Reviewer's report

Title: From intervention to interventional system: Towards greater theorization in population health intervention research

Version: 0 Date: 15 Aug 2018

Reviewer: Stephen Schensul

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The abstract needs significant revision from both a grammatical and conceptual perspective. For example, "This article puts forward to study…" is not correct English and the rest of this sentence needs greater clarity.

This paper focuses on "interventions" and "context," the failure to understand their interrelationships and the need to see their interaction as an "intervention system." The concern about the transfer of "effective behavioral interventions (EBI)" developed under ideal conditions and its transferability to other contexts and real-world settings was raised first by the US Centers for Disease Control and then further developed by the US National Institutes of Health (see R.G. Glasgow et al. (2012). National Institutes of Health Approaches to Dissemination and Implementation Science: Current and Future Directions, American Journal of Public Health). Implementation science is now the focus of NIH grants, books and an extensive bibliography, none of which is cited by these authors.

The paper begins with two definitions of health interventions but there is no clear definition of what is meant by context. The Medical Research Council (MRC) process evaluation guidelines are cited but do not advance the argument. The paper then addresses "causal chains" and "mechanisms" but no clear point is made. A third definition (p6) of an interventional system adds little to this reader's understanding of the point to be made.

The authors make a good point that the emphasis on the gold standard of experimental design ignores context and that there is a need to explore contextual factors both in the initial intervention design and its transferability and scaling up. However they fail to tell us how that could be done. The authors make the point that well-developed theory can contribute to understanding the intervention system but again do not describe how that can be accomplished. The Newton and climate change examples are unhelpful.

The argument for interdisciplinary collaboration ("hybridization of knowledge") is now well accepted in public health. The authors focus on the way collaboration will bring together practitioner and user knowledge but leave unclear how this will address context.

The paper is highly abstract, does not lay out a clear argument and fails to provide case examples that could illustrate points and provide methodological guidelines. There are many instances of poor writing, e.g. "this" without a clear referent, the use of "so-called," italics where there is no quote and the lack of a logical flow.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
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Are the conclusions drawn adequately supported by the data shown?
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No

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Not suitable for publication unless extensively edited

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