Reviewer’s report

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

Version: 0 Date: 15 Jun 2019

Reviewer: Hanan Abdul Rahim

Reviewer's report:

Summary:

The authors review maternal and birth cohorts in countries of the Gulf Cooperation Council (GCC) up to November 2017. The principal conclusion is the need for more focus on environmental, medical, and biological exposures and outcomes relevant to the region.

Comments:

Compiling a list of maternal and birth cohorts in the GCC is useful for researchers interested in the region. It is also useful to have a summary of exposures and outcomes studied thus far, and a systematic assessment of risk of bias.

Main Concerns:

1. the bulk of this manuscript is a scoping review rather than a systematic review. In so far as the review documents existing cohorts and assesses their risk of bias, the findings are useful. However, the main weakness is in the part of the review looking at the association of "common exposure-outcome pairs." A systematic review requires an a priori focused research question. the "PECO" outlined in this review is too general and is not, in my view, appropriate for a systematic review. For the reader to have confidence in the pooled estimates, the research question should be clear, and in turn, it would help the reader judge the appropriateness of inclusion/exclusion criteria and analysis methods. This is further supported by the fact that the findings of the meta-analysis appear to be irrelevant to the "Conclusions". The authors should consider including only the scoping review, while conducting systematic reviews and meta-analyses of focused research questions.

2. The term "exposure" appears to refer to "main" exposures and well as to variables used for adjustment of confounding. This has implications for how associations in "exposure-outcome" pairs are interpreted. For example, treating "age" as a main exposure is different in interpretation than using it as a confounder. The paper does not seem to make this distinction. While this may not be problematic for the scoping exercise, I find it problematic for the interpretation of the meta-analysis.

3. The upper time limit of the search is November 2017. Should this article be published, it would likely appear in 2019 or even 2020, meaning that the search would definitely need to be updated.

Some Specific Comments:

1. Line 39: weighted estimates of what?
2. Line 42: clarify that "35" is the number of published studies that met inclusion criteria rather than the
number of cohorts set up in the GCC.
3. Line 84: what are examples of such "unique" exposures, and how were they addressed in the review?
4. Lines 87-88: "health outcomes" is a neutral term, where the authors clearly mean "adverse health outcomes"; can also use "noncommunicable diseases and their risk factors"
5. Line 178-179: Adjustment for the largest number of variables is not necessarily the most appropriate strategy for adjustment, and hence the estimates may not be the best representatives of the real estimate
6. Line 225: significant typos

In conclusion, this is potentially a useful scoping exercise. However, it should be updated, and any SR/MA should be conducted on a priori focused research questions.

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