ARTICLE DETAILS

TITLE (PROVISIONAL)	MEASURED AND PERCEIVED IMPACTS OF EVIDENCE-BASED LEADERSHIP IN NURSING: A MIXED METHODS SYSTEMATIC REVIEW PROTOCOL
AUTHORS	Välimäki, Maritta; Lantta, Tella; Hipp, Kirsi; Varpula, Jaakko; Liu, Gaoming; Tang, Yao; Chen, Wenjun; Hu, Shuang; Li, Xianhong

VERSION 1 – REVIEW

REVIEWER	Choong, Yuen-Onn Universiti Tunku Abdul Rahman, Business
REVIEW RETURNED	24-Jul-2021

GENERAL COMMENTS	Question 1: Originality of Research Ideas and Introduction Paper is insightful with significant information in understanding the growth of the field-leadership in nursing. I belief that it will be very useful for researchers to better appreciate the field of study. The intention of the study is not clearly spell out with reasonable justification. The uniqueness of this paper is to provide a useful findings and direction to future researchers whose research interest are on leadership supported by an evidence-based approach. The authors are required to provide more structured literature review and introduction where these two sections were combined which make it difficult to follow by readers. It is well noted that the research on evidence-based approach on leadership supports is lacking. However, it would be good that author provide reasonable argument and justifications that a meta-analysis should be conducted in order to provide valuable directions to researchers for their future research in the field of leadership support for evidence-based approach. More structure introduction is required. Thus, I would suggest authors to relate the necessary of the study to the context of the leadership. How this research work well in the study context. Past studies were explained. The aims of the study are well explained. I would suggest authors to have two separate sections: (1) introduction, and (2) literature review. Introduction should comprise of following important key elements. (1) Briefly describe and illustrate the current issue., (2) Why such study with proposed research gaps is important?, (3) How this research gap relates to current issue?, (4) Why such underexplored piece of work is important to be tested in your study?, (5) Any similar studies conducted in the past?, (6) What is the uniqueness of this study as compared with past empirical studies? and

(7) What are your research objectives?

Question 2: Literature Review
The author does not have a section on literature review. It should have a section which provide an adequate understanding of the relevant literature. All the references cited should be relevant and sufficient. Should also cited more recent citations to show the latest development of the field. This also include the discussion of past studies findings and present their key findings, methods, gaps, etc in a table form for easy illustration and reader able to understand it better.

Question 3: Research Methodology
The research questions should be consistently related with the research objectives. Research objectives should be stated clearly in the introduction with strong justifications and its contributions toward the field of study. The methodology used is appropriate based on the nature of study. A very detailed methodologies and reporting. Very extensive searching to evaluate relevant studies. Searching databases coverage are wide enough: CINAHL, Cochrane library, Elsevier, Medline, PsycINFO, Scopus, WOS, Emerald, Google Scholar, Academy of Management and the Center for Evidence-Based Management.

Is this study being just a proposal on how to conduct a meta-analysis in the field of evidence-based leadership?

1. One suggestion to improve this paper is to provide some uniqueness of this paper method with past studies.

2. To explain how this proposed protocol and method could provide better and stronger results as compared to others.

Question 5: Implications, Limitations and Future Research

Should have following sections:
1. The discussion of findings is not well-written and sufficient. Author should critically discuss the proposed protocol and method to be used to conduct the meta-analysis.

2. Should have a standalone section emphasizing on implications of this study.

3. Limitation and future research should be a standalone section.

4. A conclusion is needed by tightened up in the light of the author argument, which author select and needs to relate it to the introduction.

REVIEWER	Hewko, Sarah
	University of Prince Edward Island, Applied Human Sciences
REVIEW RETURNED	25-Jul-2021

GENERAL COMMENTS	Thank you for exploring important questions related to evidence use for management decisions in healthcare. As you have noted, the literature has focussed far more heavily on use of evidence in clinical practice.
	Major concerns

- Why are you incorporating a search of grey literature if only peer-reviewed, published full-text articles meet your inclusion criteria? Inclusion of grey literature increases the representation of legitimate, equivocal (non-statistically significant) results.
- Please justify the use of the MMAT for appraisal (i.e., describe and cite validation studies or comparative studies demonstrating the tool's effectiveness). From my knowledge of the literature, it would be more rigorous to use the most validated tool for each type of study than to use a jack-of-all trades tool.
- I am not fully seeing the gap in there literature and/or need for this review. The issues identified in the systematic reviews you have detailed (e.g., lack of time, limited access, policy constraints) will not be addressed by achievement of your research objectives. If the problem is largely that nurse leaders/managers don't use research evidence, then how will determining what the research says re: evidence-based nurse leadership/management lead to change? Based on my knowledge of the literature, far more research is available than is perceived by many healthcare leaders as many do not look outside their disciplinary journals for the evidence.
- I think that you will find that most processes described in the literature for evidence-based leadership will not meet all of your assumptions. Specifically, very few (if any) studies are likely to indicate that critical appraisal of the literature to support management practices is occurring among front-line nurses or nurse managers (page 11, line 39). As you have indicated in the introduction when reviewing the findings of relevant systematic reviews, most nurse leaders rely on their own knowledge and experience in a situation and/or on the experience/knowledge of their colleagues.
- Include: "evidence-informed"/"evidence informed" and "unit manag*" in your search terminology.
- Will the quality assessment be incorporated into the synthesis/reporting of your review results at all? If not, why conduct quality analysis? Ideally, you will use the most rigorous tools for each study type and either eliminate low quality studies from analysis or conduct sensitivity analysis to demonstrate the impact of including low quality results on the findings.

Secondary concerns:
- Please remove the term "mixed-methods" from describing your review. Combining a narrative synthesis with quantitative synthesis is not "mixed-methods." A more accurate description would be a "systematic review of both qualitative and quantitative studies".
- Your cited sources of grey literature appear inaccurate --> more commonly this would be databases of government reports and/or databases of theses. e.g., Academy of Management would not be a common source of grey literature.
- You have not included a systematic review on the topic of nurse managers' use of evidence in their management practice by Tate et al. (2019) published in the Journal of Health Services Research and Policy. Full disclosure, I am an author on the paper, but I do think that it would be relevant to include here (page 8, line 13).
- Please defend/describe in greater detail your approach to narrative synthesis. Narrative synthesis has the potential to be biased (see Campbell et al. (2019) in the J Clinic Epidemiol); how will you ensure rigour (e.g., see Rodgers et al. 2009 in Evaluation)?
- Hand-search references can introduce citation bias (see Vassar et al. 2021 in JMLA). If you find a number of studies this way that

	didn't come up in your search, it is an indication that your search was poorly performed. - Will XL review every extraction or a selection of extractions? If a selection, how will those to be audited/reviewed be selected? (page 15, line 18) - What does "The selected papers will be extracted by three authors, and inputted into predesigned tables; the process will be validated" mean? (page 15, line 23-24). (i.e., consider "relevant results from included papers will be extracted..." How will the process be validated? Will the reviewers complete one extraction as a test and compare results before going on to perform the remainder of the extractions? - I don't know what this means: page 16, line 20 ("studies will be deemed to have risk of bias if they fail to make objective decisions on study design and on the level of quality required") Minor concerns - There are some language issues that detract from clarity throughout the paper (e.g., "The approach is usable to our review on Page 10, line 13; "an evidence-based leadership occurs when" on Page 111, line 12) - What will you do if you find a relevant abstract but cannot access the full-text. Will you contact the study authors for findings? - Identify the specific Reference Manager you will use or just indicate that you will use one (vs. saying EndNote or other..." Thank you!

VERSION 1 – AUTHOR RESPONSE

Reviewer #1

1.   Originality of Research Ideas and Introduction

Paper is insightful with significant information in understanding the growth of the field-leadership in nursing. I belief that it will be very useful for researchers to better appreciate the field of study. The intention of the study is not clearly spell out with reasonable justification. The uniqueness of this paper is to provide a useful findings and direction to future researchers whose research interest are on leadership supported by an evidence-based approach.

It is well noted that the research on evidence-based approach on leadership supports is lacking. However, it would be good that author provide reasonable argument and justifications that a meta-analysis should be conducted in order to provide valuable directions to researchers for their future research in the field of leadership support for evidence-based approach.

RESPONSE: Thank you for your thoughts related to the justification of the review. To clarify the intention and justification of the review, the rationale and justification of the paper has been modified. Please see the modified Introduction and Discussion sections.

More structure introduction is required. Thus, I would suggest authors to relate the necessary of the study to the context of the leadership. How this research work well in the study context. Past studies were explained. The aims of the study are well explained.

I would suggest authors to have two separate sections: (1) introduction, and (2) literature review.

[NOTE FROM THE EDITORS: we disagree with this suggestion, it would not be appropriate to have a detailed literature review in a protocol for a systematic review, as you have not yet done the systematic literature search and appraisal. Please just rebut this request from the review]

RESPONSE: No actions taken.

Introduction should comprise of following important key elements.

(1) Briefly describe and illustrate the current issue.,

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(2) Why such study with proposed research gaps is important?,

(3) How this research gap relates to current issue?,

(4) Why such underexplored piece of work is important to be tested in your study?,

(5) Any similar studies conducted in the past?,

(6) What is the uniqueness of this study as compared with past empirical studies? and

(7) What are your research objectives?

RESPONSE: We have moved the aim and research questions from Methods section to the Introduction, under the sub-title Study objectives. We have also rewritten the whole Introduction section and restructured its content based on the Reviewer's feedback.

2.　　　Research Methodology

The research questions should be consistently related with the research objectives. Research objectives should be stated clearly in the introduction with strong justifications and its contributions toward the field of study.

RESPONSE: The focus of the Introduction section has been modified so that its content is in line with the research objectives.

The methodology used is appropriate based on the nature of study. A very detailed methodologies and reporting. Very extensive searching to evaluate relevant studies. Searching databases coverage are wide enough: CINAHL, Cochrane library, Elsevier, Medline, PsycINFO, Scopus, WOS, Emerald, Google Scholar, Academy of Management and the Center for Evidence-Based Management.

Is this study being just a proposal on how to conduct a meta-analysis in the field of evidence-based leadership?

RESPONSE: This manuscript will be the proposal of the systematic review only.

(1.) One suggestion to improve this paper is to provide some uniqueness of this paper method with past studies.

(2.) To explain how this proposed protocol and method could provide better and stronger results as compared to others.

RESPONSE: The two points raised above have been added to the Discussion section.

3.　　　Implications, Limitations and Future Research

Should have following sections:

(1.) The discussion of findings is not well-written and sufficient. Author should critically discuss the proposed protocol and method to be used to conduct the meta-analysis.

(2.) Should have a standalone section emphasizing on implications of this study.

(3.) Limitation and future research should be a standalone section.

(4.) A conclusion is needed by tightened up in the light of the author argument, which author select and needs to relate it to the introduction.

RESPONSE: We have rewritten the Discussion section based on the Reviewer's comments. However, as the journal guideline does not include a Discussion section, we tried to be careful to not overinterpret our review, which is in only in the proposal stage.

Reviewer #2

Major concerns

1.　　　Why are you incorporating a search of grey literature if only peer-reviewed, published full-text articles meet your inclusion criteria? Inclusion of grey literature increases the representation of legitimate, equivocal (non-statistically significant) results.

RESPONSE: We deleted the search of grey literature.

2.　　　Please justify the use of the MMAT for appraisal (i.e., describe and cite validation studies or comparative studies demonstrating the tool's effectiveness). From my knowledge of the literature, it would be more rigorous to use the most validated tool for each type of study than to use a jack-of-all trades tool.

RESPONSE: More specific appraisal tools will be used in the review in line with the design used in each study as proposed by the Reviewer: CASP for qualitative studies, STROBE for the cross-sectional studies, Cochrane Collaboration's tool for trials and MMAT for mixed-methods studies. Please see the section Risk of bias in individual studies for further details.

3.   I am not fully seeing the gap in there literature and/or need for this review. The issues identified in the systematic reviews you have detailed (e.g., lack of time, limited access, policy constraints) will not be addressed by achievement of your research objectives. If the problem is largely that nurse leaders/managers don't use research evidence, then how will determining what the research says re: evidence-based nurse leadership/management lead to change? Based on my knowledge of the literature, far more research is available than is perceived by many healthcare leaders as many do not look outside their disciplinary journals for the evidence.

RESPONSE: The Introduction section has been rewritten based on the Reviewer's comment by improving the focus of current literature, identifying the knowledge gap, and justifying the need for the review. A lot of non-relevant text has been deleted.

I think that you will find that most processes described in the literature for evidence-based leadership will not meet all of your assumptions. Specifically, very few (if any) studies are likely to indicate that critical appraisal of the literature to support management practices is occurring among front-line nurses or nurse managers (page 11, line 39). As you have indicated in the introduction when reviewing the findings of relevant systematic reviews, most nurse leaders rely on their own knowledge and experience in a situation and/or on the experience/knowledge of their colleagues.

RESPONSE: We acknowledge the possible lack of previous studies in relation to our research questions. Therefore, articles to be included in this review are required to identify at least one part of the EBP process, but not all five. We still hope that the literature review will both instruct the development needs of nurse leadership practices and demonstrate the gaps in the current literature.

4.   Include: "evidence-informed"/"evidence informed" and "unit manag*" in your search terminology.

RESPONSE: The search terms proposed above have been added to the search terms after discussion with the information specialist at the medical library. Please see the Supplementary Table.

Will the quality assessment be incorporated into the synthesis/reporting of your review results at all? If not, why conduct quality analysis? Ideally, you will use the most rigorous tools for each study type and either eliminate low quality studies from analysis or conduct sensitivity analysis to demonstrate the impact of including low quality results on the findings.

RESPONSE: Based on the comment, more specific quality assessment tools will be used.

Secondary concerns

5.   Please remove the term "mixed-methods" from describing your review. Combining a narrative synthesis with quantitative synthesis is not "mixed-methods." A more accurate description would be a "systematic review of both qualitative and quantitative studies".

RESPONSE: We have added more detailed information on why a mixed methods approach is suitable for our review. We will follow the methodology manual by the Joanna Briggs Institute, which provides examples of conducting a mixed methods review.

Your cited sources of grey literature appear inaccurate --> more commonly this would be databases of government reports and/or databases of theses. e.g., Academy of Management would not be a common source of grey literature.

RESPONSE: The search of grey literature has been deleted.

6.   You have not included a systematic review on the topic of nurse managers' use of evidence in their management practice by Tate et al. (2019) published in the Journal of Health Services Research and Policy. Full disclosure, I am an author on the paper, but I do think that it would be relevant to include here (page 8, line 13).

RESPONSE: Thank you for this reasonable suggestion. We have included the review into the manuscript.

Tate K, Hewko S, McLane P, et al. Learning to lead: a review and synthesis of literature examining health care managers' use of knowledge. J Health Serv Res Policy. 2019;24(1):57–70.

7.	Please defend/describe in greater detail your approach to narrative synthesis. Narrative synthesis has the potential to be biased (see Campbell et al. (2019) in the J Clinic Epidemiol); how will you ensure rigour (e.g., see Rodgers et al. 2009 in Evaluation)?
RESPONSE: More emphasis has been put on narrative synthesis in the section on methods (how to do the analysis) and in the Discussion (limitations and benefits).

8.	Hand-search references can introduce citation bias (see Vassar et al. 2021 in JMLA). If you find a number of studies this way that didn't come up in your search, it is an indication that your search was poorly performed.
RESPONSE: Thank you for the valuable comment. The point with a reference has been added into the manuscript.
"If a high number of studies are found using a hand search, the search strategy will be modified.[39]"

9.	Will XL review every extraction or a selection of extractions? If a selection, how will those to be audited/reviewed be selected? (page 15, line 18)
RESPONSE: XL will review all the extractions that three other authors have tabled. This has been clarified as follows:
"and the tabled extractions will be reviewed for completeness and accuracy by another author (XL)."

10.	What does "The selected papers will be extracted by three authors, and inputted into predesigned tables; the process will be validated" mean? (page 15, line 23-24). (i.e., consider "relevant results from included papers will be extracted..." How will the process be validated? Will the reviewers complete one extraction as a test and compare results before going on to perform the remainder of the extractions?
RESPONSE: The validation process has been described in more detail.
I don't know what this means: page 16, line 20 ("studies will be deemed to have risk of bias if they fail to make objective decisions on study design and on the level of quality required")
RESPONSE: The paragraph has been modified, and the specific sentence above has been deleted.
Minor concerns

11.	There are some language issues that detract from clarity throughout the paper (e.g., "The approach is usable to our review on Page 10, line 13; "an evidence-based leadership occurs when" on Page 111, line 12)
RESPONSE: The language of the manuscript has been re-checekd by a native English-speaking expert.

12.	What will you do if you find a relevant abstract but cannot access the full-text. Will you contact the study authors for findings?
RESPONSE: The text has been modified as follows: "If access to any full-text article is lacking, we will contact the study authors to obtain the full text or the findings of the study".

13.	Identify the specific Reference Manager you will use or just indicate that you will use one (vs. saying EndNote or other..."
RESPONSE: We have clarified this sentence as follows:
"A reference management software will be used to efficiently…"

VERSION 2 – REVIEW

REVIEWER	Hewko, Sarah University of Prince Edward Island, Applied Human Sciences
REVIEW RETURNED	01-Oct-2021

GENERAL COMMENTS	Thank you for your thorough revision. Minor remaining language issues can/will be addressed at the copy-editing stage.