

Reviewer's report

Title: Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science

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Reviewer: Peter Mendel

Reviewer's report:

This paper is greatly improved. The motivation of the paper is much more clear and compelling, and the reorganization of paper better showcases the synthesis and distinctive contribution of the paper. Figure 1 is also much improved in graphically depicting the main dimensions of the framework (although I still wish it would do more), and, with a few exceptions, the examples from the MOVE! study that were used throughout the article work well. The expanded discussion of implementation process and particular concepts, such as design quality and packaging, are highly useful additions (and glad to see these insights pulled from the old monstrous appendix into the body of the paper).

I have no remaining major compulsory revisions.

But I did notice a number of discretionary revisions that I recommend the authors address before submitting a final draft:

1. (pp.7-8 & Fig 1) in terms of the the core/periphery discussion, I'd drop the "hard" and "soft" modifiers, since it seems to add more room for confusion than clarification (are core components of interventions 'harder' in a tangible sense, or more difficult to change--could be they are just as easy to change as peripheral components, although one might not one to do that). I'd also focus more closely on Fixsen's definition based on info economics of core components as the 'most essential and indispensable' elements (as opposed to 'irreducible').

Fyi, for complex interventions, I'm also intrigued with the idea of focusing on replicating functions versus forms (see Hawe et al, BMJ 2004), not that I'm suggesting you incorporate this latter notion.

2. (p.8, 2nd par) not sure how you're using the term 'institution' (as a synonym for organization, per the vernacular use of the term in health care, or in a more sociological sense of wider cultural or governance systems).

3. (p.8, bottom) you might want to highlight less the 'unpredictable' role of individuals, but more their capacity for 'agency' (remember, the collective interaction of elements of systems can introduce as much or more unpredictability as an individual does). Again from a sociological perspective, I'd also suggest this would be a good place to highlight the importance of individuals for what they bring to the equation in terms of their 'carriers' of cultural, professional, and institutional mindsets, norms, interests, and affiliations (not just

their idiosyncratic personalities).

4. (p.9, top) explaining 31% of variance actually seems pretty respectable for social science research--don't have to term this as 'low' to make your point in that sentence.

5. (p.11, top) 'avoid being bogged down'--slightly awkward phrase; I think I get the gist, but could you be a little more specific with the rationale for selecting a limited number of constructs a priori?

6. (p.12) besides differentiating the intervention source between internally-vs-externally developed, I'd also suggest this is a good place to also note that certain specific sources will have more or less legitimacy for different stakeholders in various contexts (Mendel et al make a similar point with respect to change agents).

7. (p.14, end 1st par) this and other examples also illustrate that assessing attributes of interventions are almost also dependent and in relation to attributes of the context.

8. (p.14, beginning of 2nd par) 'Excellence in' seems awkward phrasing. "Perceived excellence..", or better something like 'the degree to which the bundling and presentation of the intervention is framed in ways that resonate with the values and perspectives of adopting stakeholders' (reference to 'framing' from social movement lit would be helpful if you go this route).

9. (p.15, 2nd par, first sentence) change 'integral' to 'prioritized by'?

10. (p.18, middle of page) delete 'dispersion of' from the definition of Centralization?

11. (p.18, bottom) 'invisible' just seems like an awkward descriptor to use for connections.

12. (p.19, 2nd par) 'deprivatization and review' is cryptic, not sure what this means here.

13. (p.19, 3rd par) first sentence might be a little bit of an overstatement--we have lots of measurement of networks and communication patterns, although your more general point holds that it's much less clear which measures most significantly affect intervention dynamics and success. I think you might also want to expand a little before the last half of the paragraph to say that although we don't know the exact structural characteristics of communication or exchange networks that matter, we do know that the quality and sense of 'community' or 'teamness' among individuals or organizations involved in implementation can have a strong effect on the ability to implement an intervention. (references to the 'community of practice' or similar literatures could be used here).

14. (p.22, end 3rd par) this example from the MOVE! project actually seems somewhat weak as an illustration of organizational learning climate.

15. (p.24, bottom par) I would include prioritization about an intervention, along with knowledge and beliefs about the intervention, in this paragraph/heading. The theory of planned change and similar motivation expectancy theories often include the perceived importance of a goal, belief in that an action will result in achieving a goal, and self-efficacy in being able to implement an action as all contributing to motivation to engage in the action (e.g., an intervention). Right now, this paragraph includes all these components, except the prioritization/importance placed on the goal of the intervention.

16. (p.25, top par) 'requires' seems a bit strong; perhaps change to 'is aided by'

17. (p.25, 2nd par) I think it's important to note here that self-efficacy is situated and often compartmentalized--e.g., it may be high for a particular professional within their traditional scope of work or training, but less so for unfamiliar tasks (such as in an intervention that trains substance abuse workers to provide depression counseling). You wouldn't also want to give the impression that a general measure of person's self-efficacy would necessarily be the same for their efficacy to implement a particular intervention, nor that the self-efficacy to implement an intervention is the same as belief in whether the intervention itself (if implemented) would be efficacious.

18. (p.26, bottom) this example from MOVE! appears more related to implementation climate or organizational culture than personal identification with the organization.

19. (p.29, bottom) although you distinguish analytically between an opinion leader and champion, you might want to note that in practice an individual can serve both roles.

20. (p.30, bottom) "Time should be taken.." seems too normative a statement for this section.

21. (pp.15-31) you note throughout this section the various elements of the CFIR framework that the MOVE! study did not evaluate. It would be helpful in the Discussion section to comment a bit more on the reasons of why some elements were evaluated and others not--both as conscious study design decisions/tradeoffs and reflections on the limitations and contingencies of doing evaluation research--as well as the consequences of these reasons, and implications for how one chooses which constructs to focus on.

22. (Appendix 2) I'd suggest "checking" the following additional constructs for the Mendel et al framework (just because I'm so familiar with it--note all page numbers below refer to the Mendel et al paper):

Relative advantage - term specifically mentioned on p.29

Complexity - several references to complexity of interventions (eg, pp. 2, 23, 28)

Cost - costs/benefits included in discussion of incentives on p.26

Outer setting - see pp.23-24 & Fig 1, discussion of macro-system environments

Peer pressure - see p.27 reference to effects of homophily

Structural characteristics - see p.26 section on Org'l structure & process

Implementation climate - see pp.25-26 on org'l and implementation climate

Relative priority - see p.25 discussion of priorities, also implied p.29 wrt to needs assessment

Self-efficacy - specifically mentioned on p.25

Individual stage of change - see p.28 discussion of Rogers stages of adoption

Planning - see esp p.29 (which you even cite in your paper)

Opinion leaders - specifically mentioned on p.27

Executing - mentioned p.28 as 'implementation of an innovation in practice', and included as one of the stages of diffusion in the model (Figure 2)

Reference:

Hawe P, Shiell A, Riley T. 2004. Complex interventions: how 'out of control' can a randomised control trial be? *BMJ*, 328: 1561-3.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.