

Review of: "Prevalence of visual impairment and associated factors among welders in West Shewa Zone Oromia Region"

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Potential competing interests: No potential competing interests to declare.

Overall, I found this to be a well-written manuscript of an interesting area of investigation. Because other studies of this nature have been conducted in other countries, the impact of the article is likely to be higher in Ethiopia than at the international level. I believe the finding that a high proportion of the welders who took part had vision impairment, and that this was associated with specific workplace behaviours, is of interest to local ophthalmic services, public health, and occupational health stakeholders. I have made some suggestions which I believe would improve comprehension and clarity.

Major points

Introduction: The authors point out that welders are at high risk of eye injury and that welders specifically are not often singled out in general studies of vision impairment in Ethiopia. However, the rationale for the study would be better supported if the authors could demonstrate what proportion of vision impairments are thought to result from workplace trauma or injury. Could the authors find any estimates of that figure in the literature? If they could, that would be a useful addition to the introduction.

Methods and materials / Study setting and design and Study participants and sample size: You state that the West Shewa zone contains 22 woredas, but then say only five woreda towns were chosen for sampling. Please clarify which woreda towns were selected for this study and why. If it was not a random sample, perhaps the authors could change the title to "Prevalence of visual impairment and associated factors among welders **in five towns in** the West Shewa Zone, Oromia Region," to reflect the fact that this was not a representative sample of the Zone.

Methods and materials / Study setting and design and Study participants and sample size: You have stated that all welders in five towns were eligible to take part. It would be good to know how you selected individuals to take part from this pool of potential participants. For example, were all welders invited to take part? Were the workplaces visited directly for recruitment? Did you measure how many welders were working in the woreda towns at the time of recruitment? There is a linked comment below about the response rate.

Methods and materials / Data collection procedures and tools: "Socio-demographic, behavioral, environmental, clinical, and worksite-related data of the participants were collected using pre-tested structured questionnaires. The data collection tool was adopted from the World Health Organization (WHO) and related different literature." You state that a WHO tool was adapted using related literature and was then pre-tested. Please could you expand on the methods

regarding questionnaire development? It would be good to know how and why the WHO tool was adapted, how it was pre-tested, and how it was deemed appropriate (or better) than existing tools. If this process has already been documented, a citation would suffice.

Methods and materials / Data collection procedures and tools: “The variables in the bi-variable analysis with $p < 0.2$ were entered into a multivariable logistic regression model.” Did the authors check for clustering at the woreda town level? If so, it would be good to know whether there was evidence of clustering and whether this was accounted for in the multivariable model. Did the authors examine any relationship between vision impairment and age in the study sample, and if so, did they consider including age in the model a priori to account for that?

Results / Socio-demographic characteristics of study participants: “A total of 634 welders were included in this study, yielding about a 97.1% response rate.” Is this 97% of the people who were invited to take part, or is this 97% of all welders in the sampling frame? This is linked to the comment about how you recruited welders. Also, do you have a record of how many workplaces were in the woreda towns, and how many were represented in your sample?

Results / Table 5: The left eye/right eye distinction is, in my opinion, less interesting than the monocular/binocular VI. Please restructure the table to reflect monocular and binocular VI at the individual level (the severity can be categorised according to the vision impairment in the better eye in the binocular column).

Discussion: The study has no control population, so it isn't clear from this study whether these welders are facing a disproportionate risk of vision impairment compared to the general population, or workers in other professions. Please add a sentence to acknowledge this in the discussion (this was not an aim of the study, so I do not see this as a limitation, but I believe it is important to mention to ensure non-specialist readers do not misinterpret the findings).

Discussion / Limitations of the study: First, it is not possible to tell from the methods whether this sample is likely to be representative of a wider population, so although the prevalence estimate is accurate for this particular population, it isn't clear how generalisable it is. If the sampling wasn't random, a further limitation could be the lack of generalisability. Second, you also rely on self-reported metrics of workplace behaviours, rather than independently reported or observed metrics, which might lead to some inaccuracies (such as bias from people saying they use PPE regularly when they don't for fear of repercussions).

Discussion / Limitations of the study: “The other limitation of this study was that the study used only a Snellen chart for screening, which only diagnosed the status of the current visual status of the welders. So, it needs further investigation.” The meaning of this part isn't clear to me, please rephrase. You could be referring to the limitation that the cause of vision impairment wasn't recorded in this study, which weakens the ability to link workplace behaviours and visual acuity. This would be an important limitation to highlight.

Minor points

Changing the phrase “visual impairment” to “vision impairment” throughout the manuscript would bring the terminology in line with other publications on the topic. The change in terminology is necessary to indicate that conditions other than loss

of visual acuity can impair vision.

In my opinion, the first paragraph of the introduction can be removed. I don't think the concept of vision impairment needs to be introduced to the potential audience for this paper.

Final paragraph of the introduction: "Even though the majority of visual impairment studies have been conducted in Ethiopia, VI among welders has been given little attention." Please rephrase to avoid the implication that the majority of vision impairment studies worldwide have been conducted in Ethiopia (for example, "Even though many studies of vision impairment have been conducted in Ethiopia, VI among welders has been given little attention despite the disproportionate risk they face compared to other professions")

Methods and materials / Study setting and design: "The West Shewa zone includes 22 districts." I would suggest changing "districts" to "woredas" here to ensure consistency with the rest of the manuscript.

Table 3: Please make it clear in the caption for this table that these are *self-reported* estimates of illness.

Discussion: There are several citations in the discussion which aren't hyperlinked to the reference list, please ask the editorial staff to update.

Spelling, punctuation, and grammar suggestions

I found the punctuation and grammar generally very good, but there are some minor issues, such as capitalising letters in the middle of sentences, unnecessary hyphens (e.g., "table-1"), and inconsistent use of symbols/words (e.g., "5.4 percent" instead of "5.4%"). Please review and correct.

You begin using the abbreviation VI in the introduction, but it is not defined at first use and is not used consistently – I suggest reviewing the manuscript to ensure abbreviation use is in line with journal policy (perhaps the publisher's editorial team could help with this).