Reviewer's report

Title: Pesticide use, erythrocyte cholinesterase level and self-reported acute intoxication symptoms among vegetable farmers in Nepal: A Cross-sectional Study

Version: Date: 1 October 2014

Reviewer: Leslie London

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In general, I am happy with the responses of the authors and believed they have addressed the substantive concerns. In particular, I am happy with the way the authors have concluded the paper.

Major Compulsory Revisions: None

Minor Revisions needed:

1. There must be a typo in the amended text at the end of the results. The OR is cited as 1.02 with a confidence interval that does not cross 1.02 (cited as: 95% CI: -2.06; 0.028). In any event, an OR of 1.02 is so miniscule, I would suggest that the authors simply state the finding as no association rather than an association that was not statistically significant. E.g. There was no association between participants reporting at least one acute intoxication symptoms and Q level.

2. In the added text on page 6 in the Methods [section “… The World Health Organisation …”]
   a. There is a typo – “…Some of the clinical representations were difficult for farmer’s to report by farmers…” should read simply “Some of the clinical representations were difficult for farmer’s to report …”
   b. I am not sure I follow what the authors are saying in relation to the WHO criteria for categorising a poisoning. What is meant by ‘clinical representation’? Is that different from a symptom? Or did the authors consider categorising the poisonings and probable and possible as suggested by the WHO classification? I don’t think so and, if not, what is the relevance of the WHO classification here? If you mean that you used the WHO proposal on classifying poisoning (along with the previous Bolivian study) to derive a list of symptoms, adapting your symptom list to take account of local farmer understanding of terms, then that is perhaps the simplest way to explain it. I found the term ‘clinical representation’ too obscure.

3. Age differences: I would suggest the authors put in a little more detail to explain the age differences as they explained in their response to the reviewer. For example, “Though we matched for age group in 5 year age intervals, we still found statistically significant difference in mean age between control and
farmers. So, age was adjusted in further analysis …”

4. In the sentence “Out of 90, 83 farmers (97%) felt sick previous month, and 50% of them visited health care facility. whereas, out of 90 control …”, there are some typos – please correct.

5. The authors, in the discussion, comment on the lack of an association between symptoms and Q level and offer some explanations. Of these explanations, I don’t think the fact that there was a disjuncture in time period between symptom (in the last month) and acetyl cholinesterase level measurement (on the day of data collection) is a candidate for explanation, since exposure that causes depression of AChE would be expected to persist for a month at least. I agree that the problem of exposure misclassification or poor exposure metrics, and self-report (and perhaps lack of study power) could be explanations but not the time frame.

6. I suggest some language edits to the explanation about blood donor procedures and bias “Nepal blood transfusion services follow are as per WHO advocacy and recommendations, which is based on voluntary non-remunerated regular blood donation, which will minimize the any potential bias that the controls could have a lower socio-economic status.”

7. Typo in sentence “… for instance from food consumption or exposure to pesticide spray field…” – do you mean “for instance from food consumption or exposure to pesticides sprayed in fields…”?