Review and rebuttal of the paper

Health effects of the 2021 flooding in Limburg
Anniek E. E. de Jong, Janko van Beek, Hans Korving, Marion Koopmans, Eline Boelee
Editor handling the paper: Hans de Moel
- Title: of the 2021 flooding
- Sentence 40: insert ‘water storage’ before buffers
- Sentence 46: Detail, check number notations; 50,000?
- Sentence 59/60 Figure 1: a similar figure is also in the other papers of this special issue, leave out?
- Sentence 61: There are also other papers, like this one https://pubmed.ncbi.nlm.nih.gov/15958425/ aAdd?
- Sentence 64: days to weeks?
- Sentence 113-126: Consider to move these parts to chapter 2, there is some overlap now.
- Sentence 166: information on what? Water quality?
- Sentence 191: insert ‘2021’ between July and floods
- Sentence 238: ‘The period during which’ [instead of ‘when the floods’]
- Sentence 249: insert ‘(partial) flooding and’ between with and evacuations
- Sentence 251: In the discussion, flooding was relatively local (near river) and only affected a relatively small area of these larger cities. Whereas it would
- Sentence 252 Figure 4: From your expertise on covid, could you indicate how long after a „superspreading” event you would see the signal in the general stats? What is the time lag, days, weeks?
- Sentence 289: Indicate, dunea was not directly affected by flooding?
- Sentence 327: change ‘floods added to’ into ‘floods is expected to add to’
- Sentence 347 - 369: Add a few sentences to put this in international context, some papers have come out indicating the potential links / compounding of floods and covid. Would be good to add one or two sentences on the international context https://www.sciencedirect.com/science/article/pii/S0048969720360204 https://wires.onlinelibrary.wiley.com/doi/full/10.1002/wat2.1509
- Sentence 348: risk ratio instead of risk ration
- Sentence 348: insert after Groningen (see fig. **) 
- Sentence 350: insert ‘in the period’ between cases and after
- Sentence 351: ‘The flooded municipality Valkenburg’ instead of ‘Flooded Valkenburg’
- Sentence 351-355: In discussion, add the point that floods affected a large part of Valkenburg (surface / population), whereas a relatively small part of Venlo, Roermond etc. That would require a more in depth analysis of flood affected population etc. etc. this could be for future work

- Sentence 359/360: I am not an expert, but my understanding is that healthcare facilities and hospitals act „at the end of the chain” so have limited effect on initial spread

- Sentence 401/402: I know Wageningen has monitored some sediments, sludge etc. in the flooded areas (https://twitter.com/SLM_WUR/status/1420641935828606976) not sure if there have been publications on this topic.
As general feedback, I miss cohesion between the different parts of this manuscript. It feels as though the authors had three different pieces of information, which were pasted together in this article, but without a clearly defined overall objective or shared methodology. For each of the components, the methods are not or not clearly described, which makes the interpretation of the findings very difficult. Specific comments on the different sections are listed below.

Methodology/Results
- The questionnaire was sent to MDs, but no information on sampling design. Were all GPs in the mentioned region invited to participate, or only a selection? What was the response rate?

- I don’t have access to the questionnaire, but it seems that it consists of a qualitative assessment of the perceived increase in symptoms. This is not a valid method to make a quantitative assessment of the situation, as it is driven by perception (of people who were largely also victims of the event). More correct would be to ask MDs to assess any reported symptoms, as coded by ICPC. Or to change the wording in the article and figures (e.g. figure 3), to refer to ‘perceived’ changes in health complaints, opposed to just changes in health complaints.

- There was no control group, so it is impossible to assess whether any increase in psychosocial symptoms related to this particular event. As stated by the authors, the events coincided with an overall increase in COVID cases, which is also a trigger for mental health impact.

- The following sentence is included in the results, but it is not clear whether this was based on the study results or whether this is just a hypothesis: “For the elderly, the memory of previous floods may cause extra stress, and sometimes the social network has disappeared because friends died, and children no longer live in the area and can therefore not offer care.”

- As seen in Figure 4, COVID-19 cases were already clearly increasing before the flood event, which makes it less likely that it is related. How the comparison between provinces was performed is not clearly described by the authors, and is not valid without taking into consideration other circumstances (e.g. vaccination rate in different provinces).

- The methodology for the collection of information on water quality and drinking water supply is not very clear. Was a specific tool or questionnaire used for this? It seems like anecdotal information was provided by each of the three stations, and I’m not sure if such information is suitable for a scientific publication. Also for qualitative research, a specific protocol is expected to be followed in terms of data collection and analysis.

- As the title of the manuscript is on health effects, and the section on water quality and drinking water did not measure an impact on health (but on water quality, which finally did not have an impact on health), the section also does not seem immediately related to the rest of the manuscript.
Discussion

- The first part of the discussion refers mainly to news sources, which does not seem to fit well with a scientific article. For example, this sentence seems to refer to anecdotal (and unverified) information: “For instance, a patient from an elderly home in Valkenburg died the day after the evacuation possibly due to the stress of the event and the evacuation, while another patient, with a history of psychological problems, committed suicide (Nieuwkoop, 2021).” The same applies to information obtained from RTL Nieuws.