Review of: "Human health effects of volcanic eruptions – a systematic review"

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The paper by Amat-Beeza & Giesen presents a systematic review of the main human health effects caused by volcanic eruptions.

The paper aims at investigating a delicate and important issue for civil protection operators dealing with volcanoes: to learn and recognize which pathology – acute or chronicle – may be suffered by a population exposed to volcanic hazard, will allow the risk reduction. Nonetheless, the work does not provide comprehensive answers on the topic and in fact does not change the level of knowledge of the scientific community.

One of the main problems of the work is that the 57 publications selected, following the screening, only report cases of erupting volcanoes. Considering that the search terms included also "volcanic gas", "volcanic water pollution", volcanic air pollution", a paper dealing with human health problems caused by volcanic gas emissions (or water pollution) should have passed selection, regardless of whether a volcano was erupting or not.

In addition to the methodological issue, the repercussion on the work is substantial, as there is a total lack of reference to the numerous works published on gas hazard cases relating to quiescent volcanoes. These cases include events, such as volcanic crises that do not evolve towards an eruption but involve similar pre-eruptive phenomena (as recently occurred in Vulcano, Italy, in November 2021). The passive degassing of quiescent volcanoes, both from the crater plume and from the ground or aquifers, has been, and is, the cause of numerous accidents, including deaths to people and animals, but also poses chronic problems for the health of residents (e.g. Colli Albani volcano, Italy). It is therefore surprising that the only Italian selected volcano is Etna. The impression is therefore that the selection concerned works that cited some human health effects on active volcanoes rather than real research on volcanic health hazards including quantitative data on their thresholds.

Another problems of the study, as already reported by Madonia, is the lack of a volcanologist among the authors.

Many volcanological terms or definitions (e.g. in Introduction and Discussion) are acually wrong and I share the Madonia's recommendation.

In conclusion, even if I recognize that authors ave addressed an important theme and have done a great effort in analyzing and processind a big dataset, I think that the paper requires a major deep revision before being accepted for publication.