

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Evaluation of the fidelity of an interactive face-to-face educational intervention to improve general practitioner management of back pain
AUTHORS	French, Simon; Green, Sally; Francis, Jill; Buchbinder, Rachelle; O'Connor, Denise; Grimshaw, Jeremy; Michie, Susan

VERSION 1 - REVIEW

REVIEWER	Allan Riis Aalborg University, Department of Clinical Medicine, Research Unit for General Practice. Denmark
REVIEW RETURNED	18-May-2015

GENERAL COMMENTS	<p>In this manuscript, the fidelity of delivery of an face to face intervention is evaluated. Using the IMPLEMENT study as an example, the aim of this study is three-fold:</p> <p>"1) observed facilitator adherence to planned behaviour change techniques (BCTs); 2) comparison of observed and self-reported adherence to planned BCTs; 3) variation across different facilitators and different BCTs "</p> <p>The topic of the manuscript is of great importance and relevant for researchers performing face to face interventions. This kind of manuscript can be difficult to fit into a traditional paper structure. Hence, the reader can be confused as to whether this is primary an evaluation of the delivery of fidelity in the IMPLEMENT study, or it is a paper concerned with the delivery of fidelity of a face to face intervention. Therefore, I have two suggestions for minor revisions:</p> <p>Minor revision 1: The abstracts' conclusion section should only refer to the 3 above mentioned aims. No reference to the IMPLEMENT study should be included in the conclusion (in the abstract).</p> <p>Minor revision 2: The title could more clearly refer to "face to face interventions"</p>
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REVIEWER	Chris Maher The George Institute for Global Health, Australia I have published with two of the authors (SF & RB)
REVIEW RETURNED	22-May-2015

<p>GENERAL COMMENTS</p>	<p>I found this a very interesting manuscript. I have not seen this approach applied previously in the musculoskeletal field; so it seems quite novel. I also think this approach of assessing intervention fidelity could greatly assist our understanding of trials evaluating complex interventions. It might help you understand both +ve and -ve trials.</p> <p>I have a few suggestions for improvement.</p> <p>Firstly I would have preferred to have read more about the results of the parent (IMPLEMENT) trial. We really only got one sentence in the introduction and it could easily have 3-4 sentences to describe clearly the results which then sets the stage for this current study. I think this change would be fairly easy to make.</p> <p>My second suggestion is to clarify the results in Table 3. With the results it seems that you have two options: 'applied' vs 'not applied' but when I think about giving a presentation on back pain you could provide the correct information, provide incorrect information or fail to provide any information on a topic. For example with I-7 Red flag screening demonstration you could forget to cover this, you could cover this correctly or you could give incorrect information about red flags. Could the authors please clarify and justify the dichotomous coding option they elected to use.</p> <p>My third suggestion relates to the result that fidelity was higher for the 1st compared to 2nd session. Does this difference in fidelity explain any of the IMPLEMENT trial results? You say in the discussion that session I covered stopping the ordering of x-rays whereas session II covered advice. Did you see different results across outcomes in IMPLEMENT that might be explained by differences in fidelity in the training workshops?</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer 1: Allan Riis, Aalborg University

Reviewer 1 comment #1

In this manuscript, the fidelity of delivery of an face to face intervention is evaluated. Using the IMPLEMENT study as an example, the aim of this study is three-fold: "1) observed facilitator adherence to planned behaviour change techniques (BCTs); 2) comparison of observed and self-reported adherence to planned BCTs; 3) variation across different facilitators and different BCTs "

The topic of the manuscript is of great importance and relevant for researchers performing face to face interventions. This kind of manuscript can be difficult to fit into a traditional paper structure. Hence, the reader can be confused as to whether this is primary an evaluation of the delivery of fidelity in the IMPLEMENT study, or it is a paper concerned with the delivery of fidelity of a face to face intervention. Therefore, I have two suggestions for minor revisions:

Minor revision 1: The abstracts´ conclusion section should only refer to the 3 above mentioned aims. No reference to the IMPLEMENT study should be included in the conclusion (in the abstract).

Author response:

The aims are addressed directly in the results section of the abstract. In response to the reviewer's comment we have modified the Abstract conclusion to the following:

“The findings suggest that the IMPLEMENT intervention was delivered with high levels of adherence to the planned intervention protocol.”

Reviewer 1 comment #2

Minor revision 2: The title could more clearly refer to "face to face interventions"

Author response:

We have modified the title to (added text in bold): "Evaluation of the fidelity of an interactive face-to-face educational intervention to improve general practitioner management of back pain"

Reviewer 2: Chris Maher, The George Institute for Global Health

Reviewer 2 comment #1

I found this a very interesting manuscript. I have not seen this approach applied previously in the musculoskeletal field; so it seems quite novel. I also think this approach of assessing intervention fidelity could greatly assist our understanding of trials evaluating complex interventions. It might help you understand both +ve and -ve trials.

I have a few suggestions for improvement.

Firstly I would have preferred to have read more about the results of the parent (IMPLEMENT) trial. We really only got one sentence in the introduction and it could easily have 3-4 sentences to describe clearly the results which then sets the stage for this current study. I think this change would be fairly easy to make.

Author response:

We have added the following text to the background to further explain the main results of the IMPLEMENT trial:

"In the IMPLEMENT trial, 47 practices (53 GPs) were randomised to the control and 45 practices (59 GPs) to the intervention. For one of the main trial outcomes, simulation of clinical behaviour of x-ray referral, the IMPLEMENT intervention group GPs were more likely to adhere to guideline recommendations about x-ray (OR 1.76, 95%CI 1.01, 3.05) and were more likely to give advice to stay active (OR 4.49, 95%CI 1.90 to 10.60). However, actual imaging referral was not statistically significantly different between groups, with rate ratio 0.87 (95%CI 0.68, 1.10) for x-ray or CT-scan."

Reviewer 2 comment #2

My second suggestion is to clarify the results in Table 3. With the results it seems that you have two options: 'applied' vs 'not applied' but when I think about giving a presentation on back pain you could provide the correct information, provide incorrect information or fail to provide any information on a topic. For example with I-7 Red flag screening demonstration you could forget to cover this, you could cover this correctly or you could give incorrect information about red flags. Could the authors please clarify and justify the dichotomous coding option they elected to use.

Author response:

Inherent in the coding of whether a behavioural technique was delivered or not was that it was delivered correctly according to intervention protocol. However, we agree with the reviewer that this aspect of the methods of the study could have been improved and coding should have indicated "not applied or incorrectly applied".

We have added comment about this in the Discussion in recommendation for future studies:

"Our scoring criteria for evaluating the delivery of individual BCTs of 'applied' and 'not applied' did not necessarily detect instances where facilitators potentially delivered a BCT, but did not provide correct information according to the guideline recommendations. For example, for the red flag screening demonstration (Table 1) the planned BCT was model/demonstrate the behaviour. Facilitators could have delivered this BCT correctly, could have delivered the BCT but given incorrect information about red flags, or may not have delivered this at all. Our coding system was based on the assumption that, if the BCTs were delivered, facilitators provided correct information. However, future fidelity studies should consider using a more sophisticated coding scheme to ensure that correct information is accurately coded. For instance, the coding instructions could be 'applied' and 'not applied or incorrectly applied'."

Reviewer 2 comment #3

My third suggestion relates to the result that fidelity was higher for the 1st compared to 2nd session. Does this difference in fidelity explain any of the IMPLEMENT trial results? You say in the discussion that session I covered stopping the ordering of x-rays whereas session II covered advice. Did you see different results across outcomes in IMPLEMENT that might be explained by differences in fidelity in

the training workshops?

Author response:

The IMPLEMENT intervention demonstrated some effectiveness for both of the two targeted behaviours, now explained in the Background section of our paper in response to Reviewer 2 comment #1 above. Therefore, we do not think that this difference in fidelity explains any of the IMPLEMENT trial results and other factors may be involved. We recommend that future fidelity studies explicitly investigate the link between fidelity and effectiveness and have added a comment in the Discussion about this as follows:

“The IMPLEMENT trial results demonstrated improvement in outcomes for both targeted behaviours (x-ray referral and giving advice to stay active). This was despite there being lower fidelity of the delivery of the intervention for one of the target behaviours, with the workshop on advice to stay active having fidelity of delivery of BCTs of 70%, whereas the x-ray workshop session had fidelity of delivery of BCTs of 93%. Considering we did not detect an association between fidelity of delivery and intervention effectiveness, we recommend that future fidelity studies explicitly investigate the link between fidelity and effectiveness to further examine the causal model of change.”

VERSION 2 – REVIEW

REVIEWER	Allan Riis Aalborg University, Denmark
REVIEW RETURNED	06-Jun-2015

GENERAL COMMENTS	This is an interesting paper on the evaluation of Fidelity of a face-to-face intervention, aimed at healthcare professionals. This paper also offers an interesting discussion, with consideration in relation to the distribution of resources to study the Fidelity of interventions. I recommend this paper and I have no additional suggestions for revision.
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REVIEWER	Prof Chris Maher The George Institute for Global Health, Australia I have published with two of the authors
REVIEW RETURNED	06-Jun-2015

GENERAL COMMENTS	Thank you for the care you have taken in responding to the reviewers comments. I believe that you have satisfactorily addressed both reviewers comments and the manuscript should be accepted for publication.
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