Author’s response to reviews

Title: Chronic Respiratory Symptoms and Pulmonary Function Status in Ethiopian Agricultural Workers: a Comparative Study

Authors:

Gashaw Woldeamanuel (gashawgaredew05@gmail.com)
Alemu Mingude (alexxpx0809b@gmail.com)
Getachew Yitbarek (getachewyideg@gmail.com)
Mitku Taderegew (mitkumamo@gmail.com)

Version: 1 Date: 08 Feb 2020

Author’s response to reviews:

A point-by-point response letter

PULM-D-19-00826

Chronic Respiratory Symptoms and Pulmonary Function Status in Ethiopian Agricultural Workers: a Comparative Study. Gashaw Garedew Woldeamanuel; Alemu Basazin Mingude; Getachew Yideg Yitbarek; Mitku Mammo Taderegew

We would like to express our heartfelt gratitude to the editor and all reviewers of this manuscript for their constructive comments, which are extremely helpful to improve the quality of this manuscript. Here are point-by-point responses for the comments raised by the editor and reviewers of this manuscript. We have tried to provide a detailed response to each comments and describe the amendments that have been made to the manuscript text. The exact place in the manuscript text where these amendments can be viewed is indicated using sections, page numbers and line numbers. Additionally all changes (grammatical editing and other corrections) to the manuscript are indicated in the manuscript text by highlighting using yellow color.
Response to the Editor comments:

1) Methods section, page 5, line 122: Based on the aim of our study, we have used the recommended and the most commonly used value for each parameter, used in sample size calculation. Accordingly, the statistical power was determined before data collection based on information from previous studies to decide the sample size needed for the current study. By convention, a desired value for statistical power is commonly set at 80% (Reference number 27-29). Thus, taking 80% power (0.841) into account, appropriate sample size was calculated manually during the design stage of this study. Overall, we have used the following double proportion formula to calculate the sample size n:

\[
 n = \left(\frac{Z_{\alpha/2} + Z_{\beta}}{2}\right)^2 \left(\frac{p^-(1-p^-)}{r+1}\right)
\]

Where; “Za/2” is the selected critical value of desired confidence at α/2 (for a confidence level of 95%, α is 0.05 and the critical value is 1.96), Zβ is the critical value at β (for a power of 80%, β is 0.2 and the critical value is 0.84), P1 and P2 are the proportions in the two groups (20% and 8%, respectively), P' = (P1+P2)/2 and r is the ratio of cases to controls (r = 1).

Response to the reviewer reports:

A) Josuel Ora (Reviewer 1):

We would like to express our deepest gratitude to Josuel Ora (Reviewer 1) for your constructive and insightful comments, which are extremely important to improve the quality of this manuscript. We have provided a point-by-point response to your comments as follows:

I: Response to major concerns:

1) Result, Page 8, line 216-217 and table 5: In addition to the actual values of spirometric indices, we have showed the percentage predicted values of those spirometric parameters. Height and weight of the study participants were also showed in table 1.

2) Abstract, page 2, line 47: We have pointed out that obstructive type of impairment showed insignificant difference between the two groups.

3) Result, page 8: As you have mentioned, cough and phlegm showed significant difference between the two groups (as we have mentioned in line 199-200). However, the statement at line 206 refers to the prevalence of respiratory symptoms with respect to duration of workplace exposure among farmers. Accordingly, the prevalence was higher in farmers with duration of exposure ≥15 years than in farmers with duration of exposure <15 years with statistical significant difference for phlegm, shortness of breath and chest tightness. We have pointed out that cough and wheezing showed insignificant differences (line 210-211).
II: Response to minor concerns:

4) Abstract methods, page 2: The statement “Statistical analysis (Chi-square, independent sample t-test, binary logistic regression and linear regression) of the data was done using SPSS version 23” was removed.

5) Background, page 4, line 91-92: We have added the estimated number of Ethiopian farmers in the introduction section of the manuscript.

6) Methods, page 5, Line 111: The control group contained non-agricultural workers (majority of them were office workers and merchants), who are less likely to be exposed for respiratory hazards. Moreover, participants within the control group were interviewed about their workplace exposure to respiratory hazards like dusts, gases, pollens etc and they were not exposed to those hazards. As we have mentioned in the discussion section (line 291-293), all farmers in our study area were involved in different types of agricultural activities such as cultivation, growing, harvesting and processing of crops and also breeding, raising and caring of animals.

B) Jacqueline O'Toole (Reviewer 2):

We would like to express our deepest gratitude to Jacqueline O Toole (Reviewer 2) for your constructive and insightful comments, which are vital to improve this manuscript. We have provided point-by-point responses to your comments as follows:

I: Response to General Comments:

1) We have provided a little more information on the control subjects and their exposure risks (see response 1 below).

II: Response to Minor Essential Comments:

1) Methods, page 5, Line 111: The control group contained non-agricultural workers (majority of them were office workers and merchants), who are less likely to be exposed for respiratory hazards. Moreover, participants within the control group were interviewed about their workplace exposure to respiratory hazards like dusts, gases, pollens etc. and they were not exposed to those hazards. The control subjects were lived and worked in the same villages to the agricultural workers. Thus, the control individuals and agricultural workers were in a similar environment.

2) Any individuals who were former or current smokers were excluded from our study. However, we do not have information about second-hand smoke or in-home smoke exposure and this is included as the limitations of the study (page 11, line 296-298).
3) Table 2: Table 2 is the Chi-Squared results that showed the prevalence of chronic respiratory symptoms in agricultural workers compared with their controls. In this table, we have reported the interval estimates (confidence interval) surrounding the percentage of prevalence for each symptom. However, for ease of understanding by the readers, we have reported only the prevalence and the significance level based on a Chi-Squared result.

4) We have information about the employment status of the control subjects (see response 1 above). However, we do not have information about second-hand smoke or in-home smoke exposure and this is included as the limitations of the study.

III: Response to Minor comments:

1) We have edited the grammatical issues for improvements to the English language of our manuscript. For instance, Line 76: “work leads to a high levels” “a” was deleted. Line 215-216: "were not showed significant difference between...” was modified as "were not significantly different between..."  Line 246 was modified as “…group of farmers did not use personal safety…”

2) Discussion, page 10, Line 255-258: Paragraph of lines 252-265 was edited for more clarification.