Reviewer’s report

Title: Defining and Conceptualizing Outcomes for De-Implementation: Key Distinctions from Implementation Outcomes

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Reviewer: Shellie Ellis

Reviewer's report:

The authors bring forward important conceptualization of how standard implementation outcomes should and could be applied to de-implementation. The question of whether implementation is truly different from de-implementation is a good one and is important for the field. The article is generally well-written and clear, although overall it seems that the article is arguing for uniqueness of de-implementation that doesn't seem to be supported by the examples. Reframing the objective or softening some of the language may be sufficient to address the mismatch of findings and conclusions. The manuscript is proposed as a methodology piece. The methods consist of providing examples, including some literature review, of how each implementation outcome is important to de-implementation and assert rationale for why it may be more important. At the minimum some set of criteria by which to judge the examples might better qualify the work as methods development. Nonetheless, overall, the work brings forth points not well articulated in the field, but may not fit well with the format and may overstate some of the assertions made:

1. Although the points articulated are important, the article seems to be more commentary than method development. Had they tested these constructs in implementation and de-implementation settings, it could potentially be more informative (for example, the paragraph on altruism provides evidence that these constructs might operate differently in the two different contexts). Thus, the piece might potentially be more convincing framed as a debate, and given the readers' tendency to bring up counter examples, might be well suited to this format.

2. In places, it seems that the authors are arguing that some outcomes are more important in de-implementation than in implementation, but for each example, I am not convinced that the outcome is more important for de-implementation than for implementation, but perhaps rather that these outcomes are equally important and might need to be conceptualized differently. It seems that many points they bring up could easily be argued for implementation as well as de-implementation. For example, the key issue of distinguishing between the practice and the process transcends the direction of the behavior (whether it be starting, increasing, stopping or decreasing). It seems one of the biggest practical challenges of implementation research is to identify and distinguish the multiple layers of behavior and decide what is the "thing" and what is the "change strategy." After reading the manuscript I am more convinced that distinct specification of the intervention and implementation strategy are more important than defining implementation and de-implementation outcomes preferentially.
3. It may be worth pointing out that the same measures for various constructs can be used for both implementation and de-implementation (e.g., acceptability, appropriateness) and that, logically (although not demonstrated empirically yet) the opposite valence of the construct and measure would be important for moving behavior in the other direction. The point you seem to be making is about what is specified and how it is positioned (important, but not unique to de-implementation). What might be more informative is thinking about how the measures used to operationalize the construct might perform differently at the ceiling or floor and whether they are robust enough to predict both adoption and de-adoption, for example, and what research might be needed to develop a threshold or cut point for each.

4. You do not specify this, but another point your thoughtful consideration of outcomes brings out is that there is always a comparison between the status quo and the desired change and both must be considered to assess how likely the change will occur. From the examples presented, I am not necessarily convinced this is more acute for implementation or de-implementation.

5. Your consideration of stakeholders in the context of de-implementation is important, but I do not see how it follows from the "results" as "discussion." The argument that it is differentially important rather than equally important in both contexts, is unconvincing.

6. Your section on altruism is interesting. First it provides comparative data to suggest that it works differently in the two contexts. While altruism is not one of the implementation outcomes suggested by Proctor, it is a component of motivation. [And, tangentially, the example also aptly points out that the determinants of behavior in a clinical or client setting may be different between the implementer and those the practice is implemented on, which is often not well articulated in implementation models.] Would this example be more suited to the rationale for the study?

7. I think the conclusions overstate the findings of the article. It seems you have done a great job conceptualizing how these outcomes could work equally well and deserve equal consideration in the de-implementation setting, but have not necessarily "operationalized" these outcomes (doesn't seem you are describing specific measures, but rather constructs). It also doesn't seem like you are recommending "units of measurement," but rather recommending that intervention and strategy be specified distinctly.

Minor point: the sentence line 306-310 is unclear and might benefit from use of italics or restructuring.

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