

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Knowledge and use of evidence-based medicine in daily practice by health professionals: A cross-sectional survey.
<b>AUTHORS</b>	Lafuente-Lafuente, Carmelo; Leita, Catia; Kilani, Insaf; Kacher, Zineb; Engels, Cynthia; Canoui-poitine, Florence; Belmin, Joël

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Birgitte Espehaug Centre for Evidence-Based Practice, Western Norway University of Applied Sciences, Norway
<b>REVIEW RETURNED</b>	22-Aug-2018

<b>GENERAL COMMENTS</b>	<p>This paper raises important issues related to use of EBM in daily practice and potential barriers to EBM use. A strength of the study is that the participants represent three types of health practitioners, although in limited numbers regarding nurses and pharmacists.</p> <p>Concerns and comments:</p> <p>In this setting with different health professions, use of the term EBP and an EBP perspective might have been more appropriate than EBM. However, as EBM was used in the questionnaire I will not suggest a change in nomenclature.</p> <p>The authors refer only to primary studies in the introduction and discussion parts. If no systematic reviews, suitably appraised, exist, the authors may consider stating this explicitly.</p> <p>The use of the wording "primary evidence" is ambiguous and should be defined or explained.</p> <p>The study is relatively small, based on self-reported measures and with limited generalizability. In particular, are numbers are limited for nurses and pharmacists. The authors state their concerns regarding representativity and subjective measurements, but may also extend this to the number of participants.</p> <p>While it may be viewed as an asset that the questionnaire is short and compact, the questionnaire is largely not validated. It is also not very well described. Comparing formulations in tables and figures with those in the questionnaire (<a href="https://osf.io/ct4jm/">https://osf.io/ct4jm/</a>), it is for instance not evident how the questionnaire items relates to the formulation "Do not know what EBM is, do not use it" in table 2.</p> <p>In the statistics part, a description should be given of the categorization of variables. If the assumptions of the chi-square</p>
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	<p>test are not met this should be addressed. This may be the case, as some of the variable levels (as shown in table 1) includes few observations. The authors should also consider investigating group differences for the variable “years of work ...” without categorization.</p> <p>Although there are serious potential pitfalls related to an unreflected use of EBM resources, I find it encouraging that over 50 % of the participants used clinical practice guidelines on a weekly basis or more often, and that over 80 % used clinical practice guidelines at least monthly. It would have been of interest to know if this figure differed among health professions.</p> <p>Page 8 under “EBM knowledge and use in professional practice”, line 2: I suggest the authors reconsider the use of the word «admitted», and possibly change it to «reported».</p> <p>Page 8 under “EBM knowledge and use in professional practice”, line 2: Unsure how to find 34.9% in table 2.</p> <p>Page 8 under “EBM knowledge and use in professional practice”, last sentence: More details than “no differences” should be given for this result, at least a range of p-values. Further, although not statistically significant at a 5 % level, these factors may still confound the result of EBP use by health profession. A regression analysis may be used to investigate this.</p> <p>For the main statistical test results the authors may add estimates of differences in proportions along with 95 % confidence intervals (in the text).</p> <p>In the discussion part under “Implications for practice”, I suggest the authors consider revising the first sentence. This because, although the findings indicate that professionals use clinical guidelines and do not use primary evidence, this does not necessarily imply that they do not verify the quality of the guidelines. An item in the questionnaire detailing use of assessment tools like e.g. the AGREE II instrument would better elucidate this issue.</p> <p>I believe that the discussion would benefit if also addressing current EBM (EBP) teaching. Are there differences among the health professions represented in the study? What are the implications for education?</p>
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<b>REVIEWER</b>	Chieh-feng Chen Taipei Medical university, Taipei, Taiwan
<b>REVIEW RETURNED</b>	10-Sep-2018

<b>GENERAL COMMENTS</b>	<p>Overall, it is a research to describe the application of EBM in Paris during 2015 – 2016.</p> <p>The process of the tool development of the self-questionnaire should be described more in the paper. What is the validity and reliability of the tool?</p>
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	<p>It's pity that the questionnaire did not ask age range of the participants since age is an important factor to influence the acceptance of the concept of EBM.</p> <p>The databases that the authors referred are in English. Is there language barrier while searching databases? What is the role of Google search which maybe one of the most often used searching engine? Or what is the most favorable searching tool for clinicians in Paris?</p> <p>In discussion, the international comparison can be addressed more. Readers may be interested in the condition of EBM in a non-English speaking country.</p>
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## VERSION 1 – AUTHOR RESPONSE

Reviewers' Comments to Author:

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REVIEWER: 1

Reviewer Name: Birgitte Espehaug

Institution and Country: Centre for Evidence-Based Practice, Western Norway University of Applied Sciences, Norway

Please state any competing interests or state 'None declared': None declared

This paper raises important issues related to use of EBM in daily practice and potential barriers to EBM use. A strength of the study is that the participants represent three types of health practitioners, although in limited numbers regarding nurses and pharmacists.

Concerns and comments:

1. In this setting with different health professions, use of the term EBP and an EBP perspective might have been more appropriate than EBM. However, as EBM was used in the questionnaire I will not suggest a change in nomenclature.

We agree. In fact, we discussed this very issue but the study had already begun using the term "EBM" in the questionnaire, so we kept it all along to be consistent.

2. The authors refer only to primary studies in the introduction and discussion parts. If no systematic reviews, suitably appraised, exist, the authors may consider stating this explicitly.

We did not found any published systematic review on this topic. We have stated it in the introduction (page 4).

3. The use of the wording "primary evidence" is ambiguous and should be defined or explained.

We define the term "primary evidence" at the time of its first occurrence, in the revised manuscript (Discussion, page 10).

4. The study is relatively small, based on self-reported measures and with limited generalizability. In particular, are numbers are limited for nurses and pharmacists. The authors state their concerns

regarding representativity and subjective measurements, but may also extend this to the number of participants.

True. We comment now on the relatively low numbers of nurses and pharmacists as another limitation of the study, in the discussion, under “Strengths and limitations of the study” (page 11).

5. While it may be viewed as an asset that the questionnaire is short and compact, the questionnaire is largely not validated. It is also not very well described. Comparing formulations in tables and figures with those in the questionnaire (<https://osf.io/ct4jm/>), it is for instance not evident how the questionnaire items relates to the formulation “Do not know what EBM is, do not use it” in table 2.

The questionnaire was not formally assessed for validity and reliability, as is stated in the revised manuscript (Methods, “Questionnaire”, page 7). Answering that one rarely or never used EBM in his professional practice without answering that one had heard about EBM or knew about EBM in any way (the remaining items under “Connaissance et utilisation de l'EBM” in the questionnaire) was recorded as “Do not know what EBM is, do not use it”. We have added a note at the end of the questionnaire, in the supplementary file, to explain that.

For the remaining items, the relation between questionnaire items and formulation employed in Table 2 is straightforward.

6. In the statistics part, a description should be given of the categorization of variables. If the assumptions of the chi-square test are not met this should be addressed. This may be the case, as some of the variable levels (as shown in table 1) includes few observations. The authors should also consider investigating group differences for the variable “years of work ...” without categorization.

The categorization of variables is now described in a Table provided with the supplementary data (Table S1). We used a Likelihood-ratio Chi2 when the assumptions of the classical Pearson's Chi2 test were not met. Furthermore, we have also explored the association between variables using logistic regression, as suggested by the reviewer further below. All that is detailed on the “Statistics” section (page 7).

7. Although there are serious potential pitfalls related to an unreflected use of EBM resources, I find it encouraging that over 50 % of the participants used clinical practice guidelines on a weekly basis or more often, and that over 80 % used clinical practice guidelines at least monthly. It would have been of interest to know if this figure differed among health professions.

Again, some differences appeared between professions: fewer nurses (68.5%,  $p = 0.009$ ) than physicians (89.2%) or pharmacists (87.5%) declared to use guidelines at least monthly or more often. We have added this data to the text (Results, page 9).

8. Page 8 under “EBM knowledge and use in professional practice”, line 2: I suggest the authors reconsider the use of the word «admitted», and possibly change it to «reported».

We have amended it. Thank you.

9. Page 8 under “EBM knowledge and use in professional practice”, line 2: Unsure how to find 34.9% in table 2.

We made a (small) mistake there, thank you for raising it. The correct figure is 35.9%, this is, the sum of respondents who declared not to know what EBM is (4%) plus those who declared to have just heard about (31.9%). It has been amended.

10. Page 8 under “EBM knowledge and use in professional practice”, last sentence: More details than “no differences” should be given for this result, at least a range of p-values. Further, although not

statistically significant at a 5 % level, these factors may still confound the result of EBP use by health profession. A regression analysis may be used to investigate this.

P values have been provided for each comparison. Additionally, we have also explored the association between variables using a multivariate logistic regression model. The multivariate model reaches the same results than univariate analysis, though: profession was the only variable significantly associated with the declared degree of knowledge and use of EBM. Details have been added in the text (Results, pages 8-9) and in a figure in the supplementary data (Figure S1)

11. For the main statistical test results the authors may add estimates of differences in proportions along with 95 % confidence intervals (in the text).

Estimates of differences in proportions with their 95%CI are provided in the revised manuscript (Results, page 8).

12. In the discussion part under “Implications for practice”, I suggest the authors consider revising the first sentence. This because, although the findings indicate that professionals use clinical guidelines and do not use primary evidence, this does not necessarily imply that they do not verify the quality of the guidelines. An item in the questionnaire detailing use of assessment tools like e.g. the AGREE II instrument would better elucidate this issue.

In our experience, French health professionals rarely, if ever, verify the quality of the guidelines they use. AGREE II, for instance, is largely unknown to most clinicians, except to those professionals with already a good background on EBM. Most professionals try to follow guidelines just because guidelines have been elaborated by professional societies and institutions (like the French “Haute Autorité de Santé”, similar to the UK NICE) they trust.

Anyway, it is true we did not explicitly assessed this point in the questionnaire, so we have modified this sentence to “...suggests that many professionals probably do not (or are unable to) verify independently ...”

13. I believe that the discussion would benefit if also addressing current EBM (EBP) teaching. Are there differences among the health professions represented in the study? What are the implications for education?

True. There are in our country clear dissimilarities in EBM / EBP teaching between physicians, nurses and pharmacists. These dissimilarities are the most probable explanation of the differences in the use of EBM observed. We comment on this point now in the discussion (page 12).

REVIEWER: 2

Reviewer Name: Chieh-feng Chen

Institution and Country: Taipei Medical university, Taipei, Taiwan

Please state any competing interests or state ‘None declared’: None declared

Overall, it is a research to describe the application of EBM in Paris during 2015 – 2016.

1. The process of the tool development of the self-questionnaire should be described more in the paper. What is the validity and reliability of the tool?

We have provided further details to better describe the development of the self-questionnaire (end of page 6, continuing in page 7). As we said before, the questionnaire was not formally assessed for validity and reliability, which is stated now in the text.

2. It's pity that the questionnaire did not ask age range of the participants since age is an important factor to influence the acceptance of the concept of EBM.

Age was asked in the first questionnaire tested but deleted in the final questionnaire. After receiving some feedback and discussing it, we concluded that professional experience – measured as “years of work after graduation” – was a good proxy for age, was probably as well (or better) correlated with EBM use, and carried less risks of breaking anonymity.

3. The databases that the authors referred are in English. Is there language barrier while searching databases? What is the role of Google search which maybe one of the most often used searching engine? Or what is the most favorable searching tool for clinicians in Paris?

Google is indeed largely employed by health practitioners in France, and probably the most frequently used search tool for searching for quick answers to specific questions. However, it is not usually considered an EBM-related source, so we did not included it in our questionnaire and we have no actual data on its use to show.

The databases we questioned professionals about are in English simply because there is not any equivalent database in French. We also thought that language might be a problem for some French practitioner. However, none mentioned it as an obstacle in the questionnaire.

4. In discussion, the international comparison can be addressed more. Readers may be interested in the condition of EBM in a non-English speaking country.

It is very difficult to make an international comparison because, as we discuss, published surveys have employed different questionnaires and differ in others aspects too. We did not discern any obvious difference between countries in general, nor between English-speaking and non-English-speaking countries, in their declared knowledge and use of EBM / EBP. We have added a brief comment on this last point in the discussion (end of page 11, beginning of page 12).

## VERSION 2 – REVIEW

<b>REVIEWER</b>	Birgitte Espehaug Centre for Evidence-Based Practice, Western Norway University of Applied Sciences, Norway
<b>REVIEW RETURNED</b>	10-Dec-2018
<b>GENERAL COMMENTS</b>	Some minor remarks: In the results part, "mean difference" should be replaced with "difference".

## VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Birgitte Espehaug

Institution and Country: Centre for Evidence-Based Practice, Western Norway University of Applied Sciences, Norway

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below

Some minor remarks:

In the results part, "mean difference" should be replaced with "difference".

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Response: We agree. This has been amended in the revised paper (Results, page 8)