

Response Letter

Dear Mr. Ravan,

thank you for the positive evaluation of our manuscript and the valuable comments, which enabled us to further improve it. We address below the comments raised (*in italics*) and explain in our detailed point-by-point response how we addressed these in a revised version of our manuscript (blue).

Kind regards on behalf of all authors

Marie-Luise Zenker

Referee comment 1-RC1

With the research article 'Always on My Mind: Indications of Post-Traumatic Stress Disorder Among Those Affected by the 2021 Flood Event in the Ahr Valley, Germany ', the authors fill a critical and timely knowledge gap concerning the mental health implications following devastating flood disasters. They use a household-level survey and application of binary logistic regression analyses in an exploratory approach to investigate risk and protective factors of experiences PTSD after major flood disasters, using the recent event that took place in the Ahr Valley in July 2021 as an example. The applied methods is grounded in literature and comprehensively explained. The results along with limitations where applicable are well presented and discussed.

Given the manuscript's comprehensive insights, alongside the relevance and significance of its findings presented in a clear, concise, and well-organized manner, I believe it merits publication without further revisions. It offers valuable insights that are likely to influence public health policies and practices concerning disaster management and post-event mental health support.

Thank you for taking the time and effort to review the manuscript. We are very happy with the positive evaluation, which does not propose further revisions.

Kind regards on behalf of all authors,

Marie-Luise Zenker

Referee comment 2-RC2

Thank you for taking the time and effort to review the manuscript. We sincerely appreciate all valuable comments and suggestions, which helped us to improve our manuscript.

Kind regards on behalf of all authors,

Marie-Luise Zenker

1. *"Ahr Valley" could be clarified as "the Ahr Valley" for consistency and clarity.*

The term "the Ahr Valley" is consistently implemented throughout the revised manuscript.

2. In "i.e., in June/July 2022", consider replacing "i.e." with "**specifically**", as it's not introducing an alternative term but specifying the timeframe.

We thank you for this comment. We changed the sentence for clarity according to the suggestion.

3. "The survey utilized a short epidemiological screening scale to determine the prevalence of people who show indications of suffering from post-traumatic stress disorder (PTSD)." - This sentence could be rephrased for clarity and flow: "**The survey employed a short epidemiological screening scale to assess the prevalence of individuals showing indications of post-traumatic stress disorder (PTSD).**"

We appreciate the suggestion and changed the sentence accordingly.

4. Consider specifying the name or source of the screening scale used for transparency and reproducibility of the study.

Thank you for this comment. The epidemiological short-screening scale we used has no generally accepted name or abbreviation, and since it is unusual/unpractical to include references in the abstract, we prefer not to do so. In the method section of our manuscript, we explain which screening tool we used exactly.

For clarity, we rephrased a sentence in section 2.3.1 (line 168-171): „To detect indications of post-traumatic stress disorder (PTSD) among affected residents, we used the German short epidemiological screening scale by Siegrist and Maercker (2010). It is based on the scale developed by Breslau et al. (1999), which is closely in line with the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (Siegrist and Maercker, 2010; Breslau et al., 1999; American Psychiatric Association, 1994)."

5. In "Our findings reveal significant mental health issues one year after the flood event: 28.2% of the respondents show indications of PTSD." - Consider rephrasing for clarity: "**Our findings indicate significant mental health issues one year after the flood event, with 28.2% of respondents showing indications of PTSD.**"

Thank you for this comment. We changed the sentence according to the suggestion.

6. "Furthermore, this study has uncovered essential risk factors for developing indications of PTSD after flooding" - Consider revising for clarity and conciseness: "**Additionally, the study identified key risk factors associated with developing PTSD symptoms following flooding.**"

We changed the sentence as suggested.

7. "As a result, care methods should be adapted to tackle the prevalence and risk factors connected with PTSD in the affected population." - Consider specifying what specific adaptations are recommended for care methods.

Thank you for this comment. We included an example related to our findings in line 24: "As a result, care methods should be adapted to tackle the prevalence and risk factors connected with PTSD in the affected population, **e.g., by providing targeted aftercare for individuals who were injured or became sick during the flood event.**"

Editor comment

Dear authors,

Thank you for addressing the comments from Referee #1 and Referee #2. Please submit a revised manuscript highlighting your modifications. Please also consider the following comments and suggestions:

Please avoid absolute statements such as "This is the first study in Germany to examine the impact of a major flood event on mental health, expanding on existing knowledge," as there are other studies on this subject in Germany, e.g., DOI 10.3389/fpubh.2023.1210072.

Thank you for this comment. We refrain from using this sentence and have deleted it.

Please elaborate further on "Finally, we propose integrating the mental health-related impacts of floods into flood risk management." Are you suggesting integration into Flood Risk Management (FRM) in general, or specifically within the context of Germany? Please clarify the gaps you identified in FRM, either generally or specifically within Germany, that justify this recommendation. Are you suggesting for a rethinking of current approaches or emphasizing the need for adequate incorporation of mental health considerations into FRM frameworks.

In the introduction (lines 96 to 103), we mentioned that selected countries have already established frameworks to address the social and psychological impacts of disasters and flooding. In the conclusion, the intention was to pick up on this when highlighting the importance of our findings. However, following the editor's comment, we rephrased the sentence for clarity and added some information to line 519 to 526:

"Finally, we propose integrating the long-term mental health-related impacts of floods into overall flood risk management, as it is an essential part of the recovery process following a flood, yet often overlooked in many regions of the world (see section 1 for selected countries with a framework). Developing a framework to support the mental health of those impacted by floods can help in building more resilient communities. Furthermore, while German Flood Risk Management includes the term "avoidance and reduction of adverse effects on human health," it lacks further explanation and recommendations. This study provides information to contribute to such a framework by highlighting the prevalence and risk factors associated with PTSD following the 2021 flood in the Ahr Valley, Germany."

Additionally, please include the limitations of the research, e.g. in the Conclusion section.

We fully agree that acknowledging limitations is part of a scientific paper. Therefore, we integrated them into the discussion section; however, not in a separate subsection, e.g. in lines:

- 317 to 326 "It is important to note that we were unable to filter out individuals who may have already been experiencing symptoms of PTSD before the flooding since we did not gather information on their pre-flood mental health status. However, information on respondents' pre-existing health status before the disaster can be crucial in determining the exact impacts of the flooding event, because physical impairments and chronic health conditions are known to influence mental health problems (Galea et al., 2005; Tunstall et al., 2006). Additionally, the still ongoing COVID-19 pandemic and the war in Ukraine may have also had an impact on the prevalence of PTSD. Further, self-selection bias is possible, since those affected and randomly selected could voluntarily participate in the survey. Since individuals with severe mental health issues may have chosen not to complete the survey, this could result in an underestimation of the true prevalence of

PTSD one year after the flooding event. However, we took steps in the survey introduction to inform participants about the possibility of re-traumatization. We also recommended that only those who felt comfortable participating in the survey.”

- 379 to 384 “Assuming the respondents related the question to the event seems reasonable since the questions before and after also referred to it. However, it cannot be completely ruled out that the question was misunderstood, and the illness referred to in the answer was a diagnosed mental health disorder due to the flood event prior to the survey. Therefore, we have decided to keep it in the model and investigate this question more thoroughly in the future. Nevertheless, becoming seriously injured during a flooding event is solid, tangible evidence a person can feel and see, and matches the definition of PTSD according to the DSM-IV (American Psychiatric Association, 1994).”
- 420 to 421” However, due to the damage scale used in this survey, the extent of financial losses was not determined precisely, leading to a small variance in the data sample.”

We believe that keeping the limitations in place is valuable as they provide context to our findings and ensure the understandability of the results.