



Letter to the Editor

Reply letter to: Letter to the editor on the article “Virtual reality simulator versus box-trainer to teach minimally invasive procedures: A meta-analysis”



Dear Editor,

We are grateful to discuss and clarify the questions regarding our paper entitled “Virtual reality simulator versus box-trainer to teach minimally invasive procedures: A meta-analysis” which was published online in December 2018 [1]. A subsequent letter to the Editor discussed “how surgical education is an important topic and that it is difficult to promote standardized education”.

In fact, references 8 and 16 in our published paper are the same. Reference 16 is a duplicate of reference 8 (Yiasemidou M et al.) [2]. Regardless of this mistake, six articles were correctly excluded from the meta-analysis and the final selection remained correct.

It is important to remember that “minimally invasive surgical procedures” is a MEDLINE MeSH Term since 2005 and the term means: “procedures that avoid using open, invasive surgery in favor of close or local surgery”. These generally involve the use of laparoscopic devices and remote-controlled manipulation of instruments with indirect observation of the surgical field through an endoscope or a similar device”. So, we do not expect any confusion with this consolidated and verified index term. Our scope is specific to general surgery and a large number of orthopedic, endoscopic, and gynecology studies were excluded from this study.

Higgins at Cochrane Handbook [3] affirms that when different measures, scales, or scores exist, but they have the same rationale (for example: a high score for a high performance), we can summarize and analyze them using standard mean difference.

The terms “novices” and “participants with no experience” are synonyms. This categorization refers to previous laparoscopic experience. If a participant has any previous experience with a surgical simulator, they were obviously excluded because of the risk of bias. The sub-group analysis on “novices” and “experts” was to further explore a hard topic such as surgical education.

The Fundamental of Laparoscopic Surgery Programm, FLS, affirms that the basic tasks include: peg transfer, precision cutting, ligating loop, suture with extracorporeal knot, and suture with intracorporeal knot. We considered the advanced tasks as: run the bowel [4], laparoscopic cholecystectomy, splenectomy, hernioplasty and bowel suture. Of these, we had statistical results only for the task run the bowel.

We appreciate our colleagues to discuss our paper, and invite researchers to publish and study more on surgical education, using similar or standardized models. We hope to overcome the barrier using non-uniform studies and varying learning methods, to come up with a uniform and global medical learning method.

Provenance and peer review

Not Commissioned, internally reviewed.

Declarations of interest

None.

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Author contribution

Guedes HG, and Artifon ELA wrote the letter. The final version of the manuscript was approved by all authors.

Conflicts of interest

The authors declare that they have no conflicts of interest or financial support.

Guarantor

Hugo Gonçalo Guedes.

Data Statement

The study database is disponsible at University of São Paulo (Brazil) Library and can be shared by the corresponding author by email.

The research protocols used in this research were approved by the ethics committee of the University of Sao Paulo (Universidade de São Paulo), Sao Paulo; Sao Paulo, SP, Brazil [Protocol #298/15].

CRediT authorship contribution statement

H.G. Guedes: Conceptualization, Supervision, Writing - original draft. **Z.M.C.C. Ferreira:** Investigation. **L.R.S. Leão:** Conceptualization, Investigation, Writing - original draft. **E.F.S. Montero:** Validation, Visualization. **J.P. Otoch:** Validation. **E.L.A. Artifon:** Formal analysis, Visualization, Validation.

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