Peer Review Report

Review Report on Understanding the Risk Factors, Burden, and Interventions for Chronic Respiratory Diseases in Low- and Middle-Income Countries: A Scoping Review

Review, Public Health Rev

Reviewer: Nino Kuenzli
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EVALUATION

Q 1 **Please summarize the main theme of the review.**

see below

Q 2 **Please highlight the limitations and strengths.**

see below

Q 3 **Please provide your detailed review report to the authors, structured in major and minor comments.**

The paper is well written, in proper fluid language. The focus on studies from LMIC is not really a limitation but interesting. The 3 objectives are well formulate and all of them highlight the focus on climate change related factors.

The major weakness of the paper – in particular of the Discussion is though the insufficient – partly lack of the claimed focus on climate change related factors. Related parts are just statements, without outlining the causal links and discussing the strength and relevance of those causal links – thus, it reads like a “climate change mantra” rather than a critical appraisal of the link and relevance of climate change and the causes of respiratory health in LMIC.

The review identifies many causes of COPD and asthma in LMIC. Figure 4 is a very good overview in 4 useful categories. What is missing in the Discussion (and partly in the presentation of the results) is the assessment, for each and every of those factors listed in Figure 4, whether and how they relate to climate, climate change and possibly climate change mitigation or adaptation. What is the causal link? Is it a direct one? Or through some indirect link? Is that link established? Is it strong, weak, absent?
Some factors have established links – e.g. many if not all listed under “environmental” in Figure 4, but those links are anything but “linear”. Indeed, the causal links to climate change are in some cases extremely complex, resulting in victims and beneficiaries of climate change. Other very important factors – e.g. cigarette smoking – are societal, business, and policy challenges mostly if not entirely disconnected from climate change issues. Others such a (fossil) fuel consumption have important causal links with both the climate and health. In sum, the Objectives call for causal diagrams of the linking between each factor, respiratory health and climate or climate change.

A few more comments related to the Discussion paragraphs:

• Occupational exposure such as in coal mining and other fossil fuel related jobs (e.g. charcoal) have a relevant link to climate change policies. Other important jobs – e.g. pesticide use – are far less related to or dependent on climate and climate change policies.

• Although climate factors are relevant for pollution and health, climate change does not necessarily "worsen" these factors everywhere. This needs a balanced discussion.

• Improving cookstoves are attractive programs unrelated to climate change

• Line 329-341 is a very well written paragraph describing in fact the non-linear relationships and complexities between factors that are possibly changing as climate changes and respiratory health. These complexities need to be highlighted all through the discussion in making the causal link or the lack of this link explicit.

• In the 342-349 paragraph on nutrients, discussing the complexity of the link has been referred to. It would be nice to know – if there is a literature – whether, all in all, globally (or at least in LMIC), the "worsening" or the "protection" will be more dominant under a climate change scenario versus no further change – or whether non-climate factors could play a far more dominant role (including wars).

• The next paragraph (l350ff) starts with reference to controlling air pollution. However, this theme is not further discussed despite the fact that the one of the best established links relevant for this paper is indeed the one between the shared causes of climate change relevant fossil fuel burning and pollution. Many clean air strategies (yes, not all) result not only in lower air pollution but also less green house gases. E.g. electric / solar cooking would reduce combustion related COPD and green house gas emissions. The cookstove assessment needs to be critically expanded. Indeed, some cookstove strategies are entirely disconnected from clean air and climate change policies: e.g., just adding a chimney to have the particles in the community "only" instead of the kitchen is a very questionable "not in my backyard" approach. The community level ambient pollution remains bad and affects everybody – and green house gases are not at all reduced.

• Instead the rest of the paragraph (l350f) is much about monitoring lung function. Though fine to have such a discussion, thi is entirely disconnected from climate change – and this should be emphasized. Yes, there are many very important reasons that are entirely independent of climate change that cause the burden and limit the prevention of respiratory diseases in LMIC. Thus, these causes are also opportunities as it does not require climate change policies per se but other solutions, including abatement of the tobacco epidemic the tobacco industry makes all efforts to spread in LMIC as they become a bit richer (rich enough to make them addicting in selling single cigarettes instead of too expensive full packages…

Conclusion: see above: it reads grossly overstated "… with a focus on the impact of climate change" – see above. "It emphasizes the urgent need379
for interventions that are tailored to the environmental and socio-economic context. The interconnection380 between increased global warming, air pollution, occupational hazards, and socio-economic challenges381 may exacerbate these respiratory diseases" read like a political or activist statement with no direct underpinnings shown in the review.

Once you have gone through the causal exercise proposed above one can anticipate a very different conclusion. Yes, for some factors climate change matters, climate mitigation matters too (for respiratory health), while for others the link is very weak, unknown or poorly established or known to be of no relevance what so ever. From a respiratory health management perspective this is very important indeed! One could misinterpret the current "mantra" like a call for "climate change policies" to resolve respiratory health issues although LMIC would have a wide array of non-climate actions that will result in effective prevention of respiratory diseases. Interestingly, Table 2 focuses on this, though, again, it is not at all made explicit where climate plays a role and where not at all. Table 2, as it stands now, could be in a supplement, given the prime focus of the paper. Instead some Table summarizing the (degree of the) causal link of each factor with climate, climate change and/or climate adaptation/mitigation would be most important for this review.

PLEASE COMMENT

Q 4 **Does the reference list cover the relevant literature adequately and in an unbiased manner?**

see above – some literature for the link with climate change might be missing.

Q 5 **Does this manuscript refer only to published data? (unpublished data is not allowed for Reviews)**

Yes.

Q 6 **Does the manuscript cover the issue in an objective and analytical manner**

No.

Q 7 **Was a review on the issue published in the past 12 months?**

No.

Q 8 **Does the review have international or global implications?**

yes

Q 9 **Is the title appropriate, concise, attractive?**

the title is not ideal "... with climate change implications" reads as if the discussed issues have some impact on the climate – if anything it is the other way round....

Q 10 **Are the keywords appropriate?**

yes

Q 11 **Is the English language of sufficient quality?**

yes

Q 12 **Is the quality of the figures and tables satisfactory?**

No.

QUALITY ASSESSMENT

Q 13 **Quality of generalization and summary**

Q 14 **Significance to the field**

Q 15 **Interest to a general audience**

Q 16 **Quality of the writing**

REVISION LEVEL

Q 17 **Please take a decision based on your comments:**

Major revisions.