Reviewer’s report

Title: Knowledge, attitude and practice related to chemical hazards and personal protective equipment among particleboard workers in Ethiopia: A cross-sectional study

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Reviewer: Pia Markkanen

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Review of the manuscript PUBH-D-18-02689 for BMC Public Health

Title: Knowledge, attitude and practice related to chemical hazards and personal protective equipment among particleboard workers in Ethiopia: A cross-sectional study

General comments

The topic covers significant, internationally interesting information. Studies show that being a full-time/permanent employee is more protective against occupational injuries than being a temporary employee; this manuscript would be a nice addition to support the literature. However, revisions are needed before the manuscript can be published. The revisions I recommend include the following:

* Study participants need to be more clearly explained in Methods. First in Abstract, the paper gives an impression that only production workers are studied. Then, it describes that representatives of managers/administration too were interviewed. Throughout the paper, including in Abstract, please indicate clearly the numbers of both workers and managers studied.

* The development of questionnaires employed for data collection - both for workers and managers -- needs to be more clearly explained in Methods. In Abstract, the paper gives an impression that the study is largely quantitative. Then suddenly, qualitative data is referred on page 6 "In addition to the data collected from the production workers, qualitative information was collected from 13 management personnel. . .." Then, qualitative data comes up again at the end of the Statistics subsection of Methods and at the end of the paper in Discussion (lines 37-44) where authors briefly mention how the questionnaire was developed. A subsection about the development of the questionnaire(s) is needed in Methods, including appropriate citations of KAP articles reviewed to develop the questionnaire. This subsection could also include the types of questions - quantitative and qualitative -- asked in the instruments.

* Please explain the collection and analysis of qualitative data more clearly in Methods. It is not enough to say that "Qualitative data collected by interview and observations was
summarized to provide supplementary information from administrative personnel on the general working environment, chemical hazards and PPE"

* Variable descriptions in figures and tables need to be modified to make them clearer.

* The manuscript does not mention about the role of the employer in improving working conditions in the wood industry. This needs to be added either in the Background or Discussion section.

* In the Background section, I strongly recommend that authors explain the Hierarchy of Controls concept with appropriate citation(s) (for example https://www.cdc.gov/niosh/topics/hierarchy/default.html but there are others). This article covers so much personal protective equipment (PPE) and readers may question why they are promoting something that is "the last resort" in the Hierarchy of Controls pyramid. Please clarify this to readers.

* How do the study results inform about potential interventions for workplace practice for the employer? How does the study inform the larger public policy? Please add this in the Discussion section.

* The Conclusions section needs to be written more clearly.

Specific line-by-line comments

* Page 2, Abstract, Methods. Clarify in here (1) the types of questions asked in the interview(s) (e.g. proportion of fixed-variable quantitative questions vs open-ended qualitative questions, (2) interview study with managers, and (3) how were qualitative data analyzed.

* Page 2, Abstract, Results. How did qualitative data support the quantitative data?

* Page 3, Background, line 45-47. It would be good if authors stated that the International Agency for Research on Cancer (IARC) has evaluated both wood dust and formaldehyde as Group 1 carcinogens to humans. Please cite appropriate IARC sources.

* Page 4, Background, lines 3-5. Clarify with one sentence at the end of the paragraph, who pays coveralls, gloves, and other PPE?

* Page 4, Background, line 27, use the term "United States" instead of US.

* Figure 1, page 6. Not sure whether the map is needed. If yes, please add Addis Ababa in it as it is something that international reader recognize easily. Mention in the figure caption the location of the factories. Very few international readers understand the acronym SNNPR. Please consider replacing the map with good quality photos of some PPE that were relevant in this study.
Table 2, page 11. Variables have not been described clearly. For example, "Know safety rule," what kind of safety rule? It is a government regulation or a factory practice rule? Also, job rotation and breaks may not necessarily reduce chemical hazards but they can certainly reduce chemical exposures. Please check the entire paper whether "exposures" would be a better word choice than "hazards."

Figure 2 and its caption is unclear. Please rewrite. Also, the variables are repetitive. Please remove "know" in front of every variable.

Page 12, Results, Attitudes related to chemical hazards, line 52. "Better attitude" is a judgmental term, please use another term that is less judgmental.

Page 13, Table 4. The caption does not fit with the table content and presented variables. Also, there is a typo on the 5th variable (follow not fellow).

What do they mean about "mouth mask" - is this a mask that covers only the mouth? Earlier, authors mention about "face mask" (p.10, line 57). Please use terms consistently. A photo would be helpful.

Page 16, Discussion, line 23. Remove the word "their" in front of chemical hazards and modify the sentence "...more interested in controlling exposures from hazardous chemicals than the temporary workers."

Page 16, Discussion, line 36. What do authors mean when saying "start their jobs as helpers". What does "helper" comprise? Do they mean starting the jobs by assisting permanently hired workers. Please give an example.

Page 19, Discussion, lines 37-39. At minimum, citations are needed for the sentence "The questionnaire was developed by reviewing KAP articles and a pre-test was done before data collection. Please cite all KAP articles reviewed. Please see my earlier comment about developing a subsection about the development of the questionnaire(s).

Page 19, Discussion, lines 54-56. Please modify the sentence so it reads "Study participants can either disclose or hide the information." Because both workers and management representatives can hide and disclose information - not only workers.

Page 20, Conclusion. Please rewrite this section to make it briefer and clearer. Please avoid judgmental terms such as "better attitude" or "better knowledge".

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.
Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

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I recommend additional statistical review

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Needs some language corrections before being published

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