Author’s response to reviews

Title: Evidence-based medicine self-assessment, knowledge, and integration into daily practice: a survey among Romanian physicians and comparison between trainees and specialists

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Evidence-based medicine self-assessment and factual knowledge: a survey among Romanian physicians
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Dear Cecilia Pennica, PhD
BMC Medical Education

Thank you for the e-mail sent on 8 October 2019 and for the opportunity to improve our manuscript. Please send our gratitude to the reviewers for the time spend to read our manuscript and for useful comments and suggestions. By addressing the rise issues, our manuscript becomes better. All changes done in the revised manuscript are in blue text to be easily visible. During the revision, new references were included and thus renumbered.

Neither the author list nor the order was changed. A point-to-point answer to the comments and suggestions is included at the bottom of this letter.

We look forward receiving your feedback.

Best wishes,
Sorana D. Bolboaca, PhD

Point-by-point answer to the reviewers’ comments and suggestions
Thank you for the time you spend to read and evaluate our manuscript. Your comments and suggestions clearly improve our manuscript.
Reviewer reports:

Thank you for the opportunity to review this manuscript. The authors are clearly passionate about encouraging stronger training in EBP in Romania.
Thank you for your kind appreciation.
The title needs to be reconsidered. The objective in the abstract has a secondary aim, of a comparisons between trainees and specialists, and the aim at the end of the Background in the main text of the article states: 'Secondarily, mobile medical applications used as EBM resources were also evaluated.' The title was changes as „Evidence-based medicine self-assessment and factual knowledge: a survey among Romanian physicians and comparison between trainees and specialists”

Abstract
Within correct length (is <200 words).
Page 1, line 24: First part of the structure does not comply with BMC Medical Education- this should be Background: give the context before giving the purpose or objective of the study.
The objective reported included a comparison; this is not reflected in the title. Was the comparison a secondary objective?
The Background was included in the Abstract
Page 2: Methods: needs to include a brief overview of analysis.
A brief overview of statistical analysis was included in the revised manuscript.
Page 2, line 32: Results: there are some errors that impact on clarity eg the use of 'vs,' in a significantly high percentage in both groups were women (72.4% vs 70%) in inaccurate. The sentence was rephrase for clarity.
Page 2, line 40: Typing error in final line: 'are/not'.
Thank you for this observation; it was corrected in the revised manuscript.

Background
Page 2 line 40-51: This sentence requires further explanation or re-wording, particularly '...through which it might engender better research results.'
You observation is correct; rephrased.
Page 2-3, lines 51-52: This sentence requires further explanation or re-wording, particularly 'This involves using guides resulting from systematic research on individual patients,…'
Thank you for your observation; rephrased for clarity.
Page 3, Paragraph 2, lines 55-59: this paragraph needs to be re-written for clarity and English grammar. There are also many other studies in this area of discrepancies between perceptions of EBM and knowledge. Can the authors please clarify why this particular article by Aguirre-Raya et al 2016) was chosen here?
Of course, your are right; Aguirre-Raya et al. quantified the gap between the perception of EBM and knowledge using global indexes. In the revised manuscript other references reporting this gap were introduced in the revised manuscript.
Page 3, lines 67-68: this sentence could be restructured: 'There is a scarcity of scientific research related to evidence-based medicine in Romania.'
The sentence was rephrased.

Methods
Page 4, Paragraph 1, lines 79-93 Study design: there is insufficient detail about the survey including the format, wording, types of questions, options for responses and how the questionnaire was developed. The abstract stated the '…survey consisted of 18 multiple choice questions and five open-response items…' There needs to be a comprehensive overview of the survey presented in the methods.
Detailed information regarding the format, type of questions, options for responses were included in the revised manuscript. The development and validation of the applied questionnaire was previously published.

Page 5, line 103 states: 'Details related to the survey development and validation were previously published.' The reference is Reference 14: 'Capras RD, Drugan TC, Bolboacă SD. Development and Validation of a Questionnaire to Assess Evidence-Based Practice. Proceedings of the 6th IEEE International Conference on E-Health and Bioengineering - EHB 2017;6:129-132. doi:10.1109/EHB.2017.7995378.' This 2017 published manuscript refers to a 38 item questionnaire and the article itself lacks detail of the layout and format of the questions. There needs to be an explanation of the difference in the number of items alluded to in the current manuscript (23 items) and in the Capras et al (2017) article (38 items).

A new figure (Fig. 1) was included in the revised manuscript to present the structure and component of the applied questionnaire. Furthermore, in the revised manuscript, we presented which items were reported. In summary, some questions considered as not relevant (such as the name of graduate medical school, working county, the year of graduation, the year of specialty (if applied), trainee specialization, specialty, usefulness of participation in the focus groups, and how they learn about this study) were not included in this report.

Page 4, Paragraph 2, lines 95-102: Further clarification is needed about the administration of the questionnaire. The Facebook professional groups to which the questionnaire was administered -how were these chosen? The authors could summarise in the text that there were 24 professional groups encompassing about 70-75,000 members (with potential overlap ie members who belonged to a number of groups?). Were any measures in place to ensure the survey as completed only once?

The summary of the targeted professional group and the total number of members covered by these groups was included in the revised manuscript.

The measures to ensure the survey as completed only once were provided in the revised manuscript.

Page 4, line 107: can you clarify what is meant by: 'The respondents not active in their first specialty were considered as trainees.'

The sentence was rephrased for clarity.

Page 5, Data analysis: it is difficult to comment on this when there is not a clear presentation of the types and format of questions.

Details about the survey was included in the revised manuscript. We can also provide a translation of the applied survey if you consider of interest; please let us know.

Page 5, lines 114-117: there is insufficient detail about what is meant by 'the degree of recommendation was specified' and 'the level of evidence was presented' eg which evidence classification was used? This information is provided in the Methods section, namely „United States Preventive Services Task Force”.

Later in results (Tables 2 and 3), the format of at least 18 questions becomes clearer, but not the specific wording of the items. There are 10 multiple choice items related to knowledge awareness and attitudes to EBM and 8 multiple choice items related to medical applications on mobile phones. What were the 5 open response items? Overall, the items in the questionnaire could be better summarised and reference made to Table 2 and 3 for details.

The results of some items are reported in the text. Fig 1 clearly presents the Sections and the items in each section. In the text of the revised manuscript, the omitted items were listed.

Results

Page 5, lines 123 and 125: clarify that, for example, (77.6% [70.6 to 83.5]) refer to mean and range. It is the percentage and associated 95% confidence bounds (the % represent the respondents who
graduated five years prior to the study). The sentence was rephrased for clarity. Information about the report of 95% confidence bounds in squared brackets along the manuscript is provided in the Methods section in the revised manuscript.

Page 8, line 138: make it clear here at the beginning, that the results of professional application usage on mobile phones will now be presented. What was the wording of these questions?

Sub-titles were included in the revised manuscript to increase clarity. Information regarding the questions is provided in Fig. 1 and in the associated text.

As there was limited areas where there were significant differences in findings between specialists and trainees and as this comparisons x vs y contributed to some 'awkwardness' in the Discussion it may be better to give the overall results in Tables 2 and 3 in addition to the results of the two groups.

Since the trainees belong to the generation, who grow-up with technology, we expected to see significant differences in both EBM awareness and knowledge as well as in the use of the medical apps. In the revised manuscript, comparisons between groups were done with Z test for proportion whenever multiple answers was possible. However, if you consider that the totals are important, the values could be included in all tables.

Discussion

This is very long approx. 2300 words.

In the revised manuscript, the Discussion section has 1599 words.

Try to remove the reporting of figures for specialist vs trainees when presenting results as it is awkward and it is usually the overall combined result, rather than the comparison, that is being discussed when the term is used. This will contribute to better flow of the Discussion.

Thank you for your observation. The duplication of the results were deleted in the revised manuscript.

Overall, parts of the discussion should be re-written in a more focussed/targeted manner. Much of the early discussion is a repeat of the results (especially pages 9-11) with a frequent comparison to previous studies, but without a clear reason as to why these studies have been chosen for comparison.

Rather than individual items, it may be better to decide on the main areas of discussion, even focusing on sections eg knowledge, awareness and attitudes as a section, medical applications and professional resources as another sections, and overall making the discussion more robust; eg on page 10 there was the beginnings of an interesting discussion on '... the discrepancy between how the respondents perceived their EBM knowledge and the actual knowledge...' and how this may impact on decision-making. Another area of discussion might be to bring together in a few paragraphs, the similarities and differences between the trainees and specialists in the areas surveyed. A more focussed and concise discussion should be written.

Sub-sections were created in the Discussion section. Similarities and differences between the trainees and specialists regarding the survey were also included in the revised manuscript.

Page 9, line 156-Page 10, line 169: there was some interesting discussion about the age of the sample and the link to use of Facebook and possible interest of younger physicians in EBP which may have resulted in them choosing to complete the online survey. This point could be taken further; essentially it meant there was a potential bias in the sample choosing to complete the survey.

The potential bias in the sample choosing to complete the survey is discussed in the Limitations subsection.

Page 10, line 202-Page 11, line 213: It is not clear why the discussion moved to journal requirements for PRISMA use.

This part was deleted in the revised manuscript.

Page 11, line 214-Page 12, line 250: These 5-6 paragraphs discuss the results related to mobile phones and medical apps. This is a contemporary topic, and there are some interesting points raised, but there is still a tendency for repetition of results without depth of discussion. Regarding specialists and
trainees, it may be better to pull out the main points of similarity and difference and pull these together more, as previously stated. Particular areas include trainees greater use, compared to specialists, of medical apps out of curiosity and for identifying solutions to clinical problems (where difference appeared significant). This links with the significantly greater use of disease etiology apps by trainees. These may be related to the specialists drawing on greater clinical expertise and clinical pattern recognition (which are part of an EBP approach). The point raised on page 12, lines 248-250 about the lack of EBM sources in most of the mobile medical apps is worthy of more discussion.
The repetition of the results was deleted in the revised manuscript. Similarities and differences were highlighted in the revised manuscript. The lack of EBM sources in most of the mobile medical apps is further discussed.
Page 12, line 252: Limits, Implications, perspectives (more than 2.5 pages)-use 'limitations' not 'limits'
Limits was changes as Limitations.
Page 12, line 253-Page 13, line 278: The limitation and implications of these were well presented-well done
Thank you for your kind appreciation.
Page 13, line 279, page 14, line 298:
The strengths and contributions of the study were presented here. Caution needs to be applied in referring to specific Romanian courses and training programs when preparing this manuscript for a broader base. Discussion of the importance of greater training opportunities in EBP at undergraduate and post-graduate levels is worthwhile.
Thank you for your observation; all your observations were considered in the revised manuscript.
Page 14, line 299-Page 15, line 318: Much of this part of the discussion goes beyond the scope of this research, There is a move into discussion of what evidence is and the fluid and changing nature of research evidence. This could be seen as part of the argument for training in EBP to ensure a critical and deep understanding, but should only be presented with this or a similar context.
Thank you for your observation; this part of the manuscript was deleted and a move into discussion of what evidence is was linked to the EBP training.

Conclusion
Adequate presentation.
Thank you.
In summary, the background needs a stronger focus on mobile medical applications and on perceived lower starting level of EBP knowledge, attitudes and behaviours in Romania. The title and aims/objectives need to be clearer and more strongly linked. The methods section needs a better structure, more detail and clarity, with particular attention to thorough presentation of the questionnaire. The clarity of writing and English grammar overall needs to be reviewed and tightened.
Thank you for your useful comments and suggestions. We hope that we succeed in increasing the clarity in the revised manuscript. However, if you see space for more improvement please let us know.

Martina Kelly (Reviewer 2): In this paper, authors report survey findings on use of EBM with a sample of Romanian physicians. As a survey, findings are limited by sample and representativeness, but the findings give some insight into EBM use in Romania and the authors consider these limitations.
Some more detailed comments, in case helpful to authors.
Thank you for time spent to read and review our manuscript and for useful feedback.
The background sets the study up, and could be improved slightly with the help of a native English speaker, to help the flow but the content is fine.
The Background was changed as suggested by the other reviewer, and the manuscript was checked by an Editing Service.

e.g. Page 3, Line 55 consider changing to Previous studies have examined use of EBM in clinical practice. Aguirre-Raya et al examined medical students, interns and specialists perceptions of EBM and reported etc.
Thank you for your help.
Rephrase as „Aguirre-Raya et al. examined medical students, interns and specialists perceptions of EBM and reported a global index of self-perception equal to 75% but the global index on knowledge was 19 [5].”
Line 67 Little is known about the clinical use of EBM in Romania.
Thank you for your suggestion. Change, as you suggested.

Methods: it might be helpful to readers to know a little about medicine in Romania - are all physicians specialists (e.g. does family medicine exist), as I was unclear in the results where some physicians had two specialties? Also is continuous professional development optional or mandatory? Do physicians get financial support to support continuous learning (as this would likely influence app usage)? These factors could be presented to help the reader understand the context or as part of the discussion to interpret the findings.
Thank you for your comments. Details about medicine (training, specialty exam, credits for continuing medical education) in Romania were included in the Methods section.

In terms of the survey, I wondered about how the question on levels of evidence was asked, it didn't seem to compare meta-analysis and systematic reviews with other types of study such as case-control, cohort etc. I think separating out meta-analysis, from systematic reviews felt a bit unfair. Also, as the authors note there can be times when a poorly conducted meta-analysis may not be as valuable as a well conducted RCT. So I am hesitant to over-rely on the interpretation as made by the authors.
Details regarding the content of the questionnaire are provided in the revised manuscript. Furthermore, if you consider as usefull, a translation of the applied questionnaire could also be provided.
Data analysis - I didn't understand the statement that respondents not active in their first specialty were considered as trainees, can u explain?
Since in Romania is possible to have more than one specialty (see Methods section in the revised manuscript), all respondents under training were considered trainees.
Pg 5, L 108 - think it's a typo - first word should be Quantitative?
Qualitative is correct. For example, for gender was reported how many females were among respondents and the % was reported with the associated 95% confidence bounds.

Results:
Is there any national data to which the authors can compare to understand how representative this sample is?
Unfortunately, we did not have any valid reference for the number of physicians in Romania. However, we included in the revised manuscript the summary of the available population.

Table 1 - I'm not sure the region of graduated university is essential to this publication.
You are right; The region of graduation was deleted.
Would the term 'medical' be more specific than 'clinical' specialties?
Thank you for your suggestion; changed as 'medical' and the para-clinical specialties were merged with the medical specialties.
Discussion The authors situate their findings in the literature and identify limitations, in particular issues of sampling and survey response. They also try to contextualize their findings to reflect on implications. Perhaps the discussion could be shortened somewhat.
Thank you for your suggestion; we tried our best to shorten the Discussion section.

Editorial comments and suggestions
If improvements to the English language within your manuscript have been requested, you should have your manuscript reviewed by someone who is fluent in English.
The revised manuscript was checked by an Editing Service.
In accordance with BioMed Central editorial policies and formatting guidelines, all manuscript submissions to BMC Medical Education must contain a Declarations section which includes the mandatory sub-sections listed below
Declarations
- Ethics approval and consent to participate
- Consent to publish
- Availability of data and materials
- Competing interests
- Funding
- Authors' Contributions
- Acknowledgements
All items are included in the revised manuscript.