Author's response to reviews

Title: Experiences and outcomes of maternal Ramadan fasting during pregnancy: results from a sub-cohort of the Born in Bradford birth cohort study.

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Author's response to reviews:

To the editor,

we thank yourself and the reviewers for the helpful feedback provided which will strengthen the clarity and message of the manuscript.

Shown below are our responses to the feedback provided by the editor in addition to the two reviewers. We have further underlined all changes in the manuscript to highlight the changes made in response to your and the reviewers comments.

Editorial comment

Comment 1: The authors mention on page 11, lines 250-1 that “our study is the first undertaken in the UK to our knowledge”. This should be supported by a PubMed search of the English literature within a specified period of time.

Response

We have added a sentence above on page 12 to lines 260-2 which states “A literature search conducted in PubMed over the time period 1966 to 2014 found no results of studies that explored the characteristics or fasting behaviours of UK resident pregnant Muslim women”.

Comment 2: It is imperative that the authors elaborate on the fact that a very small percentage of their patient population was exposed to fasting in their third trimester. In concept altered nutrition is related to preterm birth; however, the timing of alterations is important. Third trimester fasting has been shown to have an effect on fetal growth because it occurs at a period of time when there is rapid increase in fetal growth when nutrition to the fetus is important. Actually, the Dutch famine in 1944-45 provided the evidence to the differential timing effect of poor nutrition on low birth weight and PTD. First trimester food deprivation increased the risk of PTD while third trimester nutritional stress was associated with low birth weights.
Response

We thank the Editor for highlighting this important research. We have incorporated this information firstly by adding in the trimester of fasting to the results text of the manuscript on lines 176-9 on page 9 of the manuscript as well as highlighting in the summary of results in the discussion on lines 237-8 on page 11 of the manuscript and also highlighting that this issue of exposure was missing from many other papers as well as adding in as a limitation that we did not have many women in our cohort that were fasting in the third trimester (lines 287-9 of the manuscript). We have further provided reference to the Dutch hunger study in the discussion section interpretation in light of other findings, lines 299-304. ‘Third trimester exposure to low calorific fasting has been shown to result in lower than average birth weights[18], although data from exposure to Ramadan fasting by trimester suggests exposure to fasting at any point in pregnancy may be associated with birth outcomes whereas adult outcomes may be more affected by fasting early in pregnancy[2].’

Comment 3: There is contradiction when it comes to odds of fasting in relation to maternal age. Whereas the abstract indicates that odds of fasting were lower in women with higher than mean maternal age, the results and discussion sections mention that that younger women were less likely to fast than older women. This should be clarified and corrected accordingly.

Response

We thank yourself and the reviewer for spotting this error in our manuscript. We have updated the abstract (in line 50) and in the manuscript (lines 197 and 201, 241-2) to reflect that it were the older mothers who less likely to fast compared to their younger peers.

Comment 4: As mentioned by one of the reviewer, the tables are overcrowded. These should be modified to make them more reader-friendly.

Response

We have modified the tables, both by removing unnecessary variables and with some general editing which we hope improves the readability.

Comment 5. The authors need to define: obese BMI, preterm delivery (is it delivery less than 37 completed weeks of gestation?), and pregnancy induced hypertension especially that the modern nomenclature of this entity is hypertensive disorders of pregnancy which encompasses the variable preeclampsia that is discussed separately.

Response

We have included details of the definitions of BMI used in the methods section in lines 141-2. The definition used for preterm delivery on lines 130-136 of the manuscript. Pregnancy induced hypertension was defined as defined as having a blood pressure higher than 140/90 measured at two or more periods at least 6
hours apart (added to lines 152-3). Pre-eclampsia was defined as proteinuria (+ 0.3gms with blood pressure \( \geq 140/90 \) after 20 weeks of pregnancy on more than one occasion (added to lines 153-155).

Comment 6: The very last paragraph mentions that "a substantial proportion of Muslim women living in the UK fast during pregnancy" needs to be tuned down as less than 50% of the population was shown to practice fasting during the month of Ramadan."

Response

We agree with the reviewer that this line may be over playing fasting rates within the study population. We have changed this sentence on lines 328-9 to read “Our results indicate that just under half of all pregnant Muslim women living in the UK fast during Ramadan.”

Reviewer one

Minor compulsory revisions

Comment 1: When we looked at the exposure to fasting trimester groups, only 11 (8.6%) pregnant of fasting group were at third trimester. Best to our knowledge; Fetuses frequently are affected by food or fluid intake in third trimester. This is also affect the birth weight of fetuses. So this need to state in the limitation part of manuscript.

Response: We have incorporated this information firstly by adding in the trimester of fasting to the results text of the manuscript on lines 176-9 on page 9 of the manuscript as well as highlighting in the summary of results in the discussion on lines 237-8 on page 11 of the manuscript and also highlighting that this issue of exposure was missing from many other papers as well as adding in as a limitation that we did not have many women in our cohort that were fasting in the third trimester (lines 287-9 of the manuscript). We have further provided reference to the Dutch hunger study in the discussion section interpretation in light of other findings, lines 299-304. ‘Third trimester exposure to low calorific fasting has been shown to result in lower than average birth weights[18], although data from exposure to Ramadan fasting by trimester suggests exposure to fasting at any point in pregnancy may be associated with birth outcomes whereas adult outcomes may be more affected by fasting early in pregnancy[2].’

Comment 2: Offspring health outcomes pass in some part of the manuscript. when we mention fetal outcomes, we don’t understand only fetal birth weight and preterm delivery. We also understand APGAR scores, Neonatal intensive care unit admission, infant feeding. So especially the caption of Table 3 not to be Birth outcomes by fasting. The authors need to change it as Birth weight and week (exp.)

Response: We thank the reviewer for highlighting this. We have changed the title of table 3 to better reflect its contents. We were limited in terms of sample size and availability of outcome measures so were not able to examine the other
outcomes mentioned although we do agree that there examination in further research would greatly contribute to our understanding of the impact of the Ramadan fast on child outcomes.

Reviewer two

Major revisions

Comment 1: Maternal age: In the abstract, it is mentioned that older maternal age was associated with decreased OR for fasting (agrees with tables) but in the discussion, the opposite was mentioned (line 193) In these adjusted analyses younger maternal age, OR 0.87 (0.80-0.94)-contradicts tables and abstract. Mean age was lower in those that fasted. All tables are huge and confusing-need to be shortened markedly. Limit to variables that are significant or essential to make a point. Can include some of the variables in the text. In table 1-suggest deleting totals

Response: We thank yourself and the reviewer for spotting this error in our manuscript. We have updated the abstract (in line 50) and in the manuscript (lines 197, 201 and 241) to reflect that it were older mothers who less likely to fast compared with their younger peers. We have also removed the totals from table 1.

Minor essential revisions

Comment 2: Excluding stillbirths would prevent the detection of the effect of fasting on stillbirth rate-statistical analysis without excluding stillbirths would be interesting. Need to stress more the recall bias, specifically in assessing the days fasted. Since preterm birth is one of the important outcome variables, details of dating (for e.g. how many were dated by first trimester ultrasound..) should be mentioned.

Response: We thank the reviewer for highlighting the important research area of stillbirths. We agree with the reviewer that this is area is clinically important however we were underpowered to examine this outcome in the current study having only observed 2 stillbirths in the study population of 300 pregnancies.

Discretionary revisions

Define obese

Response: The definition of obesity has been added to the methods section in lines 141-2.

Line 229 Ramadan period was uncommonly reported by only 15 per cent of women-the number was 14% earlier

Response: This has been changed to 14 (line 237).

Line 79 Further it is unclear if there are dose response relationships are present between fasting duration-delete are present
Response: This line has been deleted

Line 213 The birth outcomes, shown in table 3 below showed delete one of the showed

Response: We thank the reviewer for highlighting this typo. The first showed in this sentence has been removed.