Reviewer’s report

Title: Criteria for selecting implementation science theories and frameworks: Results from an international survey

Version: 0 Date: 30 Jul 2017

Reviewer: Wendy Gifford

Reviewer's report:

This paper starts with a strong background on how theories are underused, superficially used, or misused in implementation science research. The need to understand what theories are being used and the criteria for theory selection is strong.

The authors purposely combine the terms theories and frameworks and use one term to represent them both throughout the paper. In light of substantive differences between the two (including the differences between conceptual and theoretical frameworks), I believe the paper needs justification for combining these terms and further explanation of what kinds of frameworks are being referred to.

Methodology: Did the authors follow any particular methodology to create the survey instrument that was used? It would be helpful to see more background on the approach used for the methods, including what criteria was used to determine the seminal text and conference presentation that were chosen to establish the baseline of theories used. It seems that the items on the survey could have been different depending on the epistemological stance that underpinned the different "seminal texts" that were used to develop it. Although one would anticipate that the open-ended questions in the survey would have prompted descriptions of different theories used, the items in the instrument could influence the type of responses provided - therefore it would be helpful to understand the "theoretical" underpinnings that informed the survey instrument developed in addition to a methodology to develop it.

Results: With 73% of the sample being based at an academic institutions and the professional characteristics of respondents asked as part of the survey - I was surprised that the professional discipline that respondents were from was not provided. As a discretionary revision, I think this would provide more insights into the particular theories used.

Discussion: I feel that findings from this study warrant a deeper discussion than provided in the manuscript - there are only two paragraphs prior to the study limitations, the first of which is a summary of the findings. A more fulsome discussion of what these finding mean in relation to the current literature and state of the science is needed to justify the conclusion that implementation scientists would benefit from guidance on theory selection. For example, why does it matter that selecting implementation theories are driven by prior experience or
convenience - or that different criteria are used in different research to select a theory - if the researchers have a good rationale for why they selected a particular theory? Further discussion is needed to understand and justify the conclusions in the paper and I would suggest that this should include some critical discussion (i.e. pros and cons) of how guidance on theory selection and reporting criteria for theory justification would inform and advance (or not) the science.

Reference 26: check authors spelling - I believe you mean Yukl, and not Yuki

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

'I declare that I have no competing interests'

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors'
responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal