Reviewer’s report

Title: How to characterize the public health workforce based on essential public health operations? Environmental public health workers in the Netherlands as an example

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Reviewer: Vesna VBM Bjegovic-Mikanovic

Reviewer's report:

Reviewer:
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Review:

The EPHOs adopted by WHO – Regional Office for Europe are a very important conceptual step forward. The authors attempt to operationalise them for the subject area of environmental public health in a national setting here the Netherlands. The process to make the EPHOs functional within the European public health systems is only in its beginning; therefore the initiative presented here is most welcome. However, some questions remain regarding this paper.

Major Compulsory Revisions:

1) Definitions of terminology used should be provided in the introduction / background. Definition of “Environmental Public Health” should be at least discussed. The background is predominantly based on US references, out of 17 cited references, only 4 are European!

2) The all-inclusive approach used here is questionable as it generated in the peripheral group only 17 additional questionnaires with a participation of 28%. It might be preferable to exclude the peripheral sample from the analysis. Likewise a presentation of EPHOs specified for Environmental Public Health in the NL should be arranged also for degrees; only 2% of the sample does not have a university degree (3 categories thereof).

3) Recruitment of participants needs to be explained better. The first mailing list includes “all workers of the departments of environmental public health of the local public health services and their direct network contacts”. International readers would welcome information about number of local public health services and their organization in NL, as well as explanation of “their direct network contacts” including numbers. The second mailing list also needs clarification: definitions and numbers. More specific selection criteria should be presented. International readers would welcome information about number of specific research institutes and departments of public health of universities in NL, and how they relate to environmental public health.
4) The authors defined the EPHOs in a very broad way (table 1) arguing that their wording describes the situation in the NL. If that is so international comparison becomes difficult, against the obvious intentions of the authors. For international comparison it would have been helpful to refer to the list of competences developed by ASPHER adopted by WHO Europe for the EPHOs. ASPHER list of competence are published by Birt C and Foldspang A. It is available in the publication: European Core Competences for Public Health Professionals (ECCPHP). ASPHER’s European Public Health Core Competences Programme. ASPHER Publication No. 5. Brussels: ASPHER, 2011. 

http://www.aspher.org/repository/index.php?get_action=open_file&repository_id=0&file=%2FASPHER%2FPublic%20Health%20Competences%2FEPHCCP_ECC_PH-Professionals.pdf. An example of the use of ASPHER competences related to EPHOs is provided in the 2 publications on the ASPHER Survey among Schools of Public Health in the European Region, published in the Int J Public Health in 2013 and 2014 (Bjegovic-Mikanovic et al., Vukovic et al.). The use of these competences to analyse the representation of environmental EPHOs drawing from the adopted competences would make the approach used much stronger and comparable. Furthermore, it is not clear to me how EPHO 8 translates to 2 words: “quality assurance” when it refers to “Assuring sustainable organizational structures and financing” and contains other recommendations (in EPHO 8 “quality” is not mentioned and could be considered only as structural variable); or EPHO 9 to R&D when it relates to “Advocacy, communication and social mobilization for health”. Similar observation is related to EPHO 10, described in the article as “Regional support and consultation”, while it refers to “Advancing public health research to inform policy and practice”. In this context, Table 1 needs corrections.

5) Instead of examples of questionnaire items given in Table 2, it would be necessary to give an example of questions related to EPHOs and environmental public health. Table 1 is not enough to understand how authors relate elements / activities of EPHOs to specific environmental public health activities. In Line 85-86 authors stated: “To facilitate completing this part of the questionnaire examples of daily environmental public health practice were added to each of the EPHOs”. It would be necessary to provide these examples!

6) The selection of a level of 0.5 hours per week seems to be very modest (to generate a sufficient number of respondents?); is it likely at this level to maintain proficiency?

7) The response rate is usually a part of method and not of results.

8) International readers would welcome to know at least average number of hours per week spent on environmental public health activities (mean ± SD) and also distribution of hours per EPHOs.

9) The percentage of 27% in the abstract is not reflected in the results (lines 256-260).

10) In the discussion underestimation is discussed but overestimation is equally possible especially with reference to the peripheral sample (with response rate 28%) and because of self declaration and imprecise definitions?
11) Therefore it might be preferable to exclude the peripheral sample from the analysis. Another terminological issue in discussion: Do the authors mean efficacy or rather effectiveness (line 288)?

Recommendation: Major revision discussing especially issue No 4).

Minor Essential Revisions:

1. In abstract 472 environmental public health workers are mentioned as invited, while in method summing up the first and the second list is giving 473.
2. “Health manpower” is listed as a keyword despite it is never used in the article. It should be deleted.
3. Line 41: Textbox 1 is missing. Maybe authors refer to Table ?
4. Line 60: What about definition by degree? Much sharper and more relevant re EPHOs! Should be discussed at least, here mix of everything in terms of self declaration.
5. Line 146: the total capacity is 75,5 FTEs, while in the line 202, the total capacity is 74,5 FTEs.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.