Reviewer's report

Title: Psychosocial impact of the summer 2007 floods in England

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Reviewer: Pierre Verger

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This article presents a health assessment that was implemented after the 2007 flood in England to evaluate its psycho-social consequences and the associated risk factors.

It is an interesting example of investigation that can be carried out after such an environmental emergency to guide the public health authorities in managing its consequences. This article suffers however from several major limitations that should be addressed before consideration for publication.

Major compulsory revisions

Summary

1. The sentence “but little is known about risk factors and ways of increasing resilience of communities to such emergencies” should be modified: many previous studies have addressed risk factors for psychosocial consequences of environmental disasters; moreover, the following article does not focus directly on community resilience factors: that is characteristics and resources of a community that would help them to recover more efficiently from an environmental emergency. Nor does it addresses these factors at the individual level.

2. The objectives of the work should be presented before the method section which in turn should be more precise regarding the design and methodology used.

Introduction

3. The introduction section should present in more details what is already known about the psychological effects of floods or environmental disasters and their individual and/or community risk factors.

4. The introduction should be written keeping in mind that the article is proposed to an international audience: a description of the 2007 floods in England (their characteristics, speed of occurrence, time duration, number of exposed population, associated mortality and morbidity, economic cost..., socio-economic characteristics of the exposed areas) as well as explanations about the Pitt Review would be welcome.

5. The objectives should be more clearly and precisely defined. For example, it is not clear from the introduction section whether the authors intended to present prevalence rates of mental health outcomes after the floods or not and on which
mental health aspects and which risk factors they focus.

Methods

6. What were the inclusion and exclusion criteria (e.g. any age limitations?)?
7. How were participants selected in each household?
8. What is the size of the target population? Why were the South Yorkshire and Worcestershire selected for the study: were these areas the mostly exposed by the floods? How many villages or cities in these areas? Why were these areas investigated at two different times?
9. What were the aims of the flooded properties registries: indemnification only or epidemiological purpose? In all, how many flooded properties were registered? What are the corresponding adults and children population numbers?
10. For what reason did the authors randomly select other addresses? What was/were the sampling rate(s) in the two areas? Did the authors intend to include non-exposed populations?
11. Data collection: the authors used several ways to collect the data: for what reason? They should state in this section –rather than in the result section– that the subjects were offered the choice between these methods. The use of these different data collection methods raises a question: did this have any influence on the evaluation of mental health outcomes: it is admitted that data quality varies between self-reported questionnaires and telephone or face-o-face interviews; moreover, this different methods might have an impact on the scores calculated with dimensional instruments used to evaluate mental health outcomes (see for example McHorney 1994 and Perkins JJ 1998, about SF36).
12. Regarding the exposure variables, it would have been interesting to collect information on circumstances and duration of evacuation, and various aspects of exposure to floods such as: medical consultation or hospitalization for a personal injury or disease consecutive to the flood, close relationship injured, witnessing drowning, participating in rescue teams, and problems with insurers… The authors should clarify the reasons why such information was not collected.
13. The absence of data about psychiatric history is an important limitation the consequences of which should be better discussed.
14. Regarding the variable “presence of a preexisting medical condition”, the author should explain before the statistical section how they collected the corresponding information. Same question for the variable “disruption to essential services” (what services were included in the question? Did the authors collect any information about the duration of the disruption, was any information available on this point from objective or external sources).
15. The authors should explain more clearly that they tested two different models and what strategy of inclusion of the explicative variables they followed after the univariate step. The analyses should be adjusted on the “data collection modes” to adjust on the potential differences introduced by using different data collection modes.
Results section

16. Did the response rate vary between those who had registered in the flooded properties registry and those who had been randomly selected? This could shed light on potential participation bias.

Discussion section

17. Page 9, discussion section: the first 5 lines of the first paragraph should be transferred to the introduction section.

18. Page 9, discussion section, line 7: the sentence “to quantify the psychosocial impact and identify factors that might be targeted to increase community resilience to emergencies” should appear for the first time in the introduction section, not in the discussion section; this sentence is misleading to the opinion of the reviewer: 1) data was collected at individual level, not community level; 2) factors studied were related to the effects of the floods (including in terms of the disruption of services); data on potential resources and characteristics directly related to resilience were not collected, both at individual and community level (e.g. coping strategies (individual); level of preparedness regarding flood management, social support resources available at community level...).

19. Page 10, lines 5-9: Problems with insurers are not evaluated in this study...

20. Page 10, lines 2-4: the author should mention that responses of participants to the exposure variable were apparently different between the two areas (although statistical tests are not presented): disentangling the effects of time elapsed since the beginning of the flood and those of exposure levels differences between the two areas appears difficult.

21. Last paragraph of page 10 and first paragraph of page 11: the reviewer wonders whether the calculation of cases attributable is appropriate in the present case:
- the study is cross-sectional which prevents any causal inference;
- it has low response rates, and selection bias is probable (with consequences on relative risks);
- important factors (potential confounding factors) such as previous history of psychiatric problems, individual socio-economic status as well as modes of data collection are not taken into account in the analyses....

Another reason that should be discussed with a statistical expert lies in the fact that odds ratio are inappropriate indicators of relative risks when the prevalence of the studied outcomes is relatively high in the general population: this is the case for at least psychological distress, anxiety, and depression: in these situations, odds ratio may overestimate relative risks (see Barros and Hirakata, 2003, BMC Medical Research Methodology).

22. Page 11. Given the very low response rates in this study --as the authors recognize -- they should compare sociodemographic characteristics of their sample to those of the target population, if possible.

23. Table 3: why are OR not adjusted on area, as in the previous table?
Minor essential revisions
1. The term “probable” should be systematically used regarding anxiety, depression and PTSD throughout the paper as diagnostic instruments were not used in this study.
2. Method section. The variable “disruption to essential services” should be presented before the paragraph “statistical analysis”. The same apply for the confounding variables.
3. Discussion, page 10, line 7: what does DEFRA mean?
4. Tables are difficult to read because of the amount of results presented.

Discretionary revisions
1. Table 1: Title: “Numbers of respondent (%) that reported” rather than “report”.
2. Table 2 and 3: Title: “mental” rather “metal”.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests