Author's response to reviews

Title: Smartphone and Medical related App use among Medical students and Junior doctors: a multicentre regional survey

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Author's response to reviews: see over
Dear Editor,

Please find attached the revised article titled: **Smartphone and Medical related App use among Medical students and Junior doctors in the United Kingdom (UK): a regional survey**. Our responses to the reviewers and text article alterations are listed below.

**Reviewer 1:**

*Watch the use of hyphens throughout the manuscript. Word combined to modify nouns need to be hyphenated (e.g., “evidence-based”).*

The above mentioned word types have been amended and hyphenated in the text.

*It is unclear why the Methods section appears at the end of the paper. This section is typically before the Results section, and needs to be placed there or the reader is confused by what is presented as “results.”*

It is unclear to the authors as to why the methods section appeared last. Having reviewed the submitted text file the methods section is in its correct place. This must have been an error during the file conversion process and will be correct during this submission.

*Depending on the audience for this journal, some description of “medical students,” “junior doctors,” “deaneries,” and other UK-specific contextual terms is needed. As a US-based researcher, I am unclear about how to understand these differences.*

The term ‘foundation level junior doctor’ has been described as being analogous to an American intern position (first paragraph in methods section) and the term ‘deanery’ has been replaced with healthcare region and the number of hospitals in this area listed (first paragraph methods section). We must assume that readers are aware of the term ‘medical student’ however the structure of the university medical degree is described (first paragraph methods section).

*The qualitative data presented are interesting, but not presented in a way to make the findings compelling. These appear as a number of related comments, but there is no indication about how representative the comments were, if there were contrasting perspectives, and so forth. Also, labeling the comments as “Student 45” seems inappropriate.*

We have expanded the section on the analysis of the open ended questions, and do not refer to this as qualitative analysis. We do feel however that the quotations should be accompanied by the participant number who made the
comment, to show representativeness and extent of the contributions from the groups.

*With respect to the figures and the data analyzed, some of the comparisons/questions asked were not particularly helpful without a context. For instance, why would a medical student be expected to use a smartphone for these things? Is the job of a medical student really comparable to that of a junior doctor (comparing Figures 1 and 2)? If their work roles are different, should they have received separate surveys?*

The different groups did receive separate surveys. The medical student group received a modified survey to account for the different environments they encounter compared to junior doctors. This is described in the first paragraph of the methods section. This point is given further discussion in the first paragraph of the discussion section, stating why we wanted to compare both groups to allow a pattern of use to be established.

*It would be helpful to have some indication about what was surprising from these findings. Many themes do not appear particularly noteworthy. For instance, the fact that students use the phones for education and doctors do not is not a big surprise.*

The rationale behind undertaking this survey has been clearly stated in the final paragraph of the background. We aimed to provide an overview of current usage patterns to facilitate the next stage of medical student and junior doctor smartphone app development. The second section of the discussion has been amended to include only findings the authors deem relevant and noteworthy.

*The discussion section would benefit from additional information and discussion of certain points that are emphasised. For instance, stating that smartphone ownership was approximately equal begs the question of why, or what would have been expected.*

Partly covered above, also discussed in paragraph six of the discussion. A previous article by Grasso et al. is referenced to compare medical student handheld computer use, to emphasise a change in trend over recent years. A statement as to why the results are important is made at the end of the second paragraph of the second section of the discussion.

*The last sentence of the section on “Frequency and daily time spent...” does not follow from the previous section. This is confusing.*

This sentence has been removed and re-worded elsewhere.

*The statement that “mobile devices are more intrusive than other technologies” is not supported. Other research has shown that patients consider other forms of HIT intrusive as well.*

This statement has been removed.

*The limitations section is excessively short. There are other limitations that*
should be mentioned. (e.g., time frame, small and focused study sample, generalizability, etc.)

The limitations section has been extensively amended. The study size is referenced to similar studies, and the response rate is compared to similar studies reviewed by Garritty et al. The timeframe has been added to the methods section, describing a 2 week interval between sending the surveys, and the time of year the surveys were distributed. Potential poor generalizability due to low response rate and response bias is discussed in the limitations section.

What was the total n possible for this study? Additional information about the sample size, the sample itself, and so forth are needed.

The total n for the study is mentioned clearly in the first paragraph of the methods section, and further stated when evaluating response rate at the start of each sub-section of the results section.

Was the survey pilot tested?

Yes, this is detailed in paragraph 2 of the methods section.

Why was the same survey used across all respondents (since the respondents were from different groups)?

The same survey was not used. This is described and the rationale for such an approach in paragraph one of the methods section.

The description about how the open ended responses were organized into key themes needs more explanation. What defines a theme? Why are some comments not themes? How many responses were analyzed?

Two major themes emerged from the open response questions. Within these there were subthemes but these amounted to a range of examples linked to the major theme so we deemed it inappropriate to break the themes down any further but rather illustrate the variation in responses within the major theme with quotations.

Reviewer 2:

The Methods section should traditionally be after introduction but before Results. For some reason, they follow discussion in my version.

This is described above as a submission/computer error.

Should include more details on how questionnaire was developed. What previous literature was used? Please cite the literature.

A more detailed description of survey development is included in paragraph 2 of
the methods section, with literature cited accordingly.

**Please provide more details on data collection. How often was the questionnaire sent out? Was there an honorarium?**

This is stated in the last line of the first paragraph of the methods section. The survey was distributed twice, with 2 weeks between time, and no offered honorarium.

**Please provide a copy of the questionnaire to ensure face validity.**

Each questionnaire is included at the end as Appendix A and B.

**Results - There was a poor response rate of less than 20% overall. This may make all results uninterpretable due to bias and could be a fatal flaw. This is mentioned as a limitation and a justification given that it is comparable to the literature, no references are given. This is a serious issue that needs to be addressed.**

This addressed in full in the limitations section. With reference to other surveys of a similar nature showing low response rates. We state that our number of responses is comparable to other similar surveys.

**Discussion is very long and not fully supported from the survey data presented. Given the poor response rate and limited data from the results, it would probably make sense to shorten significantly.**

The first part of the discussion has been shortened, and an introductory paragraph added to the discussion to clarify the importance of this survey and its significance to a UK audience.

**The use of the term qualitative analysis is a little misleading. Some analysis was performed on the text boxes without the rigour of a full qualitative study using interviews/focus groups or ethnography.**

We have taken out the term qualitative analysis to describe how the open ended questions were analysed so that there is no confusion around this being a separate qualitative strand to the study.

**The acronym BNF is unclear There is a typo "medial" pg 11**

The above queries have been amended in the text.