Reviewer’s report

Title: Factors associated with non-utilization of child immunization in Pakistan: Evidence from the Demographic and Health Survey 2006-07

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Reviewer: Hajo Zeeb

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Further comments on Manuscript by Bugvi et al

The authors have improved the manuscript. Several points, however, still need attention.

Major compulsory revision

1. The authors now cite the WHO definition. According to that definition, 11 vaccines would also constitute complete immunization (... at least three Polio...), which reinforces my point. I agree that this is a matter of definition, but I would be really interested to see if the same results were found if the “complete vaccination cut off” was at 11 instead of 12 doses, which would be an issue for sensitivity analysis. This thought at least needs to enter the discussion.

2. I am worried by the detailed explanation on the coding of vaccination as it seems that a self report by the mother on all 12 vaccination incidents counts as much as a written date of vaccination, as all of them are identically classified as “vaccination received”. Perhaps the authors can supply evidence that maternal report and written evidence on vaccination cards are sufficiently correlated. Again, this needs to be reviewed and should be discussed amongst the limitations. Overall, the authors put much trust in (binary) categorization, which inevitably leads to loss of information. An alternative (or additional) approach could have been to look at factors associated with incremental number of vaccines, perhaps sticking only to those with written evidence.

3. The authors should review the description of their results based on table 2. The statement that 66% of the sample were incompletely vaccinated is correct, but the further statement on the majority of them being female is wrong as the 68.6% refer to the horizontal distribution (row percentage). The correct statement would be that among the 1610 incompletely immunized, the majority were male (849 = 52.7%), or: the proportion of incompletely immunized was slightly higher among female children (68.6%) than among male children (64.0%). Please check if other statements need to be revised. The sentence on birth order includes the comparative “more likely” – than what? Alternatively, just use “most likely”.

4. Overall, I suggest the limitation section needs to be extended. Nevertheless, the overall finding (not new, though) that there is a high proportion of incomplete vaccination remains valid, but looking at inclusion of self-reports, the completeness may even still be overestimated!
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