

Answer to RC1: 'Comment on nhess-2021-269', Freddy Vinet, 25 Oct 2021

1- General comments

This paper is very useful as it addresses a more and more relevant issue for risk managers and authorities. The methods and the criteria used to analyze the papers are well described and clearly exposed. The general schedule of the paper is correct.

Many thanks for these comments on the work

2- Specific comments

The risk of Dike break is not addressed. We agree that Dam break is a specific issue dike break is part of the flood scenarios and is a frequent factor in flood death toll. (see New Orleans, Germany in July 2021; southern France in 1999 and 2002 or Spain. A little paragraph on the literature related with dike break and its consequences on mortality would be welcome especially for the epidemiologic point of view (night, surprise effect...)

Actually, dike break was out of the purposes of the review, as described in the section 2. *Materials and methods: criteria for the literature search, Exclusion criteria*, line 65. Then, to introduce this inundation mechanism I should change the selection criteria. Moreover, in this section, I can introduce an explanation of the factors driving to this exclusion in a note like this:

** due to the character of major disaster, dam failures were excluded because literature generally analyze dam structure/height/building material, failure mechanism, volume of water released etc. and their impact on the whole of population exposed, not on single persons.*

L. 220 Male mortality is also due to work in rescue services (linked § 4.5 l. 293-298). It may be better to move the paragraph on male behavior (293-298) to § 4.1.

Yes, maybe it is more appropriate, it will be changed

I. 409 :on the reliability of data, the article of Altez and Revet on the Vargas event in Venezuela is an interesting event to show the frailty of global toll on mortality. They show that the death toll usually admitted for the Vargas event had been largely over estimated.

Altez, R., Revet, S., (2005). *Contar los muertos para contar la muerte : discusion en torno al numero de fallecidos en la tragedia de 1999 en el estado Vargas – Venezuela*. Revista Geografica Venezolana, Numero especial 2005, pp. 21-43

Thank you for the suggestion, I can quote this paper as an example of inaccuracy as follow:

In some countries, and especially for larger disasters, the uncertainty on the number of fatalities still remain after the end of the event. This is the case of the disaster suffered by Vargas state (Venezuela, December 1999), in which medias, political authorities, national and international aids “soon had estimated numbers that quickly became inaccurate and lifted its limits to tens of thousands dead persons, without specifying the totals” (Altez and Revet, 2005).

In § 5.1: For the proposition of action to reduce human toll, a paragraph on building retrofitting or/and adaptation to save life (roof evacuation, balcony or terrace, addition of a storey) would be welcome. Many papers point out the need to improve building adaptation to reduce the number of fatalities.

Thank for this suggestion. I can introduce the following:

As far as the measures to avoid loss of life inside buildings, a complete analysis of the topic is presented in (NYCPlanning, 2014), where four steps facilitate the informed decision-making and the correct planning of strategy to protect buildings and people living inside them (1. identify your flood risk; 2. identify your flood elevation; 3. review relevant regulations; and 4. identify your adaptation strategy). In detail, six major retrofitting methods are proposed: elevation, relocation, demolition, wet

floodproofing, dry floodproofing, and barrier systems. For each of these strategies pros/cons analysis is presented, in terms of economic cost, loss of usable areas inside buildings, effects on insurance premiums, and actual protective effectiveness. A wide portfolio of case studies illustrates in detail the retrofit strategies for several different types of houses.

3- technical comments

I. 13 : Abstract : replace several by numerous

Thank you, modified

Line 47 -48 two section 5

Thank you, modified

L. 285 and L. 328 the problem of Alcohol and drugs is evoked twice. May be better to put together both paragraph on this problem.

Yes, modified

Line 87 contained

Thank you, modified