Author’s response to reviews

Title: A Scoping Review of Full-Spectrum Knowledge Translation Theories, Models and Frameworks

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Michael Winseng
Editor
Implementation Science

Dear Michael Winseng:

Thank you for the opportunity to revise our manuscript entitled ‘A Scoping Review of Full-Spectrum Knowledge Translation Theories, Models and Frameworks’ (IMPS-D-19-00005). Below we outline the comments received from the two reviewers (bolded) with our responses below. We have tracked changes in the manuscript itself and have also provided a clean copy. Once again, the reviewers’ comments have substantially improved the manuscript and we hope that this version is now acceptable for publication in Implementation Science.

Each of the listed co-authors provided input into both the development and the writing of this paper, and each has approved this final manuscript. The details of how each author contributed to
this paper have been described in the manuscript. All authors have agreed to the submission to the journal and the manuscript is not currently under submission in any other journal.

We look forward to hearing from you,

Sincerely,

Fiona Clement on behalf of all the co-authors

Reviewer reports:

Reviewer #1

Reviewer #1: This paper is a resubmission of a paper previously submitted, and rejected, by Implementation Science in February 2019. The editor advised that he was happy to have the authors resubmit if they considered they could address the methodological issues raised by both reviewers. The authors have therefore submitted a clean new version of the paper, a tracked revision, and a detailed rebuttal table in which they address in detail the reviewers' comments.

Overall I consider that the reviewers have addressed adequately the methodological issues raised by R1 and R2. In short, the two key changes are to describe (correctly) that the review is a scoping review (using systematic methods) and the second is that the categorization of novice/expert and ease of use has been removed from the manuscript.

Major comments:

1. While it is appropriate to remove the section on the categorization of novice/expert and ease of use given the methodological issues with this section of the original paper, its omission does weaken the originality and utility of the paper.

Thank you for this comment. In the tracked changes version, discussion section on page 25, lines 526 to 535 we have described the need to consider the selection of a KT TMF based on objective criteria on ease of use or usability as an area that can be considered for future research.

Minor comments


We apologize for this oversight. We have now added this reference on page 8, line 144.
3. Search results p.11, 210-214. This reads oddly here, as it is usual to start this section by summarising figure 1. I suggest this is moved so it appears after the next section.

We have removed the heading ‘Search Results’ to coincide with the next paragraph on page 12, line 232.

Reviewer #2

Overall comments:

This version of the manuscript is significantly improved from the version that I reviewed previously, and its methodology has been strengthened. Overall, there is still a place for reviews such as these in the field, because researchers and practitioners face significant challenges in deciding the models, theories of frameworks that is most appropriate for their particular context. Often, the more popular frameworks such as CFIR or RE-AIM are mechanically applied without any structured thought process as to their fit, or whether the context demands an underlying theoretical approach or whether it is adequate to use a framework as a guide. Tools such as T-CAST have tried to bring some structure to the framework selection process, but they have not been used widely, and therefore their utility across multiple settings is yet to be determined. Therefore, manuscripts of this type will make a contribution to the field.

This being said, I feel that this manuscript at this point does not go far enough to aid implementation science professionals in the selection of TMF and in some respect increases the confusion in the field. I have three major comments:

a) Most important, I don't see how this article furthers Nilsen's initial work. The real benefit of this work would be to provide stronger guidance on the contexts in which different theories, models and frameworks are appropriate, with examples of how they have been used. This article primarily provides a list of frameworks under categories, just as Nilsen has done, except that they are relabeled as KT frameworks instead of IS frameworks. I realize that this is a scoping review but I am not sure what it adds beyond what has been done by Nilsen in the IS context.

Thank you for this thoughtful and thorough comment. Our scoping review significantly adds to the literature using Nilsen’s work but achieves a different research objective than Nilsen. We apply Nilsen’s approach to categorize full-spectrum KT TMFs identified through a systematic search of the literature, which has not been done previously. In Table 1 of Nilsen’s paper, only examples of TMFs that could fit each of the five categories has been provided. This scoping review applies Nilsen’s categories to an up-to-date and concise list of all full-spectrum KT TMFs. In doing so, it provides the user with the ability to compare and contrast full-spectrum KT TMFs within each of Nilsen’s approach categories to determine which may be useful based on the KT project or intervention being undertaken. Moreover, previously published TMF reviews including Tabak (2012), Lokker (2015), Milat (2017), and Strifler (2018) only provided lists of
TMFs without any categorization of approaches. This is a significant, valuable contribution resulting from this scoping review.

b) The paper makes a distinction between knowledge translation frameworks and implementation science frameworks with the claim that KT frameworks address design, implementation, evaluation and sustainability. Yet in the final list, many of the KT frameworks are IS frameworks, and therefore this paper creates yet another taxonomy in an already fractured field. It is not value added to rebrand a IS framework as a KT framework - it just causes more confusion. It would be useful for the authors to describe the link between the definition of the same frameworks as KT and IS frameworks more clearly.

Thank you for this feedback. The goal of this research was not to create further confusion in the field. As such, the following paragraph has been inserted in the background section of the manuscript on page 6, lines 102 to 116 and the references have been added to the references section:

“The field of KT is marred by a profusion of terms. In fact, 100 terms have been found to describe knowledge translation research (Mckibbon et al, 2010). In the literature and amongst different jurisdictions, KT has been used interchangeably with terms such as research utilization, knowledge transfer and uptake, knowledge utilization and exchange, and implementation science (IS). In particular, KT’s relationship to IS has caused confusion (Graham, 2006). KT and IS are related and overlapping terms (Wensing et al, 2019). IS may be considered a sub-speciality of KT (Barwick, 2018). IS defined as “the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice to improve the quality and effectiveness of health services and care” (Eccles et al, 2006). In this paper, as with the previously published scoping review by Strifler et al, KT has been considered broadly to include implementation practice (implementing research evidence into practice) and implementation science (study of methods to promote uptake of research findings into practice) (Strifler et al, 2018). The full-spectrum KT TMFs covered in this review encompass the entire continuum of KT activities including IS. KT and IS TMFs have been referred to as KT TMFs, collectively. Further, for the practitioner, the use of these KT TMFs requires consideration of their purpose and context.”

References:


c) I made a comment in the previous version of this paper that while this seems to have become the norm, clubbing together Models, Theories and Frameworks as though they are interchangeable does not encourage IS or KT professionals to think deeply about whether their context requires a theory driven approach, or whether their primary interest is in organizing information systematically using a framework. This choice has an implication on the results of the study, because they have implications about the generalizability of results or about mechanisms of knowledge translation. The initial methodological consideration for a research study should first be about the choice between these categories, and that should drive a subsequent decision about the appropriate instrument. There is little guidance in the literature about how to do this, but this would be an enhancement to the field. Nilsen’s initial work helped to categorize the plethora of approaches in the field, but he himself indicates that it was only meant to be a guideline, and the distinctions among his categories are not precise. Further refining Nilsen's categorization would be an advancement to the field. In my opinion, treating Nilsen’s categories as the final statement on models, theories and frameworks builds on imperfect foundations. I am not expecting this article to address this issue but I want to document it as a limitation of this work.

We agree with the comment of ‘not clubbing together models, theories, and frameworks’. The definitions of a theory, model and framework have been described on page 9, lines 166 to 171. As an entity, we considered ‘TMF’ together as the unit when reviewing them as full-spectrum. This has been added on page 9, lines 171 to 172. We agree that these terms are not synonyms and there is a need for future research to provide guidance on how to determine which approach to use i.e. a theory, model or framework based on the research study and context prior to the actual selection of the TMF. This has been added in the discussion section on page 27, lines 569 to 571.

We agree that Nilsen's work is meant to be a guideline, and the distinctions among the categories are not precise. Nilsen’s taxonomy is meant to be a starting point with selecting which full-spectrum KT TMF to use based on its purpose. We have added this under the limitations section on page 27, lines 573 to 574, and line 577.
As a scoping review, there is clearly only so much that this article can cover. But its greatest contribution would be to connect this work with the work of Nilsen and describe how it extends that work. As a stand alone article, it feels like it duplicates work that has already been done, but just relabels it as Knowledge Translation instead of Implementation Science.

This has been addressed above under comments (a) and (b).

Detailed comments

Line 103: Perhaps a different word? "Myriad" conveys the impression that there are thousands, and while that might seem to be so, "many" would probably suffice.

Changed to ‘many’ on page 7, line 117.

Line 122: There are already several tools including T-CAST that you mention later in the paper. Is the contribution of your paper different? You talk about a concise resource to aid in the selection of a TMF, but T-CAST already does that. How is yours different?

The authors of the T-CAST tool state that users of the tool will find it helpful for deciding whether a specific TMF is relevant for their project or for deciding which of several TMFs is most relevant for their project. As such the T-CAST tool aids in the selection of TMFs from among a candidate list. However, they identify that there is a limitation in the lack of comprehensive lists of TMFs. This scoping review provides a list for users to review the range of candidate full-spectrum TMFs available and subsequently apply the T-CAST tool to compare and select a KT TMF. This distinction has been added in the discussion section on page 25, lines 519 to 524.

Line 126: I realize that the objective of the scoping review is to identify TMFs that researchers or practitioners can select for program planning or research design. But that does not mean that TMFs that have been used retrospectively should be omitted. An evaluation framework can always be adapted proactively to be a planning framework, so omitting them doesn’t seem necessary.

We agree that a TMF can be applied retrospectively, however, for the purposes of this review the decision was made by the authorship team to only include TMFs applied prospectively at least once. TMFs that are adapted proactively were included if this occurred during the project rather than after project completion. The word ‘only’ has been included on page 9, line 178.

Line 221: It was not clear what the “47 references” are referring to

These are references from the Milat et al review (n=41) and six articles identified from the hand search of the reference list of the eight articles identified from the database search. This has been clarified on page 12, lines 239 to 241. Also, see figure 1-PRISMA diagram.

Line 224: It is difficult to understand the arithmetic of how the final number of studies was reached. There is reference to 8 studies from the database search and 5 from the references
search. 19 that were not included is mentioned. But the final count is 36. I did not see a flowchart describing the search process and inclusions/exclusions in the package. This needs to be added to clarify the methods section.

Please refer figure 1 that describes the PRISMA diagram of how the final number of studies was reached. The inclusion and exclusion criteria are described on page 9, lines 163 to 185.

Line 231: It wasn’t clear why the literature was separated by papers published after 1997 and those before. Is there anything special about 1997?

There was nothing special about the year 1997. It was the year that the majority of the papers were published after.

Line 254: The 18 process models are grouped into sub-categories, but the rationale for this grouping is not clear. Is there a theory or heuristic guiding this grouping? Having subheadings describing the groups would be useful for readability, at the moment is just free form paragraphs.

There is no theory or heuristic guiding this grouping. The following sub-headings have been added on pages 14 to 15, lines 277, 288 and 297:

* TMFs that Build on Existing TMFs
* TMFs that use Stages to describe the KT Process
* Meta-framework or Network TMFs

Line 283: Since the objective of the paper is to assist in the selection of TMFs, it would be useful for the authors to provide insights about which process models are useful for which kinds of problems. As mentioned above, this section seems like an enumeration of the literature without an organizing principle or theory that allows a reader to understand how these are useful.

The objective of this paper is to provide a candidate list of full-spectrum TMFs to select from. In table 3, a description and context of each of the process KT TMFs is provided.

Line 301: I am confused about the categorization of classic behavioral change theories such as social cognition theory or self-regulation theories as KT theories. Clearly these theories can be used for developing implementation strategies, but they are not KT theories.

Please see response to comment (b) above. KT and IS TMFs have been referred to ‘TMFs’, collectively.

Line 371: If frameworks were eliminated because they were not prospective, then it is not clear why evaluation frameworks such as RE-AIM were included. As I mentioned earlier, many frameworks can be used both prospectively rather than retrospectively, so maybe I am not understanding the basis for excluding some because they were used retrospectively.
A KT TMF that was applied only retrospectively to determine fit after project completion or for refinement was not considered. The word ‘only’ has been added on page 9, line 178. RE-AIM has been applied both prospectively and retrospectively and as such it was included.

Line 377: The statement that RE-AIM is “purely quantitative” is unclear. Does it mean that instruments exist for measuring each of the constructs? But RE-AIM is also used for qualitative interviews, so the assertion that it is “purely quantitative” seems incorrect.

RE-AIM is an evaluation framework for public health. The public health impact of an intervention is calculated as a function of 5 factors: reach, efficacy, adoption, implementation, and maintenance. Each of the 5 RE-AIM dimensions is represented on a 0 to 1 (or 0% to 100%) scale. Therefore, it was stated that it is quantitative.

Line 400: What is the basis for this classification? It is not as though the frameworks that you have described above can only fit in one category. Nilsen's classification is a guide, but the categories are not rigid. For example, the CFIR domains were derived from DIT and from other organizational theories and it can be argued that CFIR spans more than one theoretical approach as well. What makes these theories different from what you have described earlier?

Please refer to response under comment (c) above.

We agree that misclassification can occur with these categories. It has been identified as a limitation of Nilsen's categories and this scoping review. We have added this under the limitations section on page 27, lines 573 to 574, and line 577.

Line 445: It is not clear how the compilation in this article is significantly different from what Nilsen has done earlier other than the fact that these have been redefined as KT frameworks and therefore relevant for a broader scope than just implementation. But the paper never describes how these theories can be used across the full spectrum of KT activities, and therefore do not necessarily extend what Nilsen has done.

Please refer to response under comments (a) and (b) above.

Line 454: I disagree with this conclusion. As I mentioned earlier, Nilsen never intended these categories to be rigid, and the value to researchers and practitioners is if guidance was provided about the kinds of situations in which each TMF within a category would be useful rather than across categories. For example, there are four determinant frameworks that have been identified. When is CFIR better, for example, than the Social Marketing Framework or the Knowledge Integration Process?

We agree that Nilsen's work is meant to be a guideline, and the distinctions among the categories are not precise. Nilsen’s taxonomy is meant to be a starting point with selecting which full-spectrum KT TMF to use based on its purpose. We have added this under the limitations section on page 27, lines 573 to 574, and line 577.
There are three determinant frameworks identified not four: CFIR, the social marketing framework and the knowledge integration process. There are two additional ones that fit both the classic theory and determinant framework categories: the community connection model and the community to community mentoring model.

With respect to the comparison between CFIR versus social marketing framework versus this knowledge integration process-this paper is meant to be a resource from which users can then apply the T-CAST tool to compare and select a relevant KT TMF. This distinction has been added in the discussion section on page 25, lines 519 to 524.

Line 484: It is more important to be able to decide how to select between them.

We agree it is important to be able to select between them. This paper is meant to be a resource of a candidate list of KT TMFs to select from. This distinction has been added in the discussion section on page 25, lines 519 to 524.