Reviewer’s report

Title: Validation of the Imperial College Surgical Assessment Device for spinal anesthesia.

Version: 0 Date: 25 Apr 2017

Reviewer: Lidia Mora Miquel

Reviewer's report:

Dear editor and authors,

Thank you for the opportunity to read and review your manuscript. It seems a brief communication of an experience about medical education in Anesthesiology training. The novel point would be to integrate the simulation in the learning process of anesthetic abilities, with the intention of discriminating if by using this tool of validation of skills could be detected the sufficient degree of competences acquired so that the residents of anesthesia could carry out some actions without being supervised. I believe that this intention should be clearly stated because it is glimpsed in the text during the discussion. The purpose of the study describes the intention of the discrimination of levels of proficiency between operators in order to validate a tool for the training with simulation techniques. The practical aim could be added in my opinion, since the goal in medical education is to improve the entrustable professional activities (EPA). The authors declare this is the first study using this educational methodology performing a spinal anesthesia, so it strengthens the idea of an advance in medical education.

If I may I could suggest other ideas in order to improve the study:

The abstract is too long. Too many data and of course, not to mention the tables inside the results. It should be abbreviate. Typographic error when writing underestimate.

It should be described whether the distribution of cases among the three groups was randomized or not because it could not lead to a significant selection bias given the difference in experience between participants.

The description of the validated Global Rating Scale and Checklist (Appendix 1 and 2) are missing. Please, provide the documentation or describe them in the text.

The significance of the moderate negative linear correlation result of the Spearman correlation analysis between total path length measured with ICSAD could be explain at the end of the results.
I like the discussion of the utility of checklist and GRS for evaluating motor skills and their suitability to grade operators' performance.

Inside the discussion another explanation of the aim of the study is described, just before the limitations. In my opinion it could be added to the introduction of the manuscript and then discussed again at the end if it considered appropriate.

The main limitation of the study is that it is probably underpowered because of the reduced number of cases. The authors justify that problem referring to previous publications but in order to establish conclusions it should be a larger sample of cases.

The justification of the validation of the ICSAD is well conducted and the reasons to choose a simulation model instead of real patients is correct and well explained.

I think it could be remarked that this is a first experience with the simulation model and ICSAD performing spinal anesthesia and the authors could insist in the importance of the new educational methodology based on simulation training in Anesthesia and other disciplines.

The references in the bibliography could be normalized and standardized following the rules of the journal.

Table 1: add (y) to the age variable

Thank you for your work.

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?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

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

Yes

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 recommend additional statistical review
Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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