

## **Author's response to reviews**

**Title:** A new conceptual framework for implementation fidelity

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**Author's response to reviews:** see over

To the editor,

For our responses to the comments listed in the email, please see below.

Comment: “The overall structure of the paper could be represented as a piece of empirical work (Introduction, methods, Results, Discussion) and I would like you to do this. It is important that you are much clearer about what you have done (your methods) - this will allow you to clarify the search methods that you have used (as requested by reviewer 1).”

Response: We attempted to fit the paper into the structure of an empirical piece of research, but we felt that this piece did not really work with that structure. However, a brief Method section has been added explaining what we did (see also response to Referee 1).

Comment: “I need you to be clearer about what you are saying that is novel. Much of your introduction refers to reference 1 and I am left unclear how much of what you present has been previously represented by that paper or others. You need to be very clear about what is new and how it is new to allow a reader to judge what is being added to the literature.”

Response: We felt that the novelty of the proposed framework had been stressed (pp.4, 8 and 21), but further additions have been made to the full paragraph on p.8 to highlight the novelty of this work, such as stressing how it differs from previous work, especially in terms of explaining and describing the relationships between the many elements in the framework.

Comment: “The reviewers have identified that you are inconsistent in your use of terminology and you should check this throughout the manuscript. They encourage you to use a more generic term (intervention) when you refer to 'programme'. You should be careful to clarify this.”

Response: Thank you - this has been corrected; “intervention” has replaced “programme”, except where a case study specifically uses the term programme.

Comment: “You say nothing of the implications of what you describe in terms of the realities of measurement. You may, however, wish to avoid this.”

Response: Case study examples are now given to describe the realities of measurement, eg. self-report surveys for “participant responsiveness”, observation of those delivering an intervention to evaluate quality of delivery.

## Referee 1

Please thank the referee for her comments – we found them extremely useful. Hopefully our responses to them are satisfactory – we feel the requested revisions have brought much greater clarity to the piece.

1. The Method section as been added to satisfy this point. (p.4-5), especially the search terms used and the databases interrogated, the limits of date that were applied, as well as other means used for identifying the literature.

2. This was a very interesting point. However, we are not clear what the distinction is that is being made between “implementation fidelity” and “intervention fidelity” – is there a clear distinction in the literature between the two? We have been through the literature and the “intervention fidelity” concept appears to be another term for what is called “implementation fidelity” elsewhere, in the same way that “treatment fidelity” or integrity are also used to describe essentially the same concept. Our search for fidelity within 5 words of “implement\$” captured most relevant studies, and certainly sufficient for the purposes of this paper – we found plenty of case studies to support the framework – had we been conducting a systematic review, all such other synonyms would have been used also.

Is the referee’s distinction, made later in the comments, between intervention fidelity as “content” fidelity, and implementation fidelity as “process” or delivery fidelity? In our opinion, both the intervention and delivery is covered by the proposed “implementation fidelity” model – it is inclusive rather than exclusive. Fidelity means adherence to the content of the intervention, but the degree of fidelity achieved is potentially dependent on both “attributes” of the intervention (complexity etc) and the delivery (quality of delivery) as well as other factors (participant responsiveness etc.). The ‘active ingredient’ of the intervention is covered by adherence to the ‘content’ of the intervention. The proposed framework seeks to capture the entire process, rather than simply one element or process.

With the need for clarification of this, a fuller description of what “content” means is given on pp.10-11, and the inclusive, multifaceted nature of the framework (encompassing both the content of the intervention and its delivery) is described in the conclusion (p.21)

3. We felt that “implementation” was applicable as a term for both the application of an intervention from published research into practice, and for the administration of an intervention by researchers testing the intervention, as in principle they describe the same thing, i.e. implementing an intervention, either your own or one developed and published by someone else. However, the focus of the article is more about implementing interventions, rather than research into practice, so we have retained the term and stressed the “primary research” focus of the article (p.4).

4. “Model programme” has now been removed as a term. Only the term “intervention” is used.

Case studies are now provided (p.10-11) to describe how adherence (i.e. implementation fidelity) has been evaluated in the research, using specifically developed fidelity tools.

5. We appreciate that this term may be confusing – it has now been removed.

6. The “Discussion” now has two headings. A conceptual framework: Background and Rationale; and A conceptual framework: elements and relationships. The sub-headings of the second now correspond to the headings in the Box on p.9 and the elements on Figure 1.

7. The problem exists with the critiqued definition of programme differentiation and this has confused our argument here. The critique has now been removed, and the discussion of programme differentiation limited to its ability to identify the ‘essential’ elements of an intervention.

Minor

8. This has been changed

9. Explanation of Figure 1 and reference added (pp.9-10)

10. Reference details corrected

11. This point was made partially in the introduction (p.3), but a further comment has been added, as suggested, to draw attention again to the issue of replication.

12. The terms are now repeated in the introduction (p.3) and conclusion (p.21).

13. A reference to Rogers’ diffusion of innovations theory, which, as suggested, is relevant to participant responsiveness, has been added (p.17).

14. Thank you for this reference, it was most interesting, and particularly relevant to programme complexity. A reference from this study has been added here (p.13 – Grol et al 1998).

## Referee 2

Please thank the referee for her comments – they were extremely helpful and, we think, have added to the value of the piece.

1. Rationale for additional elements has been added at the beginning of the relevant sections on pp.13 and 14; no others suggested themselves from the broader literature on this topic.
2. Dose is no longer included in Figure 1 and the component analysis mentioned in Figure 1 is now explained – a full Explanation of Figure 1 has now been added (pp.9-10).
3. Thank you for this very interesting reference – there are certainly some elements of process evaluation and implementation fidelity that correspond. It has now been mentioned in the discussion (p.6). However, this reference is not a piece of research identifying the ‘essential components’ of an intervention, so no further revision has been made.
4. Case study examples have now been provided from the implementation fidelity literature of how each of the elements described in this framework have been measured.

## Minor

5. Reference to Figure 1 added.