Reviewer's report

Title: Effect of low birth weight on childhood asthma: a meta-analysis

Version: 3

Date: 19 June 2014

Reviewer: Iman Sharif

Reviewer's report:

Major Compulsory Revisions

Search strategy and inclusion criteria (page 5):
1- Please define "obviously irrelevant abstracts" (or use a different term to describe what you did exactly). Perhaps you can add a statement of "exclusion" criteria if necessary.

2- Since your introduction refers to asthma as a global health problem, please explain why only studies published in English were included in the systematic review.

Results (page 8)
1- The statements in the first paragraph of "exposure, outcome, and effect measures" are confusing. Firstly, it is not clear why the parentheses next to birthweight refer to <2500 vs. >2500 or <2500 vs. 2500-4000. You have already stated in the methods that you dichotomized the outcome at 2500. You also don't need the statements about definition of asthma, or age of the children again in this section.

Discussion:
1) Please delete the reference to "a clear relationship between low birthweight and childhood asthma" (this strong statement is in conflict with your earlier statement of a suggestion that low birthweight increases the risk of asthma; and since this meta-analysis has some significant limitations, I would stay away from the term "clear relationship")

2) The second paragraph is confusing to me. The beginning section (all of the bottom of page 11) is unnecessary information that does not add to interpretation of the results. The only very interesting point in the top of page 12 is that previous studies have also shown that high birthweight is associated with increased asthma risk. (you also need a reference for that statement). I would eliminate the other conversation and focus on this. What do you think the pathophysiology is that explains the relationship between low or high birthweight and development of asthma? While the information is in your paper, I would be more explicit. (for example, children with low-birth weight may be more likely to experience exposure to antibiotics, which has been previously shown to increase the risk of asthma...etc.)
3) The middle paragraph on page 12: The final statement in this paragraph refutes your entire meta-analysis. ("effect of low birth weight on asthma is likely to be relatively weak....) You should clarify in the methods what the studies showing "adjusted RR" were adjusted for. Did those studies adjust for family history, air pollution, etc.? what else did they adjust for?

4) Page 13: "all of the included studies possessed a high quality score": how did you measure the quality of the studies. Please include that detail in the methods, and present the detail regarding the quality rating in the results and in your tables.

5) Page 13 last sentence: I am surprised that low birthweight was included if the definition was either less than 2500 or less than 3000g (i thought your inclusion criteria were that the data conformed to your definition of the exposure)

6) Never close a manuscript with the Limitations paragraph! I suggest you move that paragraph up, to the second paragraph of discussion. Admit your limitations first, then continue with the strengths and implications of your work.

Minor Essential Revisions:

page 5: don't need to say "physician's or doctor's diagnosis" (redundant; can just say "physican's diagnosis")

page 6: please correct statement to "discrepancies were resolved by discussion tp achieve consensus"

page 8: please correct to "the majority of the cohorts (n=6) WERE in Europe...

The middle paragraph on page 12: "If low birthweight can be considered a modifiable risk factor....": please correct the statement to discussion about prevention of low birth weight rather than "reduce birth weight loss"

Discretionary Revisions

**Level of interest:** An article of importance in its field

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.