Reviewer's report

Title: Old habits die hard: accounting for the role of habits in implementation research on clinical behaviour change

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Reviewer: Falko F Sniehotta

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The role of habit in behaviour change is a timely and important issue for behavioural research in implementation science and beyond. I fully agree with the main message of this manuscript, incorporating the concept of habits in theory based behaviour change research is likely to provide a better understanding of why health care professionals do not act in accordance with current guidelines and recommendations and thereby allow for the development of potentially more effective interventions to facilitate desirable changes.

My only slight disappointment about this manuscript is the descriptive nature and the lack of any new insight. The authors conclude that ‘there seems to be an emerging recognition that habits might be a critical factor in explaining the difficulties of modifying clinical behaviour.’ Unfortunately, the present paper does not deliver much more in its present form but a summary of relevant approaches underlining this recognition. I would encourage the authors to be a little more ambitious and outline in some more detail an agenda for implementation science delivering on their concluding statement: ‘There is a need to explore intervention strategies that account for the habitual nature of clinical practice by exploring various means of situational or contextual disturbances to break existing habits.’

Minor Essential Revisions

1. The Behaviourist conceptualisation of habit would deserve a more comprehensive, complete and accurate review supported by appropriate references. At the moment, the shallow summary of this approach does not help appreciating what is already known about habits.

2. I feel that some statements such as ‘The development of habits in working life can also be understood in terms of the novice–expert theory of Dreyfus and Dreyfus.’ or ‘The process of forming habits when carrying out a work task can be explained further with reference to cognitive action theory.’ may benefit from clarification. Surely, the authors intend to point out that other theoretical approaches used to describe/account for professional behaviours refer to processes which show similarities with the construct of habit. I do not think that it would be desirable to suggest that any of these approaches would provide an explanation for how habits are formed.

3. The authors argue that ‘Inherent in many social cognitive theories is the
assumption that intention and hence behaviour can be influenced by the provision of appropriate information concerning a behaviour.’ It does not seem to be the main take home message of 35 years of research on these theories that provision of information would be the main intervention strategy. This might be one of the examples where the authors could go beyond description and provide a somewhat more elaborated analyses what indeed the main social cognitive approaches to behaviour change are and how they would differ from a habit theory perspective. For example, Lally, P., Chipperfield, A., & Wardle, J. (2008). Healthy habits: Efficacy of simple advice on weight control based on a habit-formation model. International Journal of Obesity, 32, 700–707 suggests strategies to support habit formation in interventions. This level of elaboration would be helpful to stimulate empirical research on habits, not just debate.

4. Finally, the authors make a compelling point about the potential importance of habits in behaviour implementation science. However, there are a range of issues limiting empirical research. One is the lack of certainty how to break/develop habits in interventions (see point 3), the other is the difficulty of measuring habits. Much of the research referred to in this paper use Verplancken’s Self-reported habit index. This measures has its merits and has stimulated scientific activity in this field, but is has although considerable conceptual shortcomings which were recently discussed elsewhere (Sniehotta, F.F. & Presseau, J. (2012). The habitual use of the Self-report Habit Index. Annals of Behavioral Medicine, 43, 139-140.).

**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