Author's response to reviews

Title: Factors influencing the development of evidence-based practice among nurses: a self-report survey

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Version: 2 Date: 3 August 2012

Author’s response to reviews: see below
To the Editors of BMC Health Services Research

Thank you for the invitation to resubmit our manuscript entitled “Factors influencing the development of evidence-based practice among nurses” (MS: 3079672846585478).

We appreciate the thorough and helpful comments made by the reviewers. We have tried to follow all the advices, and we are certain that we now resubmit an improved manuscript. Below we have provided a point-by-point response to each comment from the reviewers.

We hope that the revised manuscript is acceptable and look forward to hearing from you.

Sincerely yours,
Anne Dalheim, on behalf of the author group.
NOTES FROM THE AUTHORS:

Changes that have been made in response to comments from reviewers have been written in “red” in the revised manuscript.

RESPONSE TO REVIEWER COMMENTS

Reviewer 1: Dana Rutledge

MER. A description of the lack of evidence of validity and reliability of the tool used (DEBP), or evidence of any internal consistency calculations done with the Norwegian sample would be appropriate. One use of the DEBP attempted to aggregate responses across items (see Rutledge & Skelton, 2011).

RESPONSE: We agree with the reviewer and have now added information about the original instrument’s validity and reliability as well as Cronbach’s alpha for internal consistency in our study population.

MER. The presentation of data with altered “indices” (20-100) takes away reader understanding of the meaning of the numbers in tables 2 and 4 (Gerrish in her manuscripts keeps the original response sets, and clearly delineates meaning by using a note in tables; also, see Rutledge & Skelton presentation of findings). Keeping closer to the response sets would be more meaningful… if a mean were calculated, it must be interpreted in terms of the original response set.

RESPONSE: We agree with the reviewer and have revised Table 2 and Table 4 according to Gerrish et al. We also have added footnotes in the tables to improve readability of the tables.

MCR. Multiple comparisons are done in the analyses… no mention is made of the enhanced likelihood of Type 1 errors. A more conservative p-value than .05 would be more appropriate.

RESPONSE: We agree with the reviewer. We have now used a more conservative P value of 0.01 in the evaluation of the statistical significance. Results have been interpreted accordingly.

DR. Only in Table 5 is there an attempt made to aggregate individual items from the DEBP into categories. Since the DEBP does not have subscales, this is a problem with its usage... makes reporting difficult. The researchers could attempt a factor analysis or some way to aggregate items within each of the five DEBP sections??? Might make reporting easier, and enhance readability of findings. For example, Table 3 is almost impossible to interpret for the reader; it reports ALL of the sources of evidence associations with 3 demographic variables... what about reporting associations among “types of evidence” (e.g., experiential, evidence-based, etc.) and these variables?

RESPONSE: Initially, we wanted to examine the response on each item in relation to demographic variables and self-reported skills to identify the most important items in
knowledge resources. However, we agree with the reviewer that aggregating items within each of the five DEBP dimensions would be more appropriate. Table 3 now present associations between background variables and score variables on use of sources of knowledge and evidence. The dimensions of knowledge sources are described in the methods section.

MCR. The discussion does not lead in with the primary findings of the study, as I would have expected... that Norwegian nurses in a large hospital report similar resources for decision-making and barriers to EBP as nurses in most developed countries. More general topic sentences would be helpful...

RESPONSE: We thank the reviewer for the useful comment. We have now incorporated a paragraph on the principle findings in the beginning of the discussion section.

MCR. and more recommendations for practice, education, and research throughout the discussion are warranted.

RESPONSE: We agree with the reviewer. Recommendations for practice, education and research are now added into the discussion section.

MER. The discussion brings in some key literature findings, but doesn’t fully address some findings. The paragraph about heavy reliance on hospital policy and procedures alludes to the fact—but does not state--- that if policies and procedures are well-developed, based upon good evidence, and used by nurses, this shows that EBP is happening. A limitation of the study is that we don’t know whether the policies and procedures ARE based upon good evidence.

RESPONSE: We have now added more information about local protocols and procedures used in Norwegian hospitals. The results from a cross sectional study shows that procedures and protocols in nursing are mainly prepared without established quality criteria.

MER. Great section on barriers and culture... one typo: “Findings [25] indicate that administrative and collegial support probably more strongly influence the use of research that?? lack of time resulting from a high pace of work.”

RESPONSE: The typo is corrected.

MCR. One of your most important findings was the association between skills and barriers/sources. The paragraph about this is not strongly written. First, a minority of your nurses have competent/expert skills in the three areas (find (39 nurses), assess (59 nurses), use findings (25 nurses)), but those that do are most likely to use the best evidence (findings from clinical nursing/medical journals). Use of some of these specific findings would speak to the reader...

RESPONSE: We have updated this paragraph as proposed by the reviewer.
MCR. In terms of significance, there is no mention of how sources of evidence used by individual nurses and the reported barriers to EBP by individual nurses affect actual practice and care delivered by nurses at the hospital... and whether practice changes at the hospital are being driven by high level evidence. The focus of the study is on the individual nurse – a limitation in terms of significance. No mention of patient outcomes...

RESPONSE: We agree with the reviewer and have added information on how our results can be used for implementation of evidence-based practice.

6. Are limitations of the work clearly stated?
MCR. No, need to include generalizability issues and problems with the tool you used.

RESPONSE: We agree with the reviewer and have added several limitations regarding the study population and the questionnaire used.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
MER. See Rutledge & Skelton, 2011 (may be helpful, may not)

RESPONSE: We thank the reviewer and have added information about the PARiHS framework.
Reviewer 2: Shaheen Majid

1. There are a few spellings and grammar errors in the manuscript which should be corrected.

RESPONSE: We have tried to correct all grammar errors in the revised manuscript.

2. Literature Review: The section on literature review is quite shallow and superficial, particularly the section on barriers to EBP needs strengthening. As EBP is an information-intensive activity; it will be useful to also review papers on EBP published in medical and healthcare library journals. My research team has also published a somewhat similar paper in 2011 in the Journal of Medical Library Association.

RESPONSE: We agree and have added more literature about organizational and individual factors that can influence on the implementation process of evidence-based practice in hospitals.

3. Questionnaire: a. The authors should explain the purpose of coding the questionnaire.

RESPONSE: A pseudo number was made to ensure that data could not directly be traced back to any respondent. The link between the pseudo number and personal identification number was stored separately on a secured server at the hospital. We have provided this description in the revised manuscript.

b. It was mentioned in the paper that Kate Gerrish provided permission to translate the questionnaire. It will useful to provide more information about her identity.

RESPONSE: We have added more information about Kate Gerrish’s work.

c. As this study has already been completed, it would be better to use the past tense to discuss your questionnaire.

RESPONSE: We have now discussed the questionnaire in the past tense.

d. Was a pilot study or pre-testing of the questionnaire undertaken? How many individuals participated in the pilot/pre-testing exercise and what changes were suggested?

RESPONSE: No, we performed no pilot study. We are however planning to conduct a validation study.

e. Was any reliability test conducted on the questionnaire?

RESPONSE: The overall Cronbach’s alfa is added to the paper.
Reviewer 3: Gulseren Kocaman

1. The background needs to be revised for the related literature. What is already known about the problem and what this article adds could be clarified. There are more evidence that would be included as a literature review. That can be helpful to understand the known to unknown aspects of the topic; like, knowledge resources, EBN skills, etc. Some of them presented in the discussion section. Presenting some results from other studies as a literature review may help to understand of the extent of the problem and support the discussion.

RESPONSE: We agree and have now added several references to organizational and individual factors that can influence on the implementation process of evidence-based practice in hospitals.

2. More details about the instrument (DEBP) are required, such as, psychometric properties of the original tool and the current study, the number and content of items in each section.

RESPONSE: We have added some more information about the questionnaire, including psychometric properties about the original instruments.

3. The rational of choosing independent and dependent variables is not clear. In the Table 3, there are three independent variables (age, years of nursing practice and years since last degree). Especially, first an second variables probably measure same feature. In the same way, in the Table 5, page 9, “nursing and medical journals as source of evidence” were analysed as dependent variables for evaluating evidence based practice skills. Additionally there are some correlational analysis between EBP skills and barriers (page 9, last paragraph). They are also measuring same features (skills), and naturally have high correlations. This points and rationals need to explain and consider for using a theoretical framework and selecting the variables for analysis. There is no any connection or explanation “why adjusted for age?”. According to these results, it is difficult to say “EBP skills will decrease barriers and increase the evidence use”. If thought to be it needs to be clarified.

RESPONSE: The independent variables (nurses’ age, years of nursing practice and years since last health professional degree) have previously been shown to influence practice and were therefore selected for analyses in the present study. In Norway, it is not unusual that nurse students start a bachelor degree in adult age. Therefore, the first and second variables may not measure the same feature. We adjusted for several variables, including age, to examine potential confounding.

4. The paper had some citing from the other studies to support the study results but it is not clear what is the different contribution of this study. What does it mean all of this analysis for practice? It can be clarified the contribution of this research to the literature. Some of the evidence based nursing practice models could be used for discussion section.

RESPONSE: We agree with the reviewer. Recommendations for practice, education and research are now added into the discussion section.
5. Answers the following questions should be written: How will the authors use the results to improve EBP in their context? What are the suggestions for future studies?

RESPONSE: We agree with the reviewer and have added information on how our results can be used for implementation of evidence-based practice.

Minor Essential Revisions
1. Some suggestions for abstract are: The measurement tool could be written under the methods section instead of the aim. The aim of the study written in abstract as “to identify the barriers”, but the study also examine the resources of knowledge and skills for evidence-based practice”. Sample size is 407, not 661. The response rate needs to be added methods section (both abstract and methods in the main text).

RESPONSE: We thank the reviewer for the suggestion and have described the measurement tool in more detail in the methods section. We have updated the aim and sample size as proposed by the reviewer.

2. It looks that the some collected data were not reported. Such as, open-ended questions about the barriers and facilitators of the evidence based nursing practice. Report needs to include that data or the explanation that they are beyond the content of this paper; otherwise they could be removed from the manuscript.

RESPONSE: Yes, open-ended questions were included in our questionnaire, but they were beyond the scope of the current study. We have provided a sentence regarding this in the revised manuscript.

3. Page 8- check the ranking of the barrier items. (between 3-5)

RESPONSE: We thank the reviewer and have corrected the range of the barrier items.

4. Results: The presentation of the results requires editing to facilitate reading and clarity. For example, the statements (as written not shown in table)

RESPONSE: We have restructured the result section for clarification.

5. The table 3 is difficult to understand. Table 3 and related text need revision for clarity and ease of reading.

RESPONSE: This issue was also addressed by reviewer 1. Table 3 now present associations between background variables and use of sources of knowledge and evidence. The variables of knowledge sources were constructed by aggregating the response items within each of the five DEBP questionnaire dimensions. Related text has been revised accordingly.
7. Figure 1 shows how nurses perceive their EBN skills. Not “use” as stated related paragraph on page 9.

**RESPONSE:** We have updated the paragraph.

8. Conclusion repeats the results of the study. Editing also could be helpful to stress the implication of the study.

**RESPONSE:** We agree with the reviewer and have rephrased the conclusion section.