Author's response to reviews

Title: Identifying relevant concepts and factors for the sustainability of evidence-based practices within acute care contexts: A systematic review and theory analysis of selected sustainability frameworks.

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Response to Reviewers for IMPS-D-19-00250R1

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REVIEWER 1 (Rachel Tabak)

Reviewers 1 Comments Response
1. Overall, the manuscript is improved, particularly with regard to clarity around the objectives and addition of methodological details. The topic is important, and the manuscript can be a nice contribution. Thank you for your comment.
2. The distinction between "general healthcare setting (37% or 23/62)" in line 114 and "unspecified similar healthcare organization/setting" (line 127) is still not clear. What distinguishes a healthcare setting, which is not acute care or 'general', but is 'similar' to acute care? Maybe some examples of how the originators of the F/M/Ts that focus on 'non-specified similar healthcare organizational/settings' describe the organization and/or setting could be provided?
Thank you for pointing out how this use of the terms ‘general’ in line 114 and ‘similar’ in line 127 may be confusing.

To clarify what was meant in Line 114 by general healthcare setting... Lennox et al 2018, specifies “37% (23/62) of approaches were designed for use in general healthcare settings and did not specify a specific healthcare setting for use” (p. 9). Additionally, in Additional File 1, Lennox explicitly states approaches were designed for use in non-specified healthcare settings with either a target use for (i) healthcare organizations or systems, or (ii) healthcare interventions or programmes”.

As a result, Line 113 to 115 now reads... “Specifically, the majority of sustainability F/M/Ts and approaches are designed for use in non-specified healthcare settings (37% or 23/62) (e.g. healthcare organizations or systems, followed by...)

Line 127 now reads “an unspecified healthcare organization/setting”

Line 571 Table 3 – Recommended setting for use - Examples are referenced in Table 3 for each F/M/T included in this review e.g. applicable to multiple settings (Mayer et al 2010, Slaghuis et al 2011.), a broad range of healthcare services interventions or a myriad of clinical settings (Chambers et al 2013), or organizational settings providing healthcare and human care services (Buchanan et al 2005, Racine 2006).

Line 158-159 To be consistent, within the eligibility criteria section, the word ‘similar’ has been removed... and now reads “in an unspecified healthcare organization/setting”

3. The introduction now mentions that a 'modified theory analysis approach' is used (lines 127-128), but the paper could still benefit from a description of and justification for choosing this method. Further, additional detail about what the "theory analyses approach by Walker and Avant" entails might support this paragraph (lines 176-185) of the methods. Additional information about what a theory analysis approach by Walker and Avant entails is provided in Lines 175-182 as follows ...

A theory analysis of the identified F/M/Ts was undertaken as a means of understanding their theoretical underpinnings, paying particular attention to the key concepts (factors) influencing the sustained use of EBPs for acute care(35). According to Walker and Avant (36), theory analysis involves consideration of seven elements: (i) determining origins, (ii) examining meaning of concepts and their relationships; (iii) analyzing the logical adequacy of concepts and relational statements to determine predictive ability to generate hypotheses, (iv) determining usefulness for practice and predicting outcomes, (v) defining generalizability across settings, (vi) defining the degree of parsimony and language clarity, and (vii) determining testability.

4. While helpful, the new list of exclusion criteria (lines 161-166) was still somewhat hard to follow. Would a framework that includes implementation and sustainability always be excluded? Or would it be excluded only if it included implementation and sustainability without an explicit breakdown of related sustainability factors and concepts? Based on the first paragraph of the results (189-193), it seems like the later, but it could be helpful if this was explicit in the methods.

Thank you for this suggestion as you are correct in your interpretation. Thus the exclusion criteria has been rewritten to reduce confusion and to align better with the Results section (now Line 191-197).
It now reads...
Line 160-164—“A citation was excluded if the F/M/T was not recommended for healthcare; was recommended only for use within a specified setting other than acute care (e.g. public health or community); if it contained only an Implementation F/M/T; and if it contained an Implementation and Sustainability F/M/T without an explicit breakdown of related sustainability factors”.
5. Additional clarification for and definition of 'meaning' as a heading in line 214 may be helpful to readers.
   To enhance clarity and to better reflect what this element involves ... on Line 565 Table 2 the title ‘Meaning’ has been changed to “Meaning of Framework/Model/Theory (F/M/T).” Additionally, on Line 217 the heading ’Meaning’ has been changed to... “Meaning of the F/M/T” and is followed by this sentence to enhance clarity... To examine how originators defined the constructs of sustainability, conceptual definitions for sustainability were mapped to the five constructs of a comprehensive definition recently published by Moore et al (1) (see Table 4).
6. The review lumps research and practice together, but often F/M/Ts are better suited for one or the other. Could the authors comment on the eight identified F/M/Ts, and whether they are truly all equally suited to each?
   Line 571 -Table 3 now includes an additional column outlining intended ‘Target Audience’ by originators i.e. researchers, practitioners, administrators, funders, grantors or policy makers.
Line 213-214- reads...Some F/M/Ts were intended for multiple audiences, namely researchers(13, 25, 34, 39-42)(43), practitioners (13, 34, 39-42), policy makers (34), administration (13)and funders/grantors (42).
7. Lines 484-485: "Second, the new systematic review, designed to identify recently published F/M/Ts, searched only healthcare databases” How is this search method similar to/different from the initial two reviews in terms of databases searched? Figure 1, p. 29 - Together the two syntheses searched fourteen different databases. (see Figure 1 which outlines databases in each synthesis and new systematic review).

Databases searched in the 2 Syntheses and New Systematic Review
Lennox et al 2018 – Ovid Journals-full text, Medline, Embase, HMC
Moore et al 2017 – includeds databases from 4 SRs- CINAHL,Medline, Embase, Cochrane Library, ERIC, Health Source, ISI, PsycoINFO, Academic Search Primier,Campbell, GIN, Google Schola
New SR - CINAHL,Medline, Embase, Ovid -ProQuest
Line 485-487 The limitation section has a notation comparing databases searched within the two syntheses and the new systematic review conducted...It reads... The new systematic review, designed to identify recently published F/M/Ts, included four key databases, known to focus on healthcare and/or implementation science, among the fourteen combined databases used within the two syntheses.
8. Reviewer 2 makes a very important comment: "Thus, it is unclear how strategies for sustainment differ from strategies for implementation and why different FMTs are needed". Though implementation is not a focus of this review, addressing the potential overlap between such strategies seems important.
Thank you for this comment and revisions have been made to include the important consideration related to the potential overlap between implementation and sustainability strategies overtime as well...

Line 413 -415...in the Discussion section: The shift in perspective of sustainability as a ‘process or ongoing/continuous stage/phase’ (3, 10), together with the EBPs’ evolutionary nature and dynamic interaction/influence among the factors overtime (3, 34), highlights the complexity of planning and measuring sustainability and the need to consider how strategies for sustainment overtime differ from implementation and/or potentially overlap.

Additionally, a rewording of the Conclusion highlights the importance and need for future research in this area …Line 503 -505. We also recommend future inquiry adopt the use of mixed methodologies to explore the complex relationship between implementation factors and outcomes (including sustainability), and determine their level of influence using Proctors’ Framework (2009).

Line 508 Additionally, using a theory analysis approach to examine F/M/Ts containing both implementation and sustainability could provide new insight into the relationship of factors overtime (e.g. early, mid-process and long-term), and/or the potential impact of implementation on the sustainability phase.

9. This paper still had a number of grammatical errors (a few examples: first sentence of the Results ’Of the 2967 citations identified, eight met the inclusion criteria (e.g. 4 from Moore et al. (1), 3 from Lennox et al. (10), 1 from the new systematic review) and eligible for theory analysis’)

An English Professor reviewed this document for grammatical errors before submission and corrections have been made.

10. The additional files (particularly the two excel files) could benefit additional explanation, so they can be interpreted. For example, what do the colors mean in Additional file 3?

Thank you for this observation and feedback regarding Additional Files 3 & 4. Both excel files now have a legend placed at the top of the tables with explanation of what the colour coding represents to enhance clarity and interpretation of findings.

The revised documents (e.g. Additional File 3 and Additional File 4) are uploaded with this submission.

Reviewer 2 Comments Response

Thank you for addressing each of my comments. The Walker and Avant theory analysis is an interesting approach to evaluate multiple theories and further develop constructs. This method requires a significant amount of effort. I commend the authors for tackling this work. Sustainability of EBP in acute care (or virtually any setting) is an important issue relevant to implementation science. The results spurred numerous questions related to the advancement of sustainability and implementation science. In other papers, the sheer number of lingering questions may be of concern. However, I believe this is a strength of this paper - highlighting major areas requiring more intensive, directed research to better understand sustainability, and its relation to implementation. Thank you for your comments and suggestions to enhance this paper.