Reviewer’s report

Title: Measuring determinants of implementation behavior: psychometric properties of a questionnaire based on the Theoretical Domains Framework

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Reviewer: Lou Atkins

Reviewer’s report:

This paper reports the validity and reliability testing of a TDF based questionnaire to measure determinants of implementation behaviours.

The paper adds value to the area by unpicking the broad domain of environmental context and resources and dividing it into five new domains.

Whilst the validation and reliability checks are appropriate, my main reservation is about how feasible it will be for health care professionals to complete the resultant 93-item measure. The authors report a 55% response rate. Whilst the authors have developed a psychometrically robust measure; the next iteration of the paper would benefit from the inclusion of evidence that it is also an acceptable length to those who will be completing it.

I have other minor comments on the manuscript:

Could the authors comments further on basing the questionnaire on the first rather than current version of the TDF (validation of which has rendered the domain ‘nature of the behaviour’ redundant as well as other changes to the domain structures).

Introduction, paragraph 2: Can the authors provide some examples of ‘characteristics of innovation’ and ‘innovation strategies’

Introduction, paragraph 3: The first sentence “In the past decade…” appears weak and doesn’t add much value.

Introduction, paragraph 4: The line “Indeed, qualitative studies concluded that the TDF was useful for the comprehensive exploration of possible explanations for suboptimal implementation behaviour [29, 30]” appears to understate (and under-reference) previous applications of the TDF give that the original paper has been cited over 200 time and has been used largely to understand implementation problems.

Methods, paragraph 1: The last sentence is hard to follow could the authors rephrase “In order to investigate the questionnaire in a HCP sample, items were related to HCPs’ implementation of PA interventions following the guidelines as the target behavior.”

The Results would benefit from a summary description of the measure somewhere near the beginning that includes how many domains and items
overall in the measure, brief definitions of new domains and number of items attached to each domain.

Discussion, paragraph 1: Minor point on language – ‘challenges’ are generally ‘addressed’ rather than ‘solved’. “As a consequence, the DIBQ can solve measurement challenges of theory-based factors underlying HCP behavior [12, 24–26], which can contribute to the development of effective implementation strategies and subsequently the impact of evidence-based interventions.” Could this sentence be shortened or restructured as two sentences?

Discussion, paragraph 1: Could the authors provide some justification for the point they make about the questionnaire being the first “that can easily be adapted to other contexts in which implementation research takes place” i.e. why do they consider previously developed and validated TDF-based questionnaires measuring implementation behaviours could not be adapted in the same way?

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

No competing interests.