Author’s response to reviews

Title: Maternal and birth cohort studies in the Gulf Cooperation Council countries: a systematic review and meta-analysis

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Maternal and birth cohort studies in the Gulf Cooperation Council countries: a systematic review and meta-analysis

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Reply to Editor’s Comments

We would like to thank the editor and the editorial team at the Systematic Reviews journal. We greatly appreciate the time and effort spent on critically reviewing and evaluating our work. We are pleased to be informed, based on the editorial decision, that our manuscript is now potentially acceptable for publication in Systematic Reviews, once we have carried out some essential revisions suggested by the reviewers. Please find below a point-by-point reply addressing each of the raised comments. Changes in the main text are highlighted in yellow color.

Reply to the reviewer’s Comments

Comment# 1. Can the authors please clarify why RCTs have been excluded?

Response: We thank the reviewer for the comment. The inclusion and exclusion criteria in this
manuscript are aligned to answer the objectives of our reported systematic review as stated in our peer-reviewed and published protocol manuscript. Our systematic review was designed and conducted (i) to summarize and characterize the exposures and outcomes that have been examined and discussed in the maternal and birth cohort studies in the six GCC countries (qualitative synthesis); and (ii) to quantitatively generate weighted effect estimates on the association between maternal obesity and (a) caesarean section (CS); and (b) fetal macrosomia (quantitative synthesis).”

The study authors do not feel the need to specifically justify the exclusion of RCT’s as the systematic review and meta-analysis was conducted according to the inclusion criteria stipulated in our published and registered protocol. We agree with the reviewer that experimental study designs, such as RCTs, could be more informative when exploring the association between outcome-exposure pairs; however, considering ethical issues, RCTs do not exist for the majority of maternal and child health exposure and outcome pairs, such as maternal obesity and caesarean section or macrosomia. As such, cohort study designs provide the best available evidence. Since our systematic review was designed to review only cohort studies, it would be obvious that only studies of the cohort design, either retrospective or prospective, would be included. Future systematic reviews may want to focus on RCTs testing lifestyle interventions during the pre-conception or early pregnancy.

Comment# 2. Why in the meta-analyses that some of the same studies have been included in the same analysis?

Response: We thank the reviewer for the comment. The study authors would like to clarify that the reported adjusted odds ratios in the individual studies have been converted to relative risks as it is clarified in the main text Page # 10 (line 202-207). We produced meta-analysis for two exposure-outcome pairs, namely, (1) association between maternal obesity and C-section and (2) association between maternal obesity and macrosomia. To avoid biased pooled estimate, pooling quantitative estimates should be based on estimates obtained from the same quantitative measures of association on the same exposure-outcome pairs across studies.

In figure 2, two estimates were included from the same study (Wahabi et al 2013 [75]) as the estimate of association between maternal obesity and macrosomia was stratified in the original study (Table 32 page 5) according to the exposure to second-hand smoking status. Authors, could have produced an overall pooled estimate for those two stratified estimates and then used it in the meta-analysis. However, this would not affect the direction and the magnitude of the pooled association using stratified estimates reported in the individual study in our meta-analysis. This is also applicable to the included two estimates from the same study reported by (Wahabi et al 2013 [72]) that provided a stratified association between maternal obesity and macrosomia according to the GDM status (page #4 Table 3). Please note that the magnitude of the individual association shown in our meta-analysis is different from the ones reported in tables in the individual studies due to the conversion from odds ratio to relative risk as we explained earlier above and in the main text of the manuscript

Comment# 3. I checked reference 72 and could not find the data in the study report.

Response: We thank the reviewer for their comment. We apologies for this typographical error. The correct reference is 75 not 72. The data is available in Table 3 on page 5 (Page 35, Line 886).

Comment# 4. The additional file figures are also missing the effect measure from the plot.

Response: We thank the reviewer for their comment. The missing effect measures in the additional files
figures was due to our inability to verify the accuracy of the reported 95% confidence interval limits in the original studies after contacting the corresponding author for further clarification. This has already been explained on page 16 (lines 321-322) in the main text file. The purpose of excluding those unverified estimates was to look at the strength of association even after removing inaccurate estimates as a kind of sensitivity analysis.