Author's response to reviews

Title: Development of a behaviour change intervention: a case study on the practical application of theory

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Dear Professor Michie

Re: Development of a behaviour change intervention: a case study on the practical application of theory

I am submitting a revised manuscript and below is a point-by-point description of the changes made. In addition to the description of the changes below – in bold - I have highlighted the changes in the revised manuscripts and have indicated below the para and page of the changes in the revised manuscript.

REVIEWER: JANET CURRAN

Reviewer's report:

Thank you for the opportunity to review this case illustration of developing an implementation strategy to change GP’s OA consultation practice.

Minor Essential Revisions

1. Abstract: Background. Should be consistent with description of the intervention....is it "patient focused” or “professionally focused”??

We agreed this is confusing as there are two interventions: i) the patient focused trial intervention which the GPs and practice nurses delivered during the trial to the patients who consulted for OA, and ii) the professionally focused behaviour change intervention, whose development is the subject of this case study and was designed to “train” the GPs to deliver the trial intervention. We have now referred to the former simply as the “trial intervention”, the latter as the “behaviour change intervention” and rephrased the background section of the abstract to read (highlighted page 2, 1st para):

“Use of theory in implementation of complex interventions is widely recommended. A complex trial intervention, to enhance self-management support for people with osteoarthritis (OA) in primary care, needed to be implemented in the Managing Osteoarthritis in Consultations (MOSAICS) trial. One component of the trial intervention was delivery by general practitioners (GPs) of an enhanced consultation for patients with OA. The aim of our case study is to describe the systematic selection and use of theory to develop a behaviour change intervention to implement GP delivery of the enhanced consultation.”
We have altered the rest of the text of the paper so that the two interventions are consistently referred to as the “trial intervention” and the “behaviour change intervention”.

2. Need to review manuscript for grammar, tense and spelling errors throughout eg. Abstract: Methods; line 4...selection of behavior techniques to “address”

We have thoroughly reviewed the manuscript for appropriate grammar, tense and spelling and sincerely hope we have made all the necessary changes.

3. Pg 4. Para 2. Given the case study presented in this manuscript is centred on one of the components of the MOSAICS intervention. Can you provide some additional background regarding how/why the 3 components of the MOSAICS study were chosen/identified?

The trial intervention was developed using the Whole Systems Informing Self-Management Engagement (WISE) approach* which proposes that three aspects of care need to be addressed to better support self-management: information for patients, professionals responsive to the needs of patients and services which provide good access. The OA guidebook, enhanced OA consultations and the nurse-led OA clinic were developed to respectively address these three issues.

* Kennedy,A.; Rogers,A.; Bower,P. Support for self-care for patients with chronic disease. BMJ 2007;335(7627):968-970

We have revised the background to read (highlighted page 4, 2nd para):

“The main aim of the MOSAICS study was to test a complex patient-focused intervention (the ‘trial intervention’), developed using the Whole Systems Informing Self-Management Engagement (WISE) model [11] and incorporating the three elements of that model: information for patients, professional responsiveness to patients’ needs and access to care. The three elements in the trial intervention were: i) an OA Guidebook developed with user involvement to provide patient-centred and evidence-based information [12], ii) an enhanced OA consultation by GPs and practice nurses, and iii) access to a practice based nurse-led OA clinic (providing an initial 30 minute appointment and up to three further 20 minute appointments to provide support for self-management).”

4. Pg 5. Para 1. Can you be more specific regarding the targeted behavior? What aspect of the consultation are you hoping to change?

We have expanded the relevant sentence to read (highlighted page 5, 1st para):

“One component of implementing the MOSAICS trial intervention was to enhance the consultation behaviour of the GPs delivering the trial intervention. This behaviour concerned diagnosis and initial management in line with the NICE OA Guideline when patients aged 45 years and over present with peripheral joint pain. This GP behaviour was the focus of the case study described here.”

5. Pg 10. Para 2. Line 1. It is not clear what you mean by “delivering the behavior”?

This is a typographical error and should have read “delivering the behaviour change intervention workshops” and we have revised it to read “delivering the workshops” for brevity (highlighted page 12, 2nd para).
6. Pg 12, Para 3, line 3. You identify involving the GP advisory group in development of the change proposal as a strength which might enhance uptake of the intervention but they were not the same GPs that participated in the study??

We agree and have commented on this in the discussion in the original manuscript:

“The GPs who attended advisory group meetings were not the same GPs who received the behaviour change intervention in the MOSAICS trial, and their views and attitudes may not have been the same as these GPs. Analysis of the actual target group for the behaviour change intervention – the GPs in the four MOSAICS intervention practices – may have identified different determinants to be addressed but the timescale for developing the behaviour change intervention in the MOSAICS study did not allow for this. However, as the mode of delivery included interactive sessions, and the sessions encouraged reflection on current practice and on the video-recorded consultations, there was ample opportunity for issues specific to the study GPs to be addressed.”

We could not involve the GPs who participated in the study since, at the time when we were developing the behaviour change intervention, the study GPs had not been randomised to intervention or control arm and we did not want to involve GPs who would potentially be randomised to the control arm. We were referring to this in stating “but the logistics of delivering the behaviour change intervention in the MOSAICS study did not allow for this” in the paragraph quoted above and have revised this to read “but the timescale for developing the behaviour change intervention in the MOSAICS study did not allow for this

7. Pg 12, Para 1, Line 1. Can you clarify strategy for determining mode of delivery?? This line would suggest pragmatic approach with some additional guidance from an EPOC review, whereas the description on Pg 9 would suggest a more deliberate, systematic approach??

Thank you for identifying this discrepancy. You are right, we have not correctly reflected on the approach we took in deciding style of delivery (or using the terminology from the study by French et al “mode of delivery”). We wanted to make the point that the final consideration in both studies was what was practical and do-able locally. In our study it did not change the style of delivery suggested from adult learning theory and the empirical evidence− in that we did: deliver the intervention in workshops with a mix of didactic and interactive sessions, use opinion leaders, adopt a learner centre approach, use context-bound communication skills training – but it did result in our holding the workshops at the practices, keeping them to no more than two hours in length and running over about two months. We have revised the discussion to read (highlighted page 14, final para):

“The research team in the low back pain study, having determined the behaviour change techniques to include in the intervention, and the mode of delivery, took a pragmatic approach to their final selection: what was locally feasible and acceptable. We also took a pragmatic approach on deciding the final format but this did not result in any changes to our intended delivery other than that the workshops were run at the practices, lasted no more than two hours each and were about two to three weeks apart.”.

Discretionary Revisions

1. Pg 6. Para 1. Can you be more specific with describing the coverage of the TDF....“all determinants addressed in psychological models??” would suggest a much broader range of theories were considered.

We have revised the sentence to read (highlighted page 6, final para):
“Michie et al addressed this problem by undertaking a consensus exercise to develop a model which encompassed 128 theoretical constructs (or determinants) included in 33 psychological theories - the Theoretical Domains Framework (TDF) [17]”.

2. Pg 6. While you mention the Cane study in the discussion section, you should also make reference to the existence of the validation study in this section.

We have added the following sentences to this section (highlighted page 7, 1st para):

“The TDF has been recently validated and refined: experts were asked to re-sort the constructs included in the TDF and to re-develop the domains, with and without reference to the original domains [23]. The refined framework consists of 14 domains, eight unchanged from the original, six derived from a more specific grouping of the constructs underpinning three of the domains (beliefs about capabilities, beliefs about consequences, and motivation and goals), with one of the original domains omitted (nature of the behaviour).”

REVIEWER: LOU ATKINS

Reviewer's report:

The paper describes the development of the theory-based intervention to change GP behaviour to deliver an enhanced-support intervention (MOSAICS) for self-management for people with osteoarthritis (OA). I suggest the following minor essential revisions:

Abstract

The sentence “Evaluation of the behaviour change intervention included…” give the impression the paper will report substantive findings of the evaluation. If the finding is the identified evaluation measures can the authors make this clearer?

We agree this is not clear and have revised the sentence to read (highlighted page 3, 1st para);

“Methods and measures selected to evaluate the behaviour change intervention included: appraisal of satisfaction with workshops, GP report of intention to practise and an assessment of video-recorded consultations of GPs with patients with OA.”

In the abstract results I would suggest summarising TDF domains identified as relevant and BCTs delivered as part of the intervention.

We have revised the abstract results but have been limited by the word count as to the detail we can include (highlighted page 2 last para):

“The behaviour change intervention presented the GPs with a well-defined proposal for change; addressed seven of the TDF domains (e.g. knowledge, skills, motivation and goals); incorporated ten behaviour change techniques (e.g. information provision, skills rehearsal, persuasive communication); and was delivered in workshops which valued the expertise and professional values of the GPs.”

Methods

Applying the models: Can the authors provide more information on the data collection process I step 1 and 2, for example how many GPs whose responses were coded using the TDF were interviewed? Where they considered to be a representative sample of GPs who will deliver the
MOSAICS intervention? Can the authors append the interview schedule or topic guide that was used to collect the data described in Step 2?

Please see the response to comment 6 from reviewer 1 above. Many of the GPs were working in local research network practices, which were the practices approached to participate in the MOSAICS study, and in this way were representative of the GPs who would deliver the MOSAICS intervention. 15 GPs attended the advisory group meetings and it is the responses from these GPs, and the other healthcare staff who attended the meetings, which were analysed using the TDF. The interview guide and schedule for the GP advisory groups has been uploaded with the revised manuscript.

Results

Step 3 – Can this sentence reference the 2008 paper "The starting point was the list of techniques which Michie et al had judged appropriate to effect change in the domains identified in step 2."

We have inserted this reference (highlighted page 11 final para).

Boxes

In Box 2 can the authors provide definitions along with the theory domain names?

Referring to the 2005 TDF paper, specific definitions are not given for each domain, other than the constructs which the domain covers and examples of how the domain could be assessed in an interview. We have added an example of an interview question for each domain in Box 2 (page 26). We hope this better defines, in a practical way, the domains for the reader.

Tables

In the interest of concise reporting could tables 2 and 3 be merged (I would suggest omitting the timing column from table 3)

We understand the point the referee is making but we would be concerned that combining as one table for more concision would have the negative effect of making the single table more complex for the reader, even if timing was deleted. Furthermore the explicit link between domain and technique which is highlighted by the current lay-out, and is a crucial illustration of how we used the Michie mapping model, would be lost. We would therefore prefer to retain the current lay-out if space permits. And if not that table 3 is published as an appendix.

Yours sincerely

Dr Mark Porcheret
Senior Lecturer in General Practice