

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

Ana Paula da Silva Ferreira

Potential competing interests: No potential competing interests to declare.

This paper approach an important health issue, since the volcanic activities is related to air pollution.

In order to improve the publication some suggestions are listed below for the authors consideration:

1. In the Objective topic: rewrite the paragraph, e.g: Evaluate the relationship between volcanic eruptions and short- and long-term effects on human health. Investigate the evidence of the exacerbation of certain pathologies due to exposure to ashes and volcanic gases. Clarify and assess the relationship between human health consequences to provide the basis for containment measures and contingency plans.
2. In the Methodology topic: suggestion for the text: A systematic peer review was carried out between 21/11/2021 and 10/01/2022 in the scientific databases. The collected data include respiratory, ophthalmological, cardiovascular, gastrointestinal diseases among other human health effects, all volcanoes on the planet and standard terms for volcanic eruptions and disorders related to them.
3. In the Results topic: Suggestion for the text: This review was composed by 57 studies. Regarding to the exposure period to the volcanic eruptions, was founded 26 articles evaluating the short-term effects and 31 considered long-term effects on human health related to the volcanic activity. In the short-term exposure the most frequently analyzed diseases described were respiratory (92%, n=24), ophthalmological (23%, n=6) and cardiovascular (23%, n=6), for the long-term exposure the the obtained results point out the respiratory pathologies (32%, n=10) and cancer (26%, n=8). Most volcanoes were located in the USA, Iceland, Japan, and Italy. The analyzed data indicate that 81% (n = 21) of the short-term and 74% (n=23) of the long-term studies consider that there is an effect due to volcanic eruptions, compared to 11% (n=3) and 13% (n=4), respectively, that did not find this relationship.
4. Include in the Material and Methods section the studies period, from the oldest article to the most current.
5. Table 2: At the table legend please include the abbreviations of SQ, PM<sub>10</sub> and RN and their respective meaning. The current table in the column Volcano hazards for the 36, 37, 38 and 39 articles the presented information is related to analyzed disease group, please review the data. At the disease column please observe the articles 32, 41, 49, 50 and 55 were are cited the organs and not the disease.
6. At the page 6: "The main limitations were the lack of individual data[18][21][38][42][44][46][47][49] and the inability to measure all volcanic factors independently and thus establish associations [12][14][15][18][19][21][22][47][52][55]" . This finding is very important, for that reason I suggest an expansion of this paragraph.
7. Figure 2: please review the legend, that is a discordance between the number of the articles presented in text (n = 26) and the number showed in the legend (n = 16).

8. Discussion section: the section could be expanded providing more evidences to the study subject. In the discussion, if it is possible, insert some information regarding the containment measures and contingency plans.