There is no difference between urine cortisol measurements in early pregnancy black women who are depressed and those who are not depressed?
• There is no relationship between serum cortisol levels and urinary cortisol levels in early pregnancy?
• There is no relationship between serum or urinary cortisol levels and maternal adiposity in black pregnant women?
• There is no relationship between maternal adiposity and depression in black pregnant women?

A clearer statement of aims and objectives will help the reader determine the authors' reasons for conducting the study and using the selected approaches.

Comment 5: Discretionary Revision
It is interesting that from Table 1, it appears that the mean BMI for these women is in the obese range. Is there a comparison between this sample’s mean BMI for that for the wider cohort?

Comment 6: Minor Essential Revision
In Figures 1 and 2, the data points on the graphs need a key, so that readers can distinguish, to which group they are attached (e.g. obese women or non-obese women) them from each other.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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