Reviewer’s report

Title: Implementation fidelity in a complex intervention promoting psychosocial well-being following stroke: An explanatory sequential mixed methods study

Version: 0 Date: 16 Nov 2018

Reviewer: Joanne Pascale

Reviewer’s report:

General comments:

The paper takes up an important topic - the rigor with which protocols are administered in order to measure outcomes in randomized control treatments. However it is not always clear exactly what the goal is - whether to simply measure the extent to which this particular intervention was administered according to protocol, or to advance the science and practice of measuring interventions. Much of the text is devoted to the former; in fact there is a fair bit of repetition regarding the ~ 80% adherence rate. With regard to the latter, there is some talk about going beyond quantitative measures in order to examine the "moderating factors" using qualitative data. This is where the flow of the paper seems to get a little confusing. For example, starting on page 7 the authors describe moderating factors such as participant responsiveness, comprehensiveness, strategies, recruitment and contextual factors. Then, starting on page 17 in the results section, there is discussion of some of these moderating factors (comprehensiveness and recruitment) and introduction of a new one (quality of delivery). Perhaps these are different words describing the same things but I got confused along the way. Can the authors take a more systematic approach to the factors they aim to study - those that go beyond the typical quantitative measures? Perhaps a table displaying all the moderating factors and how those factors were assessed (e.g., for the "comprehensiveness” moderating factor, focus groups with IPs were conducted).

It is my sense in general that the authors are seeking to go beyond typical quantitative measures of implementation fidelity in order to discover and expose nuances that could have an impact on the outcome of an RCT. To that end, it would be useful to be more clear up-front about the distinction between typical measures and the novel measures used here, and then highlight the unique contributions of these novel measures. For example, the findings at the top of page 22 seem important and unique:

It appeared to be especially important for the participants to be able to tell their stories to an attentive listener and to take part in a dialogue where they could voice their concerns and receive validation - this was the most useful element referred to by the participants.

This kind of finding seems to get a bit lost in the shuffle of results, and might be more useful if put into the context of the type of moderating factor targeted, and the methods used to explore that moderating factor. In sum, if the emphasis could be shifted somewhat away from the typical
measures and toward what is unique about this approach, and the value of those results put into context with the more conventional measures, the paper would make a stronger contribution.

Specific comments:

Page 9 (second half): the intervention itself is nicely described and illustrated in Fig. 3. Can the authors offer any background research and/or citations about the development of this intervention and/or the evidence of its effectiveness?

Page 11: How were these 39 participants selected out of the 166 in the treatment group - was it random? Any thoughts on why only about half consented and/or whether that opt-in could introduce bias to the fidelity metrics?

The fact that the IPs were self-recruited and "in line" with the protocol is curious. If the intervention is to be implemented on a large scale, presumably the treatment will be assigned to IPs, regardless of their interest in or enthusiasm for the program. Thus whatever underlying characteristics of the IPs who opted in to this study could be integral and in fact essential to its success, and when the protocol is assigned to IPs who lack those underlying characteristics the program's success could be affected. All of this may be tangential to the study at hand, which is to evaluate the fidelity of the protocols. However, interest in/enthusiasm for the study could also affect IPs' adherence to the protocols and, in a similar way, threaten the conclusions.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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

Acceptable

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