Author's response to reviews

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

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**Author's response to reviews:** see over
To,
The Editor

Dear Sir/Madam,
Referring to your letter dated October 27, 2014, we thank you for giving us this opportunity to submit our revised manuscript as well as our point-by-point responses to the reviewers comments.

We were happy to know that both reviewers were pleased with our revised manuscript and also identified some additional comments. Our point-by-point responses to the reviewers follow on the adjoining pages of this letter. The changes in the manuscript are indicated by red color.

We hope that the reviewers and you are satisfied with the manuscript in this revised version and that you will find it suitable for publication in your journal.

Yours sincerely,
Dinesh Neupane, corresponding author

On behalf of other Co-authors
Point-by-point response to the Reviewer 1 (Leslie London)

Minor Revisions

1.1. 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.

Response: Thank you so much for this comment. The association between Q and number of reported symptoms was calculated by using linear regression. So, 1.02 is the coefficient not odds ratio. For more clarification, we only kept Q and deleted level. We mentioned less in the sentence but agree with you it is still confusing. So, - is added before 1.02. The second suggestion is amended as per your suggestion.

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…”
   Response: Amended.

   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
Responses: Revised as per reviewer suggestion. The clinical representation is replaced by symptom. The below sentence is added/revised:

We used WHO clinical symptoms of acute organophosphate and carbamates poisoning along with the previous Bolivian study to derive a list of symptoms [22, 26]. Some of the symptoms were difficult for farmer’s to report and therefore such clinical symptoms have been translated or combined into more understandable terms. The symptoms included in the questionnaire were: nausea, blurred vision, dizziness, skin allergy, excessive salivation, muscle cramp, headache, trembling hands, breathing difficulties, extreme tiredness, vomiting, abdominal pain, loss of appetite, lack of coordination, excessive sweating, difficulty in speaking and dry mouth.

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 …”

Response: The mean age for farmers was 41.8 years and the mean age for control was 38.3 years. While selecting control and farmers we tried to match for five years group. For example, if we had a farmer between the age 35 to 40 years, we chose the control of the same age group. For example, a 35 years of farmer might have 39 years of control. So, we found statistically significant differences between the mean ages. That is why; we have adjusted age (individual) for further analysis particularly in regression analysis. The below sentence is added in the statistical analysis section:

While selecting control and farmer we matched for five years age group (15-19, 20-24 and so on). For example, 35 years of farmer might have 39 years of control. That is why; we found statistically significant difference in mean ages 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.

Response: Amended

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 disjunction 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.

Response: Amended. Time frame was removed.

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

Response: Amended

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…”?

Response: Amended
Point-by-point response to the Reviewer 2 (Kishor Atreya)

1. the false citation
Response: Amended as follows:


2. the way of citation is wrong here. the citation number should be continuos.
Response: Amended

3. Height/weight measurement
Response: Corrected as below:
Height and weight measurement

4. I am confused. The 'total pesticide use' is for the annual total use, or seasonal total use or monthly total use? I hope the present study concentrates on a month before field test; so authors should mention somewhere about this issue.
Response: The total pesticide use was calculated based on the type of pesticides available during the data collection. It was not for the last month and we did not record the volume of pesticides. We only recorded type, composition and WHO classification.

5. Table 2 is not clear, especially on frequency and 'percent'
Response: Table 2 is about ten most common pesticides found during the data collection. It is not the actual volume measurement. The frequency means number of farmers and percentage is number of farmers who stored specific pesticide divided by total number of farmers. For example, 49 farmers (i.e. 76%) were stored Chlorpyriphos 50% and Cypermethrin 5% EC at the time of data collection. We think the table is ok as it is.

6. U represents the "unlikely to represent any acute hazard in normal use"
Response: Amended

7. Four percent
Response: Amended