Reviewer’s report

Title: Pragmatic Trials and Implementation Science: Grounds for Divorce?

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Reviewer: Richard Byng

Reviewer’s report:

It was a pleasure to read this paper regarding Implementation Science and Pragmatic Trials. Generally, the Paper was well-written, thoughtful, thought-provoking and helpful for those concerned with both Pragmatic Trials and Implementation Science. There are a number of suggested changes the author might like to consider in order to improve the Paper. In the Abstract, I would suggest moving the first sentences of the Conclusion starting Part 2 to the Results section.

On Page 2, line 56-57, I think it would be helpful to clarify that it is talking about causal efficacy, and that efficacy RCTs are designed to deduce whether the addition of an intervention makes a difference to outcome. This is compatible with context having an impact both on whether the outcome is successful (through eg changing proportion of those in need) and through contextual resources or constraints interacting with the intervention itself.

I agree that Pragmatic Trials take a step to understanding whether things work in the real world and that it is only one step, and that the heterogeneity of context is a major consideration and requires us to think of Pragmatic Trials as Case Studies. However, it can still helpful to know results: if the results are positive it shows a certain interventions or programme theories can work in particular context or, if the results are negative, that it is difficult to put interventions into practice or that they are more likely to be ineffective. An understanding of Bayesian logic and context dependence is needed for this.

It is well known that research is little read by practitioners and, also, policy makers, making this particular section feels like a 'straw man' and irrelevant to the whole argument. We know that few people read individual papers but what matters is how the research evidence is put together in a readable, useable form so this section could be omitted.

Overall, the Paper could do with further clarity about the aim. On page 6, line 41/42, it first dawned on me that the paper is mainly about the use of Pragmatic Trials within the range of methods for Implementation Science whereas, up until then, I had thought the paper was comparing and contrasting Implementation Science methods with Pragmatic Trial methods as a means of ensuring evidence can be put into practice. I actually think the paper does address both points, although it later focuses on the issue of the use of Pragmatic Trials in Implementation Science. So, this could be made clearer, perhaps with a more general aim of providing a commentary on the problems of Pragmatic Trials, particularly the argument that they are, in themselves, case studies, whether or not they are related to Implementation Science or a new intervention.
Box 1 is very helpful and I agree generally, but it could be argued that, for each case, we should be much clearer in our conclusions, both reporting on interpretation regarding the specific case and locality and context and, also, providing tentative conclusions about generalizable application particularly to Programme Theories as well as components.

On Page 11, line 26, I would add the word 'also', i.e., 'we also perceive it because in this way we can see the case as both something helpful locally as well as well as providing generalizable evidence.

Finally, in the Conclusion, I would suggest that it is helpful to point to the role of Pragmatic Trials within the armoury of Implementation Science. My understanding of what has been written is that the author would suggest that there is a limited but potential role in suggesting that Pragmatic Trials can show that components or theories are potentially helpful in creating outcomes, but that this should be as a part of a wider array of tools, and depends on key conditions being met. And, lastly, further clarity that these arguments apply to Pragmatic Trials generally as well as within Implementation Science.

**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?**
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Yes

**Are the conclusions drawn adequately supported by the data shown?**
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Yes

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

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