Author’s response to reviews

Title: YouTube™ as a source of information on food poisoning

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Author’s response to reviews:

Dear Editors and Reviewers:

Thank you for your letter and for the reviewers’ comments concerning our manuscript entitled "YouTube™ as a source of information on food poisoning" (PUBH-D-18-03987). Those comments are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our researches. We are extremely affected by the careful and responsible attitude of editor and reviewer towards our manuscript. We have studied comments carefully and have made correction which we hope meet with approval. Revised portion are marked in yellow background in the paper. The main corrections in the paper and the responds to the reviewer’s comments are as flowing:

Responds to the reviewer’s comments:

Reviewer #1:

(1) "The videos was further divided into four categories[16,17]: Education; Entertainment; News & Politics; People & Blogs." (p.4)

—— I am wondering if the author(s) could provide more details about this, at least list some examples for the four categories. I understand that the authors may adopted this categorization from previous research, but as a reader who is new to this topic, he/she may don't understand
what videos can be categorized as entertainment, what videos are considered as people & blogs, etc.

Authors’ answer: Review’s comments are helpful and valuable to improve our manuscript. We are very sorry for our negligence of detailed introduction to the classification. Therefore, we have added more specific information about the classification accordingly: “The videos was further divided into four categories[16, 17]: Education; Entertainment; News & Politics; People & Blogs. More specifically, medical courses or other academic videos were divided into “Education”; comedies and talk shows were divided into “Entertainment”; videos form government agencies and news reports about food poisoning incidents or outbreaks were divided into “News & Politics”; videos depicting personal food poisoning experiences or videos showing personal opinions about food poisoning were divided into “personal & blogs”. For example, a video describing the difference between a stomach flu and food poisoning (https://www.youtube.com/watch?v=EC7UaLIAEP4) was divided into “Education”.

(2) "Each video was scored by two independent viewers (M. Li, S.M. Yan) who were knowledgeable in the risk factors, epidemiology, etiology, symptoms, diagnosis, treatment and prevention of food poisoning, and disagreements were resolved by an arbitrator (W.W. Cui). The scores given by the two viewers were then averaged to give an overall score that was used for final results and statistical analysis."(p.5)

—— My biggest concern lies in the data analysis process, in other words, have the authors ever attempted to obtain an inter-coder reliability? Can you provide inter-coder reliability statistics in any forms (percent agreement, Scottís ð, Krippendorffís ð, etc.)? Even if you had a third person — a supervisor who might be an expert in this area — to review your analysis results, it still make no sense if the two coders had a lot of very different scores and you just simply average the scores and think "problems solved".

Authors’ answer: Thank you for your valuable suggestion. It is really true as Reviewer mentioned that an inter-coder reliability is needed in the data analysis. So we added a Table 3 to demonstrate the inter-coder reliability. The statistical analysis part has also been revised accordingly.

(3) Statistics in Table 1 and Table 3

—— The standard deviations were very large. Readers use a standard deviation to get an approximate feel for the range of the data. If the data is too skewed or has too many outliers, then simply reporting standard deviation is not enough, at least to me. It would be benefit if the
authors could add more statistics, such as the range (minimum and maximum value) or interquartile range (25th percentile and 75 percentile) for better understanding.

Authors’ answer: We are very grateful to the reviewer for the comments. We have revised the statistics in the tables, and quartiles were used according to the reviewer’s comments.

(4) "Every year, foodborne diseases are estimated to cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the United States [3](p.3)

— The reference of these statistics ("Mead PS, Slutsker L, Dietz V, McCaig LF, Bresee JS, Shapiro C, Griffin PM, Tauxe RV: Food-related illness and death in the United States. Emerging infectious diseases 1999, 5(5):607-625. ") is way too old, almost twenty years ago. I am wondering if the authors could find a more recent reference to replace this, since Youtube didn’t even exist a decade ago.

Authors’ answer: Thanks for the reviewer’s suggestion. The reference the reviewer mentioned has been replaced with a more recent reference. And the manuscript has been revised accordingly.

(5) "The Global Quality Scale (GQS)…" (p.5)

— If I were the authors, I would probably present the scale as a table, which will be clearer and much more readable.

Authors’ answer: Thanks for the reviewer’s valuable suggestion. The description of GQS was revised to be present as a table, and this truly makes the manuscript more readable.

Special thanks to you for your good comments.

Reviewer #2:

Major Comments:

(1) Abstract: The abstract includes some issues that reflect some minor issues with the approach. The claim is that YouTube is widely used for health information - a claim that is not backed up by evidence in the manuscript. The results then indicate that most of the videos are educational and useful, but this is likely to reflect the choice of search terms. The results also say that educational videos had higher scores, which is perhaps an unfortunately obvious result. My
guess is that the search terms were not piloted and were just selected on a hunch, and this has limited the value of the research.

Authors’ answer: The comment of review is very reasonable. We changed “is widely used” to “is increasingly being used”, and we added a reference in the background of the manuscript. In addition, as for the selection of search terms, we used mesh terms for reference. After pre-search, the search terms were finally determined as “food poisoning”, “foodborne disease” and “foodborne illness”.

(2) Background: The background was unconvincing. In the first paragraph there is an assumption made that patients "want" to know lots of information about foodborne illnesses without evidence, and that provision of that information would help. It's not clear that either of those things are necessarily true.

Authors’ answer: Thanks to reviewer’s carefulness. The manuscript has been revised according to reviewer’s comments: “A wide range of information including epidemiology, risk factor, etiology, symptom, treatment and prevention of foodborne diseases can be very useful for people to prevent and deal with food poisoning.” The revised part is marked in yellow in the manuscript.

(3) Background: While it is true that people are increasingly using the Internet to access health information, the statement "As a famous video site, it has a huge future in disseminating medical knowledge" is unfortunate because of the use of the word "huge" and also because this is unreferenced. While there are studies examining the quality of health information on YouTube for a variety of conditions and interventions that consumers/populations might be interested in (as referenced), there was no strong justification for why there needs to be research done on foodborne illnesses for YouTube, rather than any other condition and any other set of websites.

Authors’ answer: Thanks to the reviewer’s careful work. This sentence and the word "huge" are indeed inappropriate, so we deleted this sentence and revised the manuscript accordingly.

(4) Methods: The search terms seem arbitrary and there may have been other synonyms that could have substantially affected the proportion of videos in each category.

Authors’ answer: Reviewer’s comments are positive and constructive. In the Mesh (Medical Subject Headings, MeSH), it is explained that “foodborne disease” is often called “food poisoning”. In addition to “food poisoning”, other entry terms are combinations of “foodborne” and “disease/ illness”. So the search terms were finally determined as “food poisoning”,
“foodborne disease” and “foodborne illness”. This search strategy has minimized the impact of other synonyms as much as possible. Once again, thanks for reviewer’s valuable suggestion.

(5) Methods: How does YouTube rank results? Assuming the simplest approach where the most popular links appear first, then limiting the data collection to the first 5 pages might have distorted the outcome measures, and may explain why there was no clear difference found in the number of views and likes across the categories.

Authors’ answer: Reviewer’s comments are profound to improve our manuscript. In our research, we used YouTube's default sorting option -- "relevance", which is one of the algorithms for youtube sorting (review, upload date, views count, rating). Although sorting by "relevance" is the default option and may be the most commonly used option, different sorting options do affect search results. Sorting by "relevance" may result in similar videos. So we added this to the discussion.

(6) Methods: Other than those minor issues, the methods are generally well specified and complete, and the use of the GQS was justified and appropriate, and its limitation was described in the discussion.

Authors’ answer: Thanks for the reviewer’s comments. We are pleased to receive comments and suggestions on the manuscript.

(7) Results: Even though the scores were averaged and disagreements resolved by a third investigator, it would be worth including full details of the level of agreement in the scores, including a statistical test describing how different their scores were before averaging.

Authors’ answer: Thanks for the reviewer’s suggestion. The methods and results in the manuscript had been revised according to review’s comments. “Before the arbitrator intervened, there was no difference between content scores or GQS scores given by the two viewers(content score: \( z = -1.500, P = 0.134 \); GQS score: \( z = -1.414, P = 0.157 \)).”

(8) Discussion: The lack of a correlation or pattern between the "usefulness" and the number of people who might have seen a video on YouTube is an interesting one and likely reflects a more general phenomenon - that low credibility information is equally likely to spread and be persistent in a population because of the volume of information they may be exposed to online,
find through searching, or choose to view through links on social media. It is an important point and it is made reasonably well in the discussion.

Authors’ answer: Thanks for the reviewer’s comments. It is true that there is a lot of low-credibility information on the Internet. This also shows that there is a need to guide the consumer to reliable videos in the field of healthcare information.

(9) Discussion: The videos themselves are unlikely to be the reason for the differences in the number of views or likes they receive. Much more likely it is the existing awareness of the channel and exposure to the links to the videos on other social media platforms that will have driven the traffic to the website. So I think it is not quite right to conclude that the videos need to be entertaining to drive views. There are likely many other factors affecting viewers.

Authors’ answer: Reviewer’s comments are very reasonable. As Reviewer suggested, we have revised the conclusion part accordingly.

Minor Comments:

(10) Abstract: Videos are not "enrolled", they just "met the inclusion criteria". Patients in trials are enrolled and this is not a trial.

Authors’ answer: Thanks for the reviewer's carefulness. We have made correction according to the Reviewer’s comments.

(11) Background: "Infiltrates" is the wrong word to use in the background. Electronic multimedia does not have agency on its own and does not infiltrate - it might be common but it would be simpler just to say that "People are increasingly using the Internet to access health information [references]".

Authors’ answer: Thanks for the reviewer’s comments. We have revised the manuscript accordingly.

(12) Throughout: some of the spacing around parentheses is inconsistent.

Authors’ answer: Thanks for the reviewer’s suggestion. We are very sorry for our negligence, and we have revised this mistake in the manuscript according to the reviewer’s comments.

Special thanks to you for your good comments.