Reviewer's report

Title: Physiology of residents in simulation medicine: the PRISM study

Version: 2 Date: 18 April 2014

Reviewer: Erik Kulstad

Reviewer's report:

All comments are considered Discretionary Revisions.

This is an interesting manuscript that describes an investigation evaluating the association between stress (as measured by heart rate and self-report) and performance (as measured by external observer) in simulation. The authors expand nicely on work done by our group (although I don’t see the work cited: Girzadas DV Jr, Delis S, Bose S, Hall J, Rzechula K, Kulstad EB. Measures of stress and learning seem to be equally affected among all roles in a simulation scenario. Simul Healthc. 2009 Fall;4(3):149-54) that looked at the association between self-reported stress, objectively measured heart rate, and examination performance.

I don’t see an abstract included in my copy of the submission, so cannot comment, but presumably there will be one for the publication.

Background

This is a well-written and insightful background section that brings the reader up to date on the relevant issues underlying the motivation of the study.

Methods

From what you’ve written, it appears as if a forced model was utilized, rather than a step-wise regression model, but this would be worth clarifying.

Results

The results appear to support what earlier study of heart rates and stress in simulation have found, namely that although heart rates increase during the critical intervention (and in our case, self-reported learning values increased with self-reported stress level), no correlation was identified between a participant's role in the scenario and heart rate, test score, stress level, or perceived learning benefit.

The fact that Pre- and post-simulation anxiety scores were equal is interesting and unexpected, perhaps warranting comment.

A plot showing each subject’s score before and after may be enlightening.

It would be worth commenting on the agreement between observers determining the Ottawa GRS of each subject.
Discussion

The mention of “some cases sustained ventricular ectopy” may overstate the case, since it appears it was just one subject with sustained, with the 8 others showing only 1 to 3 premature ventricular contractions.

Limitations

An additional limitation worth mentioning is the fact that in addition to being a relatively small sample, quite a few (6/40, or 15%) were excluded for various reasons.

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

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.