Reviewer's report

Title: Objective structured assessment of technical competence in transthoracic echocardiography: a feasibility study

Version: 1 Date: 17 October 2012

Reviewer: Alan Merry

Reviewer's report:

This study addresses an important question: how to assess competence in transthoracic echocardiography (TTE). The introduction provides a good justification for the study. The title makes explicit that this study is a feasibility study, but it isn’t written as a feasibility study, it is written as a definitive study. The introduction should end with a clear statement of the objectives of the study. I would suggest that the objectives were to demonstrate how the validity of your tool could be assessed. Given the very small number of participants, I would be sceptical about any stronger conclusion in relation to the instrument itself, and would be more convinced by a conclusion explaining how this study has informed the protocol of a larger study to establish the validity of your tool.

You explain that informed consent was obtained from participants, but you do not explain how the patients were recruited, what consent they gave, and whether or not they were paid. I assume that this study was not done as normal part of clinical care.

You talk about correlations between the level of expertise and particular results, but at no point do you actually explain how you rated expertise. Was this on a one to three scale? Do you consider it was linear? If so, do you think that that assumption was justified?

I was a little puzzled about your inter-observer reliability data. You appear to have had the same observer do the measurements twice, and the second observer repeat their measurements once. This seems to be a very small number of observers to base such an assessment on. This comes back to my point about the purpose of the study being the demonstration of the feasibility of a bigger study.

Tables two and three simply show P values. These are of very little value on their own, and are anyway stated in the text. I suspect that these tables could be omitted or alternatively one table that provided the outcomes as well as the P values might be of some interest.

In your study you have looked at the use of the tool to distinguish between levels of expertise and also to distinguish between easy cases and more difficult cases. This seems reasonable but I don’t think that objective was made clear at the outset at the end of the introduction, and it should be. Furthermore, in the methods an explanation of the cases, their pathology and the reasons why they were considered easy or difficult should be provided. The first mention of mitral
stenosis and aortic stenosis comes rather late in the paper and that is perhaps an oversight.

In the limitations section I think the primary limitation that needs emphasis is your small numbers. I think also the difference between real novices and people with considerable experience are quite substantial. In other words I don’t think you have explored the potential of your tool to show relatively small differences in competency, whereas that may well be what one would be looking for in assessing trainees.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

None