OPEN PEER REVIEW

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Anesthesiology and Pain Medicine
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Peer Review Report for "Relationship Between “Simulated Patient Scenarios and Role-Playing” Method and OSCE Performance in Senior Anesthesiology Residents: A Correlation Assessment Study"

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Review Timeline:

Submit Date:	23 Jun 2020
Revised Date:	15 Aug 2020
Accepted Date:	18 Aug 2020

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (0) 9 Jul 2020

Dear AE,
I had a hard time understanding this paper because it was apparently written without the assistance of a native English speaker. The manuscript would benefit greatly from editorial help from a native English speaker.
The 6 core competencies of ACGME include patient care; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; professionalism; and systems-based practice. But in the abstract the authors write that "Meanwhile, an ordered pattern of OSCE was prepared to cover four core competencies." It would this be helpful to have the authors explain why two of the competencies were not accessed.
The authors note that "In order to compare the results, both the results of OSCE exam and the scores of "simulated patient scenario and role-playing" checklist were calculated on a basis of "hundred scores". I do not understand what the authors mean here.

SOME SUGGESTED CORRECTIONS
ORIGINAL
- During a two years period
CORRECTION
- During a two year period
ORIGINAL
- During a two years period (2018 and 2019 educational year)
CORRECTION
- During a two year period (2018 and 2019 educational year)
ORIGINAL
- Table 1- Study Questionnaire translated form Persian to English
CORRECTION
- Table 1- Study Questionnaire translated from Persian to English
Thanks

REFEREE: Reviewer | **Revision** (0) 13 Jul 2020

Dear AE,
Thanks for giving me the opportunity to review this paper. In this study, the investigators have reported the correlation between the results of two assessments, one using a simulated patient encounter and an OSCE. The authors should be commended for taking the initiative to embark on the important and sensitive issue of learner assessment.
I believe that the paper, as submitted, is not suitable for publication due to the following concerns:
- My main concern is the rationale for conducting this study. Why should we seek for the existence of a correlation between the results obtained by two assessment tools? What does that show? This needs to be elaborated on in the introduction section.
- My second concern is the way the method has been described. The authors are strongly advised to look at the reporting guidelines for this type of study (this seems to be a correlational study and STROBE guideline will apply). If two methods are to be compared, they first need to be defined in detail. For example, we do not know much about the OSCE. It has been mentioned that the exam consisted of ten stations; but what were those stations? Were they manned stations or not? Did they involve simulated patient encounters or not? How many raters were there in each station? Who were the raters? The authors need to look at the guideline on reporting OSCEs. We do not even know much about the other exam. We know that a scenario was present and some kind of role playing occurred. We also know that a number of faculty members rated the resident using a pre-defined checklist. There is much we need to know about this form of assessment. How did the residents enter the study? How many encounters for each resident was planned? How was the interrater agreement of the raters were ensured? How was the effect of the varying number of raters adjusted? And many other missing details.
- Another important issue is the ethical considerations of this study? Was participation voluntary? Was the protocol approved by the IRB?
- The conclusion drawn from this study (This study demonstrated that "simulated patient scenario and role-playing" in a departmental educational session when done on a regular patter could improve the performance of the anesthesiology residents regarding the ACGME

core competencies) is absolutely unrelated to the findings of the study. If the educational impact of a teaching method is to be assessed, then a different methodology such as a pre- and post- design would be necessary. This study looks at the correlation between the results of two assessments.
- There are many more issues which need to be addresses before the paper can be further evaluated. I strongly suggest that the authors clarify their study question and then re-write the paper based on this question and using the relevant reporting guidelines.
Thanks

Ata Mahmoodpoor: Reviewer | **Revision** (0) 17 Jul 2020

Dear AE,
I rad the interesting manuscript about two methods of education in anesthesiology and followings are my recommendations:
1- Experiential learning using modalities such as simulation is recognized as essential to medical education. The most important aspects of this education include (1) a scheme for identifying clinical performance gaps early in core-resident education, (2) the application of simulation to teach and enhance the performance of psychomotor skills, , (3) exploring anesthesiologist's communication styles during "routine" and "crisis-driven" simulation scenarios, and (4) educating faculty to provide better feedback to resident. Other key educational concepts are addressed in this Issue are(1) the patient safety curriculum and the need to reduce critical incidents, (2) competency-based education (3) cognitive psychology (4) anesthesiology resident evaluation of their teachers. most of the mentioned targets are not considered in this manuscript
2- What are the limitations of this study?
3- Discussion should be improved and edited by study results and similar articles.
Thanks

REFEREE: Associate Editor | **Revision** (0) 18 Jul 2020

Dear EIC,
The manuscript is studied, and there are some comments which should be addressed by the author. According to the comments, the document needs major revision.
Kind regards,

REFEREE: EIC | **Revision** (0) 20 Jul 2020

Dear Author,
The reviewers' comments are mentioned. Please correct the details as mentioned above carefully according to reviewers' request.
Thanks.

OPEN PEER REVIEW

Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Reply to reviewers

Reviewers' Comments	Reply by authors
Reviewer 1	
1-Experiential learning using modalities such as simulation is recognized as essential to medical education. The most important aspects of this education include:……..	Thank you very much! These are very GREAT comments which have been mentioned by the esteemed reviewer. Throughout the text including both introduction and discussion, we have pointed out these aspects for experiential learning and even more, there are some aspects fully discussed; these have been YELLOW highlighted in many parts of the text. Besides, some of these aspects are related to our study and we have focused more on some aspects than others.
What are the limitation of this study?	Added to the final part of the manuscript
Discussion should be improved and edited by study results and similar articles	Thank you very much. We tried to do this as much as possible
Reviewer 2	
I had a hard time understanding this paper because it was apparently written without the assistance of a native English speaker. The manuscript would benefit greatly from editorial help from a native English speaker.	Thank you very much. We have tried to do so. I wish it would be appropriate now
The 6 core competencies of ACGME include ……... But in the abstract the authors write that "……. It would this be helpful to have the authors explain why two of the competencies were not accessed.	Thank you very much. The four competencies that we have mentioned among the 6 competencies are much more relevant to our study. This is why we have chosen these 4 ones. We have addressed this comment in 3 different parts of the manuscript: • Abstract • Last line of Introduction • 2nd paragraph of Discussion
The authors note that "In order to compare the results, both the results of OSCE exam and the scores of "simulated patient scenario and role-playing" checklist were	Thank you very much. Usually the assessment ranks are performed with different scoring sales; however, we aimed to compare the results of two different assessment methods with each other; i.e. OSCE scores and the scores of "simulated patient scenario and role-playing" checklist using different scales; so, using a mathematical calculation, we adjusted the results of the two assessment methods in such a way

calculated on a basis of "hundred scores". I do not understand what the authors mean here.	our comparison could be performed in an easier way. This is added to the text in the last part of “Methods” section
Reviewer 2	
SOME SUGGESTED CORRECTIONS	Thank you very much for these GREAT corrections. All the corrections are made throughout the text and are GREEN highlighted
My main concern is the rationale for conducting this study. Why should we seek for the existence of a correlation between the results obtained by two assessment tools? What does that show? This needs to be elaborated on in the introduction section.	Thank you for this interesting and wise comment. We have added a few sentences to the 2nd paragraph of the Introduction; addressing this important concern.
My second concern is the way the method has been described. The authors are strongly advised to look at the reporting guidelines for this type of study (this seems to be a correlational study and STROBE guideline will apply)…..	Thank you very much for this GREAT comment. So, now the STROBE guideline is followed and its checklist is added as a separate file.
Another important issue is the ethical considerations of this study? Was participation voluntary? Was the protocol approved by the IRB?	Thank you for this important comment. We have added a separate paragraph in the beginning of “methods” section in order to address this issue.
The conclusion drawn from this study (…..) is absolutely unrelated to the findings of the study…..	Thank you for this GREAT comment. We have rewritten the 1st paragraph of the discussion based on this comment; which is now GREEN highlighted. It is fully revised to fulfill the corrections deemed by the Esteemed Reviewer.
Added previous studies and references to discussion:	Thank you for suggesting these studies. The comments from 3 of the four suggested previous studies are added and cited as REFERNCES 28, 29 & 30.

OPEN PEER REVIEW

Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (1) 27 Jul 2020

Dear AE,
I believe that the revisions have been beneficial and that the manuscript is acceptable for publication despite some remaining imperfections with the use of the English language.
Thanks

Ata Mahmoodpoor: Reviewer | **Revision** (1) 27 Jul 2020

Dear AE,
I read the revised version of the manuscript and I think now it is appropriate for publication in Anesthesiology and Pain Medicine.
Thanks

Mohammad Jalili: Reviewer | **Revision** (1) 2 Aug 2020

Dear AE,
Thank you very much for giving me the opportunity to review this revised version of the manuscript. I appreciate the authors' attempt to address the issues raised by the reviewers, but I believe that major concerns regarding the methodology still exists and the paper does not satisfy the quality standards for publication. Educational studies, as in any other type of research in the biomedical field, need well-founded hypothesis and methodological rigorness.
Here are my comments:
1. Simulated patient scenarios and role-playing are techniques which can be used in teaching and learning activities or assessments. They are not stand-alone methods by themselves. For example, you can have two instructors role play the management of a trauma patient based on a simulated patient scenario as a teaching method in a small group teaching session (as used for example in ATLS course). This can be moved to an OSCE station where the examinee is asked to handle a patient on the operating room bed based on a scenario and perhaps a co-examiner playing the role of the nurse. So here we are comparing two things which are inherently different. What has actually been performed in this study is the comparison between the results of an assessment performed through single observation of one examinee by several examiners and scoring based on a pre-designated checklist and the results of an OSCE. The former is very close to a "long case" exam but on a simulated patient not as a workplace-based assessment. Considering the

settings of the exam, one can think that it very much resembles a viva, hopefully an objective structured clinical viva examination (OSVE).
2. The authors hypothesize that if they can find good correlation between the results of the two methods, this would mean that these methods “enhance” each other (lines 45-47). This is not a correct argument. The correlation between the results of two assessment methods may provide evidence regarding the criterion validity (if one is considered gold standard) either in the form of concurrent validity (if the two exams are rather simultaneous) or predictive validity (if the gold standard is conducted later on). In an extreme situation where the results are totally correlated, the conclusion drawn can be that one of the exams is redundant. Otherwise, it shows nothing regarding the “synergistic” effect of the two methods.
3. The sentence “However, some have expressed questions regarding the validity and reliability of 49 role-playing as assessment methods instead of real situation” (lines 49-50) needs a reference.
4. The authors state that if their hypothesis (correlations between the results of the two methods) proves to be true, “the role-playing assessment method would be considered as a more robust assessment method” (lines 56-60). How can this be inferred from such findings? At best, one could say that the two methods can be used interchangeably (although even this is not correct considering other aspects of validity such as content validity).
5. The so-called “scenario-based simulation and role-playing” method was conducted over a span of about two years. The knowledge and skill of the examinees were bound to change over this rather long time period. This not only makes it impossible to compare them within the group results, but makes the evaluation of the correlation between these findings and those of OSCE meaningless. How many times each resident was evaluated using the simulation model? Was it only once? Then it could have been very early in the study period or very late in the period. Is that true?
6. How were the checklists filled out anonymously (I assume the authors mean that the assessors were blinded)? The faculty member knew the examinees and observed them during their test. They could not be blind.
7. When was the OSCE held?
8. The explanation provided regarding the exposure and predictors are not correct and do not belong to this type of research. The authors are advised to consult a methodologist for delinating the variables in their study.
Thanks

Hassan Soleimanpour: Associate Editor | **Revision (1)** 10 Aug 2020

Dear EIC,
Many thanks for your invitation. The first round of peer review is finished but there are some critical issues that should be answered by the respected authors. My decision is a minor revision.
Thanks

REFEREE: EIC | **Revision (1)** 12 Aug 2020

Dear Author,

Your article is reviewed by the reviewers carefully. According to their comments, this document needs minor revision. Please follow their comments as requested.
Thanks.

OPEN PEER REVIEW

Revision (2)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Reply to reviewers (Revision 2)

Reviewers' Comments	Reply by authors
Reviewer 1	
Thank you for revising the manuscript. I believe that the revisions have been beneficial and that the manuscript is acceptable for publication despite some remaining imperfections with the use of the English language.	Dear Esteemed Reviewer, Thank you very much
Reviewer 2	
I read the revised version of manuscript and I think now it is appropriate for publication in Anesthesiology and Pain Medicine.	Dear Esteemed Reviewer, Thank you very much
Reviewer 2	
1- Simulated patient scenarios and role-playing are techniques which can be used in teaching and learning activities or assessments. They are not stand-alone methods by themselves……	Thank you very much for these GREAT corrections. We have considered this GREAT and WISE comment as the 1st limitation of our study at the end of discussion. Thank you again.
2. The authors hypothesize that if they can find good correlation between the results of the two methods, this would mean that these methods "enhance" each other (lines 45-47)……	Thank you for this interesting and wise comment. Your great comment is considered in the revision in the end of the 2nd paragraph of the Introduction and is YELLOW highlighted.
3. The sentence "However, some have expressed questions regarding the validity and reliability of 49 role-playing as assessment methods instead of real	Thank you very much for this GREAT comment. We added the references.

situation" (lines 49-50) needs a reference.	
4- The authors state that if their hypothesis (correlations between the results of the two methods) proves to be true, "the role-playing assessment method would be considered as a more robust assessment method" (lines 56-60).	Thank you for this WISE, important and Interesting comment. This great comment is considered in the revision in the end of the 3rd paragraph of the Introduction and is YELLOW highlighted.
5. The so-called "scenario-based simulation and role-playing" method was conducted over a span of about two years. …….	Thank you for this DETERMIN ING and GREAT comment. It has been addressed as the 2nd study limitation and your comments are now added to this limitation as complementary notes.
6. How were the checklists filled out anonymously (I assume the authors mean that the assessors were blinded)? …..	Thank you for suggesting this interesting comment which was added to the method section. Thank you again.
7. When was the OSCE held?	Thank you for this great comment. The OSCE was performed exactly in the midterm of the study; i.e. April 2019. This is mentioned in the text
8. The explanation provided regarding the exposure and predictors are not correct and do not belong to this type of research. …..	Thank you for this important suggestion. These are REVISED based on your recommendations in the text; in the final paragraphs of methods

OPEN PEER REVIEW

Revision (2)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Reviewer | **Revision** (2) — 17 Aug 2020

Dear AE,
I appreciate the authors for their effort to address the issues raised during the review.
Good luck

Hassan Soleimanpour: Associate Editor | **Revision** (2) — 17 Aug 2020

Dear EIC,
All questions were answered satisfactorily.
Congrats on a very interesting study.
Thanks

REFEREE: EIC | **Revision** (2) — 18 Aug 2020

Dear Author,
The document is reviewed carefully by the reviewers. According to their comments and your revisions as requested, this manuscript is accepted.
Thanks.