**Reviewer’s report**

**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.

**Version:** 0  **Date:** 24 Jun 2019

**Reviewer:** Clayton Shuman

**Reviewer's report:**

The authors present a review and analysis of frameworks, models, and theories specific to sustainability of EBPs in acute care settings. Sustainability is a critical area in implementation science. However, I have numerous concerns regarding this manuscript.

**Major:**
What is the authors' definition of sustainability? Although the Moore et al. is used in the analysis, it is not entirely clear why the authors chose the Moore et al. definition of sustainability to guide their analysis and if this represents their own definition of sustainability. In the end, their results seem to simply restate the Moore et al. definition.

The authors contend that sustainability should be investigated as a "distinct concept." Although sustainability may be conceptually distinct from implementation, it is highly related to implementation. Implementation interventions guided by published f/m/t's can also contribute to sustainability. Thus, failure to include implementation F/M/Ts eliminates potentially valuable sources of information to guide/explain sustainability in acute care. For example, Shuman et al. (2018) used the Translation Research Model to guide both implementation and sustainability (DOI: 10.1177/0193945917738781). The relationships between implementation and sustainability need to be discussed, drawing particular attention to how investigating sustainability is distinct from investigating implementation. Otherwise, I am still not convinced one can focus solely on sustainability without any attention to the implementation preceding it. Further, although presence of themes vary across the include FMTs, the core factors in table 5 look identical to implementation factors included in most implementation FMTs. Thus, it is unclear how strategies for sustainment differ from strategies for implementation and why different FMTs are needed. This needs to be addressed.

Since "sustainability is a relatively new concept" why did the authors exclude all FMTs outside of acute care? Further, the rationale for a theory analysis is unclear, especially considering that the concept itself is new and under researched. Of the 8 included FMTs, only 3 were specific to acute care. It is unclear how sustainability as a concept differs across settings. Thus, I question the rationale for restricting study selection by setting.

**Other concerns:**
Inner context vs. inner process vs. leadership and management. These three themes are presented as being distinct but the differences between them is unclear. For example why is leadership and management not included in the inner context?

Pg 16, line 405ff: It is unclear how "process" and "ongoing" differs from "continued use" and "evolution/adaptation." I am not convinced the authors have identified anything new to add to the definition of sustainability. Evolution and continued use do not reflect an endpoint but suggest an ongoing process. Further, at some point, an organization will consider the EBP sustained and move attention elsewhere.

It is unclear how this analysis contributes to practice and research. How are clinicians and healthcare leaders to use and apply these results? What are your recommendations for implementation research in light of your review? Should there be 1) implementation scientists and 2) sustainability scientists or is there considerable crossover? Should we expand implementation FMTs to include sustainability or should we foster development of two different FMTs to guide implementation and sustainment of the same EBI?

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An article of importance in its field

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