Reviewer’s report

Title: Understanding Implementation Fidelity in a Pragmatic Randomized Clinical Trial in the Nursing Home Setting A Mixed-Methods Examination

Version: 0 Date: 26 Jun 2019

Reviewer: Eilidh Duncan

Reviewer's report:

The study looks to examine the factors associated with fidelity within pragmatic RCTs through an exemplar trial of the implementation of an advance care planning video education programme in nursing homes. The strengths of the manuscript include addressing an understudied area (factors affecting fidelity within pragmatic RCTs), the intention to use a mixed methods approach, and the use of an existing framework (the Conceptual Framework of Implementation Fidelity) as the basis for the investigation. I believe this is a well presented article of a well designed study and that the findings would be of interest to readers of Trials. I have included some suggestions below which are requests for further details or greater clarity.

The background section could benefit from some further details of the trial setting and purpose - e.g. an explanation of what 'advance care planning' means, why is this a problem, why is a video providing education needed and what is it designed to change/do.

It is not currently clear how the results relate to the '3 key lessons' in the discussion. While it seems very sensible to suggest that a 'flexible fidelity' approach is important for pragmatic RCTs (i.e. where core elements of an intervention are delivered alongside the purposeful adaptation of non-essential intervention features), it is not clear to me how this relates to the findings reported in the results. Which aspects of the video education programme were considered core and which could be adapted?
It is stated on p8 that "for the purposes of this report, adherence was measured using the cumulative VSR completion rates for long-stay patents only" whilst the trial was designed to target both long-stay and newly admitted patients. Was there low adherence across both types of patients within the sites designated as 'low adherence facilities', and similarly for 'high adherence facilities' was adherence high across both types of patients? Were there differences in the qualitative data for how champions considered the implementation of the video programme for these 2 different types of patients? It would be useful to be able to read a brief rationale for why implementation for long-stay patients was the focus here.

Details on the rationale behind exclusion of facilities with a zero adherence rate would be helpful.

Perhaps better to use numbers rather than percentages for description of interviewees. Also it is stated that 89% were social workers - what were the professions of the other participants?

The manuscript uses rather a lot of abbreviations which reduce its readability. It would be beneficial to readers if these could be reduced where possible.

**Level of interest**
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Quality of figures**
All images and figures within the manuscript should be genuine i.e. without evidence of manipulation. No specific feature within an image may be enhanced, obscured, moved, removed, or introduced. If you have concerns about the veracity of the figures you should choose the first option below.

**Statistical review**
Is it essential that this manuscript is seen by an expert statistician? If so, please give your reasons in your report.
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal

Were you mentored through this peer review?

No