Reviewer's report

Title: Self-perceived competence correlates poorly with objectively measured competence in Evidence Based Medicine among medical students

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Reviewer: Christopher Roberts

Reviewer's report:

This is an important topic area, but there is little published work within the literature of competence in EBM in the medical education literature. The authors have interesting data, and some interesting conclusions. The article is generally well written and relatively straightforward to follow.

However, there are a number of revisions I would recommend to enhance the manuscript.

1. Major revisions

   a) There was no list of clear crisp research questions. The article hinted the main issue was the correlation between self-perceived competence and performance at EBM. However, there was also information about questionnaire development and validating of the self-perception scale. The results and discussion will more coherently flow from well-stated research questions.

   b) The Dunning Kruger effect. I believe it is well known that there is no real correlation between competence and performance and those who are unskilled tend to overestimate their skills. Accordingly, the authors' hypothesis might be a little naive. I believe the authors should be upfront about this. Several of the relevant studies on the literature are introduced only in the discussion; they would be better placed in the introduction.

   c) Learning outcomes of the EBM Course. These are not stated. The Fresno test focuses very much on epidemiology and biostatistics. If the course focused only on e.g., searching, forming questions and appraising, then students will get low Fresno scores.

Minor Essential Revisions

1) Table 2 and 3 should be simplified. The authors mainly combine categories for their results.

2) I didn't really understand the selection of domains in question 4, as it doesn't really illustrate, for example, the students' scores across all the domains of the Fresno test. Similarly with the choice of correlations focusing on searching and appraising evidence.

Discretionary
The authors could re-consider the low correlation in the context of teaching epi and bio in EBM courses. Perhaps the FRESNO does not have content validity for the level of EBM expected of students in an era of pre-appraised evidence. Teaching in bio and epi is therefore unnecessary or rather a postgraduate skill. Of course the opposite argument will be held by many. What do the authors think?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.