Author's response to reviews

Title: How residents and interns utilise and perceive the personal digital assistant and UpToDate

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Author's response to reviews: see over
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To: Dr Hans Zauner, PhD
Assistant editor
BMC-series journals
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Dear Dr Zauner,

Manuscript: How residents and interns utilise and perceive the personal digital assistant and UpToDate

Once again, thank you for considering our manuscript. We also thank all referees for their very constructive comments, which we think have strengthened our manuscript.

Below is a point-by-point description of the changes made to the manuscript. We used italics and bold font for the referees’ original comments to improve visual clarity.

Referee 1

Major Compulsory Revisions:

(1) ... In response to this criticism, the authors downplayed the direct comparison between PDA use and Up To Date use, and the revised title of the paper reflects this difference. However, the revised manuscript continues to suggest a direct comparison of PDA use with Up To Date use. For example, on page 11 of the revised manuscript, the authors state that:

"Considering all 134 respondents, UpToDate was used more frequently and for a longer duration than PDAs, and UpToDate was perceived to be more useful than PDAs for acquiring medical knowledge (Table 5)."

Given that it may be inappropriate to include non-users of UpToDate and PDAs in any comparisons of the 2 tools, we have now omitted this entire section on the 134 respondents, both in the text as well as in Table 5.

The authors emphasize as more meaningful the 23 cases in which the physician used both a PDA and Up To Date. However, with regard to each population, the authors state that:

“UpToDate was ... perceived to be more useful than PDAs for acquiring medical knowledge.” (p. 11)
We have now further downplayed any comparisons between the 2 tools. We have changed the original subheading of the section from “Direct comparisons between PDAs and UpToDate” to “Users of both medical software on PDAs and UpToDate”. Instead of merely referring to PDAs, we have now emphasised the medical software downloaded on the PDAs, e.g. we have now stated: “UpToDate was perceived to be more useful than the medical software downloaded on the 23 PDAs for acquiring medical knowledge”.

On pages 8 and 9, the authors provide a list of software applications and knowledge sources that were available on the 54 PDAs used by physicians in this study. My understanding is that Up To Date was not installed on any of the 54 PDAs used by physicians in this study. Though the authors do not specify the distribution of the applications and knowledge sources on the 54 PDAs, it is the opinion of this reviewer that the comparison underlying this study is not one between the use of PDAs and the use of Up To Date per se, but rather is one between the use of the applications and knowledge sources installed on the 54 PDAs, as delivered by a PDA, and the use of Up To Date, as delivered by a computer other than a PDA. The authors should clarify the nature of this underlying comparison, particularly in the 23 cases in which the physician used both a PDA and Up To Date.

In addition to prior references to this point under limitations of the study, we have now elaborated on this in the discussion under “Users of both medical software on PDAs and UpToDate”. Here, we have stated: “It must be emphasised that our survey did not compare the usefulness of UpToDate versus PDAs per se. Rather, we found that the medical software downloaded on our doctors’ PDAs was perceived to be less useful than UpToDate for retrieving medical information. This may again reflect a lack of medical software support for our doctors' PDAs.”

Referee 2

Major Compulsory Revisions:

1. Please address basic items of survey development. For example, how were the questions designed? Were they reviewed by any colleagues or other experts for content validity? Did other colleagues review for face validity? Was it tested in a pilot sample to make sure all questions were easy enough to answer, that the time was less than 10 minutes as designed, etc.? This does not have to be an exhaustive validation or necessarily contain quantitative psychometric validation, but at the very least please describe these basic survey design issues to ensure that validity issues of the survey are addressed.

This is an important point. We thank the referee for reminding us to describe in greater detail how we designed the questionnaire (under Methods): “After
obtaining comments on the questionnaire’s face validity from colleagues within our Department of Medicine, we tested it on a pilot sample of 10 residents from our Department – changes to the questionnaire were deemed unnecessary after the pilot survey.”

2. **Table 5 appears to have a typographical error in that median time spent using the PDA for the 23 respondents who used both UpToDate and a PDA is listed as 1.0 hr (0-14), but in the text describing this usage, it is listed as 0.5 hr (0-14 hours).**

Actually, the data in Table 5 refer to the 23 respondents who used both UpToDate and a PDA, while the data in the text refer to the 54 respondents who used a PDA – so this was not a typographical error. In any case, in response to comments on statistics by referee 3, we have now decided to state interquartile range for all data rather than minimum and maximum values because we feel this provides more useful information.

**Minor Essential Revisions:**

1. **The sentence “However, a direct comparison of their utility in doctors who used both UpToDate and PDAs downloaded with medical software is more meaningful” should be moved to the discussion section. Simply report the results from that sub-group in the results section.**

We have now removed this sentence. In fact, in response to comments from Referee 1, we have entirely removed the section comparing UpToDate and PDAs among all 134 doctors (see above).

2. **I still find it strange that the median use per week of PDA is reported as 0 hours for all users. It seems to contradict the 0.5 hours that is seen in PDA users. Is a more meaningful number possible if the PDA use is reported in minutes?**

The median use per week of 0 hours refers to all 134 doctors, more than half of whom did not own a PDA. It is therefore lower than that of 0.5 hours for the 54 doctors who owned a PDA. As stated above, we have removed this section on the use of PDAs in all 134 doctors. In retrospect, reporting median use in the entire group when many doctors did not use PDAs may not have been appropriate. Meanwhile, we have chosen to report the median use in hours rather than minutes so as to avoid using large numbers.

3. **The following sentence: “Regardless, these doctors rated UpToDate as more useful than PDAs for acquiring medical information, again emphasizing the need for medical software support for PDAs” is not supported by the data. It would be better to say “... which might have been”**
due to lack of medical software support for PDAs,” or something to that effect.

We have now rephrased our discussion to: “… we found that the medical software downloaded on our doctors’ PDAs was perceived to be less useful than UpToDate for retrieving medical information. This may again reflect a lack of medical software support for our doctors’ PDAs.”

Discretionary Revisions:

1. Change this sentence: “Not all but 93 doctors (69.4%) were aware that our hospital had an institutional subscription to UpToDate. Only 4 doctors (3.0%) had a personal subscription to UpToDate,” To this: “Only 93 doctors (69.4%) were aware that our hospital had an institutional subscription to UpToDate. Of these, 4 doctors”

We have now changed this.

Referee 3

Major Compulsory Revisions:

The authors refer to parametric and non-parametric data which is an inappropriate categorisation. The standard divisions of data are into nominal, ordinal and continuous data. The continuous data can take any distribution. The data collected in this study are nominal (the binary yes/no data), ordinal (all the 5 point scale responses) and continuous (the time data). The ordinal data should be reported as median and some form of variation and assessed using non-parametric tests such as the MWU test. The variation could be the 25th and 75th percentile or the 10th and 90th percentile, which ever the authors think gives the reader a sensible view of the data. Reporting means and standard deviations is, generally, not useful for data of this sort. The paired t-test should be replaced by a test appropriate for ordinal data, for example the Wilcoxon signed rank test. The time data is being reported sensibly as the distribution is likely to be highly skewed and so medians and the MWU are appropriate methods.

Under Methods, we have now categorized the data into nominal, ordinal and continuous data. We have now reported the data on the 5-point Likert scale as medians plus the 25th and 75th percentiles, and compared such data using the Wilcoxon signed ranked test.

Discretionary Revisions:

Personally I feel that the ‘Score’ columns in tables 2, 3 and 4 are redundant (even when the data is presented as a median) and suggest that the
authors consider whether they give the reader any further information over the percentages presented in the tables (At present, 3 items of information in these tables, the mean, std dev and percentage, are being used to summarise 5 values from the 5 point scale.)

We have now removed the “Score” columns in tables 2, 3 and 4.

Once again, we have spared no efforts in answering every single comment. We will be glad to answer any further queries, and continue to hope that you will consider accepting our manuscript.

Yours sincerely,

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