Author’s response to reviews

Title: Changing Behaviour 'more or less' - Do theories of behaviour inform strategies for implementation and de-implementation? A Critical Interpretive Synthesis

Authors:
Andrea Patey (apatey@ohri.ca)
Catherine Hurt (catherine.hurt.1@city.ac.uk)
Jeremy Grimshaw (jgrimshaw@ohri.ca)
Jill Francis (jill.francis.1@city.ac.uk)

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* We have moved the Figure Title and Legend section after the reference list.

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Andrea M Patey, Ph.D.; Catherine S Hurt, Ph.D.; Jeremy M Grimshaw, MBCHB, Ph.D.; Jill J Francis, Ph.D.

Dear Dr. Wilson,

Thank you for your most recent comments regarding our response to editors. We too, recognise that de-implementation is an emerging area of focus and appreciate that others may have differing views. It was very helpful to us to articulate our rationale for our behaviour perspective and appreciate the opportunity to convey our point of view.

In light of your recent request to strengthen the conceptual clarification in the manuscript, we have incorporated into the manuscript more of the stance we took in the previous cover letter, adding sections to both the Background and the Discussion.
In the Background, on Page 3, Lines 82-85 we have added the following text:

Behavioural theories can aid in developing a better understanding of the main effects, mediators (mechanisms), and moderators (effect modifiers) between behavioural influences and interventions in the environments (policy, system, organization, team) (18) in which healthcare professionals work.

and lines 87-93 we have added the following text:

There have been major methodological and theoretical developments in field of health psychology in designing and evaluating multi-level interventions. Advances in intervention mapping using behavioural theories have improved design and implementation of health promotion interventions (community-level) and school based programmes (system-level) (19, 20). In addition, the Behaviour Change Wheel (BCW), a guide for designing interventions with its foundation in the behavioural sciences, illustrates that interventions can be delivered at any level by including policy-, system-, and individual-level components (21).

In the Discussion, on page 17, Lines 438-454, we have revised our original response in the Strengths and Limitations section in the manuscript to include the following:

Unless an implementation intervention that is delivered at system-level or organisational-level actually changes the care that a patient receives from healthcare teams and individual healthcare professionals, it fails to enhance care quality and therefore fails to improve health outcomes. A strength of the review is the focus on behaviours of healthcare professionals and teams, no matter where in a healthcare system an intervention is delivered. Wang et al. proposed four different types of de-implementation related to organizational effort (partial reversal, complete reversal, related replacement, unrelated replacement) (103). Behaviour theories may help inform any of these four types, since the underlying foundation of all four is removing ineffective practice and performing the associated behaviour less often. The first two types focus on reducing the frequency of behaviour from either i) often to not at all for a sub group of patients (partial reversal – removing ineffective practice); or ii) often to not at all for the whole patient population (complete reversal - removing ineffective practice). The latter two types (related replacement, and unrelated replacement) propose a potential strategy (behaviour substitution) for de-implementation. As we have highlighted in the current review, behaviour substitution is a behaviour change technique (22) that has been used to decrease an undesired behaviour (56, 67, 70, 73, 77-81). However, methods for identifying and targeting a substitute behaviour are currently under-developed and require further investigation. Behavioural theories can be applied to enhance the uptake of the selected substitute behaviour.
We hope that this revision will address the concerns around conceptual clarification and look forward to hearing from you regarding these changes.

Best regards,

Dr. Andrea Patey