

Response to reviewers

We would like to thank both reviewers for their positive comments on our manuscript, and for providing additional resources to improve our text.

Reviewer #1

Authors may further discuss their results relying on recent studies on the same topic: Vaccines (Basel). 2021 Jan 7;9(1):E28. and PLoS One. 2020 Oct 8;15(10):e0239826.

- Authors can also refer to and discuss other infodemiological studies related to attitudes towards vaccines: J Prev Med Hyg. 2016;57(1):E47-50. and Hum Vaccin Immunother. 2017 Feb;13(2):464-469.

The first paper (Vaccines (Basel). 2021 Jan 7;9(1):E28) suggests the polarization of contents on social media has been increasing over the past decade, and it is an important addition to our discussion on the contribution of the polarization of contents on social media to the anti-vaccination debate. The following two papers (PLoS One. 2020 Oct 8;15(10):e0239826 and J Prev Med Hyg. 2016;57(1):E47-50) were discussed in the introduction section, as they describe how Twitter is a valuable tool to study trends on vaccine hesitancy and obtain public health data of relevance. They serve as a justification for the choice to use Twitter in our study.

- Authors could suggest some ways to fight against unsubstantiated vaccine hesitancy and "fake news", and to provide more accurate informations (the same social media could be exploited as a source of accurate health-related informations, as shown in other fields; see for instance: Mult Scler Relat Disord. 2018 Oct;25:175-178. - Mult Scler. 2018 Nov;24(13):1657-1664 - Interact J Med Res. 2017 Sep 27;6(2):e18. - An Acad Bras Cienc. 2019 Feb 14;91(suppl 1):e20180149)

We cited the first of the suggested studies as an example of the importance of influencers in shaping the quality of contents on social media and their accuracy from a scientific standpoint.

- Incidentally, regarding the influence of Donald Trump on vaccine misinformation on Twitter, something similar has been observed in other fields and is worth mentioning (Clin Colon Rectal Surg. 2017 Sep;30(4):270-276.). It is very well known that celebrities' statements on health can deeply influence the online searches for health-related information; this is not necessarily bad, but could (and should) be used to improve public health (for instance by involving these celebrities as testimonials: J Public Health (Oxf). 2015 Sep;37(3):555-6

We particularly thank the reviewer for this comment, as we fully agree influencers and celebrities could play a fundamental role as trustworthy sources of information on social media. We discussed this in the section entitled "The polarization of the anti-vaccine debate" in the discussion and mentioned both papers suggested by the reviewer (Clin Colon Rectal Surg. 2017 Sep;30(4):270-276 and J Public Health (Oxf). 2015 Sep;37(3):555-6). The first study does not demonstrate that Trump is a social media influencer in other contexts other than vaccines, although for this we already cited a recent analysis from Cornell identifying

Trump as the major source of COVID-19 related misinformation on social media (Evanega et al 2020). The Clin Colon Rectal Surg. 2017 Sep;30(4):270-276 paper is nonetheless a valuable source which we included in our manuscript as it points to the problem of the lack of editorial review and fact-checking on social media. In this context, influencers could be of use as suggested by the reviewer and discussed in this paper: Mult Scler Relat Disord. 2018 Oct;25:175-178.

Reviewer #2

I suggest only specify Donald Trump as ex President, according to last results from presidential election in USA recently concluded. Please, add some comments focused on possible impact of social media on institutional decisional pathway

We changed all formulations referring to Trump from “US president” to “former US President”, and included comments on the possible impact of social media on decision-making processes within public health institutions (also suggesting a couple of potential solutions).