Author’s response to reviews

Title: Physician-reported barriers to using evidence-based recommendations for low back pain in clinical practice: a systematic review and synthesis of qualitative studies using the Theoretical Domains Framework

Authors:

Amanda Hall (amanda.hall@med.mun.ca)
Samantha Scurrey (srs000@mun.ca)
Andrea Pike (andrea.pike@med.mun.ca)
Charlotte Albury (charlotte.albury@spc.ox.ac.uk)
Helen Richmond (helen.richmond85@gmail.com)
James Matthews (james.matthews@ucd.ie)
Elaine Toomey (elaine.toomey@nuigalway.ie)
Jill Hayden (JHayden@Dal.Ca)
Holly Etchegary (holly.etchegary@med.mun.ca)

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Author’s response to reviews:

Reviewer #1:

Abstract Comments:

1. In the background section please "this" rather than "our" as we know who the authors are. The same goes for the last sentence of the background.

This has been revised on page 3, lines 4 and 8.

2. In the methods section you need to describe the total time period you searched.

This has been revised on page 3, line 11.
3. In the background you talk about facilitators but don't report on them in the results. The title suggests you are just focusing on barriers but in other places facilitators are briefly discussed. You need to be consistent throughout. The field would benefit from the broader report of both barriers and facilitators but your report seems to focus on barriers with a sprinkling of content related to facilitators. Please be consistent. Addressing this issue is why I concluded it needs major, not minor, revisions.

Thank you, we have removed reference to facilitators because the primary focus of our study was on barriers. We removed reference to facilitators in the background section on page 3, lines 5 and 7.

BACKGROUND Comments: Well written and frames things up nicely.

METHODS Comments: This section is clear so the reader understands how this review was conducted. You provide sufficient detail.

RESULTS Comments:

4. Page 14, line 6-8, you state "We are not highly confident.........". This statement as written seems to belong in the discussion. If you keep it here, it needs to be stated differently. How about "the level of confidence was determined to be....."

Thank you, this has been changed on page 14, lines 6-7 and 17-18.

5. Also, please provide more detailed explanation of the results presented in Table 2 and the CERQual approach. The reader wants to understand what is presented in the tables but as written you make the reader work harder than they should. You need to help the reader who is not familiar with the CERQual approach. This comment applies to all 5 behaviors and the related tables.

Thank you for this comment. We have added more information to the tables to clarify the meaning of the CERQual judgements by (i) adding an additional column entitled “explanation” for the CERQual judgement and (ii) including additional detail to the legend with an appropriate link to Appendix B which contains the detailed criteria assessment.

Example of the revised legend:

“CERQual Assessment: Confidence was downgraded 1 level for each of the four CERQual domains that had moderate or serious concerns defined as: 1 Methodological limitation (the majority of the supporting data comes from studies with low methodological rigour threatening the validity or reliability of the theme), 2Coherence (the supporting data for the theme is drawn from
studies that provided ambiguous or incomplete data that threatened the coherence of this theme),
3Adequacy (the majority of the supporting data for the theme is drawn from few and/or small
studies and the quality is superficial lacking sufficient richness to fully explore the theme),
4Relevance (the majority of the supporting data is of indirect, partial or unclear relevance to the
theme. 5When the data come from a single study with few participants and of moderate rigour
we downgraded to very low confidence. Please see Appendix B for a full description of the
criteria used for assessing confidence in the evidence supporting the review findings using the
CERQual approach.”

DISCUSSION Comments:

6. Page 17, line 12, you state that interventions often target a single domain. If you can't support
that statement with references, you need to reword it. Another option is to speak about the
limitations of only addressing one domain and not focus on this weakness in prior studies.

Thank you, we have added in the references to studies that address a single domain.

7. Page 17, section entitled Theoretically-informed solutions, could benefit from a discussion
about other frameworks since several exist. When you go down the path of discussing the
strengths of TDF, you better justify your rationale. You start to address my comment in the
section entitled: Previous Implementation Approaches. One suggestion from a flow perspective
would be to move this section so it follows the section entitled Previous Implementation
Approaches.

Thank you we have moved the paragraphs as suggested. We have also added in additional detail
on other frameworks for behaviour change. The change is on page 18, line 25-26 and page 19,
line 1-5.

8. Page 19, line 22 appears to have a word missing.

Thank you we have revised to read as follows:

“We analysed the data separately for the five behaviours outlined in practice guidelines relevant
to physicians…” page 20, line 3.

9. Page 19, line 24: Is it a diagnosis or rather an assessment? When you talk about provider
behavior, use consistent terminology.

Thank you for this comment. To clarify, we are not using the terms assessment and diagnosis
interchangeably in this sentence nor are we talking about the assessment and diagnosis of the
provider. Rather, we are talking about our method of assessment of the physician-reported
barriers in order to make a diagnosis about the determinants of behaviour. Therefore, we have not made changes to this sentence.

10. Page 21, line 5, the word "enabler". You use the word "facilitators" in the abstract, etc. I suggest using it here to be consistent.

Thank you we have replaced enablers with facilitators on page 21, lines 1, 2 and 23.

11. Page 21, line 12, you talk about international campaigns. These campaigns need references.

These have been added on Page 22, Line 5.

12. Figure 2, assessment of methodological rigour. The bottom line on Figure 2 needs additional clarification as to the overall score. Each study is assessed with a check or a X or a !. The table would benefit by a brief definition of each as well as the explanation of the good, moderate and low overall score.

Thank you we have added additional detail to Figure 2 as suggested. The legend now reads as follows:

symbol = component was used, symbol = component was not used, symbol = unclear from reporting if component was used.

Scoring: each study was scored on the use of the components within the 4 domains. The 4 domains were scored separately out of 30 points. A total score out of 120 was provided and categorised as follows:

Low Rigor: a score of 1-40/120; the study is considered to have adhered to none or few of the recommended criteria for ensuring good methodological rigour pertaining to recruitment, data collection, the researcher-participant relationship and analysis methods. Thus, a threat to the validity of the results is plausible

Moderate (Mod) Rigor: a score of 41-80/120; the study is considered to have adhered to some or many of the recommended criteria for ensuring good methodological rigour pertaining to recruitment, data collection, the researcher-participant relationship and analysis methods. Thus, a threat to the validity of the results is possible.

Good Rigor: a score of 81-120/120; the study is considered to have adhered to most or all of the recommended criteria for ensuring good methodological rigour pertaining to recruitment, data collection, the researcher relationship and analysis methods. Thus, a threat to the validity of the results is unlikely.
Reviewer #2:

1. Abstract: I think in abstract (and probably title) you need to make clear that this is a review of qualitative studies only (as can be read as covering all studies at the moment).

We have made this revision to the title and abstract, page 3, line 11.

2. I also be tempted to add 'guidelines' to your key words.

Thank you, we have added ‘guidelines’, page

3. Background: There are couple of moments when you need to make clear your evidence, by references, for your statements. So, Line 12-13 on not routinely used and Line 16-17 that this results in 'poor health outcomes for patients'.

We have added in the references on page 4, line 13 and 17.

4. Also, I think that here, you could focus on something you (begin to) raise in the discussion - that, given this emerges in discussions with patients, you need to outline (the paucity of) effective interventions targeted directly at for patients.

Thank you for pointing this out. We have incorporated information on patient interventions with our response to comment 9 below regarding future research.

5. Methods: Note, it should say, for point 2 of inclusion, 'contained qualitative method (e.g. focus group, interview)' - as, if you use this format of words, a focus group or interview is an example of 'method', not methodology.

Thank you we have revised the sentence on page 8, line 5.

6. Discussion: I think what is key here, as you focus on, that what you observed is about how different 'domains' are involved in specific activities, and when you break down the activity, you see even more factors involved. And this is a real strength of your discussion, moving things forward in this area. I'm interested in how this finding - which appears coherent - relates to other TDF synthesis, not in LPB, but more widely. The potential focus on single target domains is clearly problematic and something that you need to flag is not only tied to LPB, but a broader question for the community.

Thank for raising this point. We have added in information regarding this to the discussion on Page 17, lines 4-8.
7. However, I'm not sure that your examples in Box 2, then do justice to your argument, as they can be read as we can return to a more single domain, single, targeted, intervention focus (without reminding the reader that you need to focus on them all at same time, to potentially support effective change). This is as much about presentation as anything.

We have changed the title of Box 2 to remind the reader that the BCTs proposed in this Box should be combined together as components in a multi-faceted intervention to target all implicated domains.

8. I'm interested in the single study [50] that did show an effect - which domains did it focus on, what is specific about that one? If it is not too much work is would be lovely to see a table of the domain/specific barrier/behaviour for these intervention studies, as this could really help other to see the variety of focus and specificity.

Thank you very much, we have just completed a full systematic review that focuses on this very issue. It fully describes the BCTs used in interventions to reduce imaging for LBP (PROSPERO CRD42017072518). We are submitting this to Implementation Science within a few weeks.

9. Finally, you note, the assumptions in and around 'patient demand', and offer an example (desire for image, specialist referral etc) and then note 'This perception assumes something about the patient and further research' is needed. There is a vast (and ever growing) range of qualitative work on patients and LBP, from their perspective (and on a range of issue, information needs, experiences of consultations, referrals etc, etc … see for example Snelgrove 2013 review, of even Slade's 2014 review on a specific aspect, but other work is embedded in medically-unexplained/physically-persistent symptoms literature). So, I'm really, really, surprised about this comment.

Thank you for raising this point. We did not mean to not say there was no research in this area, but rather that future work could investigate the perception “patient demand” in more detail to design better patient-targeted interventions. Therefore, to clarify, we have followed your suggestion to reference previous work on patient expectations and experiences of treatment as well as interventions targeted at patients (form comment 4 above) on page 21, line 9-21.