Reviewer’s report

Title: A physician-scientist preceptorship in clinical and translational research enhances training and mentorship

Version: 0 Date: 01 Feb 2019

Reviewer: Sandy Cook

Reviewer’s report:

The purpose of this paper is to evaluate a formal program designed to mentor md/phd students in clinical/transnational research. The gap in this area is identified due to the disjointed structure of the md/phd program. The value of good mentorship is implied - but it is not clear if it is lack of mentoring or if the real problem is a structural problem of the residencies that limit the ability to concomitantly pursue scientific activities. That link is not clear as to how mentorship will mitigate the structural difficulties once in residency. Further, the introduction can be enhanced if there is some mention why mentorship can be valuable from a theoretical or conceptual framework. What is it about mentorship that will beneficial. Further, there is no discussion as to why you chose to develop the program in the way you did - why a preceptorship, why a longitudinal, why the content you chose - what evidence is those objectives are the ones needed to help students achieve?

What is your hypothesis - what did you expect this program to achieve? (that would guide your assessment).

Methods - beyond setting - what are the actual numbers of students total and by academic year who took the program and actual number of preceptors total and by year. You suggest that no all MD/PhD students took this program - so How did those who did differ from those who did not?

Measures - what did the surveys look like - how many questions, how were they developed and by whom? why chose those items in that way? More details on who it was set to - you said 38 who completed survey - but how many were existing students, how many alumni and from which year? Same with the 51 students who have not completed preceptorship. (How can those who have not completed preceptorship talk about the program?)

Data Analysis - was mann-whitney the only analysis done?

Program itself - How did you come up with these topics- did you, for example interview those who were successful in and found that having a mentor who addressed these issues helped? Did you interview those who struggled to progress with their research to identify what they wished they knew or the barriers they encountered (i.e., lack of mentor)?

Selection of mentors and projects proposals - here you talk about creating a project that helps align students career interest and goals. This seems like creating an individualized learning plan - it would be good to talk in the introduction about the value of those (if there is literature about
it) as it seems less to be about a mentoring relationship as much as a program/process to help students create this learning plan and experience the types of activities they might while in residency to try to balance.

Results - of those who responded (29 out of 38) - are they representative of whole group? Any differences? - Here you say 39 out of 61 students completed; but on pg 9 you say it was 51 who had not yet completed? Which is it?

pg 9 line 226 - you state "across all MD/PhD program students surveyed, 87% of respondents..." I think you mean Across all MD/PhD program students who responded, 87% reported....Is that similar to the entire population? (I'm asking these questions to get at an assessment of how generalizable your results would be to your population of MD/PhD students - are they similar/different?

Pg10 line 240 - you imply that the preceptorship "significantly increased competency" - you can't say that as you didn't measure competency. You can say that the students self-reported they felt their competency increased.

Because the program was run over several years - did you make any changes from year to year, thus limiting the ability to combine results - maybe the results should be done by cohort - especially if you made changes over time. Maybe time makes a difference in their perspectives as well to be discussed in your sub-group analysis. (I didn't see supplemental figure 4 in the material I had).

Student productivity - is there any evidence that this additional productivity (which MD/PhD students should have ample from their PhD) helped in their career plans. You also mentioned "some" had already published - how many? Isn't that an expectation of a PhD - shouldn't they all have had at least one publication to get their PhD?

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

No

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

No

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

No

**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

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