Author’s response to reviews

Title: High inter-observer agreement of observer-perceived pain assessment in the emergency department

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Author’s response to reviews:

Cover letter with a point-by-point response to the comments

Dear Editor

Thank you for considering our paper for publication and for the valuable comments from the reviewers:

We have made a comprehensive correction of the manuscript, covering the language issues and the scientific comments from the reviewers. Our correction are shown using track-changes.

Reviewer reports:

Yves Chaput (Reviewer 1): Thank you for giving me the opportunity to review this manuscript. The topic itself appears to be well within the scope that BMC Emergency Medicine typically covers.

I have read the manuscript and have a few major queries that I would like to submit to the authors. Major points are those I would like the authors to respond to (in changes to the manuscript if in agreement with the comment and if not, then by a counter argument in their
response letter). Minor points are non-essential queries that I leave up to the authors to address (or not) without the need to make any further comment in a return letter.

My 1st comment is that the writing style should be reviewed. I would strongly suggest that the authors have their manuscript read by a native English (UK or American) colleague for some basic corrections. The problem here is that the writing itself makes it difficult to assess the message the authors are trying to convey. One often has to read a phrase several times over in order to fully understand it.

Answer: The manuscript has been extensively revised by language professionals.

My 2nd major comment pertains to being more careful about the use of the cited material. A case in point is one of the premises of this study. In the Background section, second paragraph first line the authors state that "Pain is the most common complaint in an ED, citing reference [2¬]. The reference cited does not support this contention. In fact, the reference cited is a study that characterizes the distribution of self-reported pain scores among common ED diagnoses. It did not assess prevalence. Other authors have studies prevalence though, such as Cordell et al., Am J Emerg Med 20, 2002; Johnston et al., J. Emerg Med 16, 1998 and Tanabe et al., J Emerg Nurs 25, 1999. As such, if the authors are citing "prevalence" then they should use references where prevalence was assessed.

Answer: We have followed the advice and included Cordell et al., Am J Emerg Med 20, 2002 as references.

My 3rd major comment pertains to the second stated objective of this study, which does not appear to be either clear or well set up in the Background section. I am referring to the passage in the Background stating that the authors will assess whether "certain patient groups had higher agreement rates than others". This is a rather vague hypothesis.

One assumes that the authors are referring to the brief discussion of the "various factors such as age and gender and previous pain experience" mentioned in the second paragraph of the Background. I would however more fully develop the hypothesis as to what variables or parameters the authors are specifically looking for.
The aim of the present study was to assess the inter-observer agreement of perceived pain among ED nurses and to evaluate if age, gender, the patient location in an emergency room or a bedroom, type of pain and whether or not presence of a relative would affect the inter-observer agreement.

As a corollary to the above point, in the Methods section some of the variables could be fleshed out a bit, such as the location variable (not quite certain what the authors consider "wardroom"), why specialty was limited to surgery and not internal medicine…

The ED consisted of “emergency rooms”, equipped with facilities for resuscitations and surgical procedures and “ward rooms” with only a hospital bed and facilities for monitoring.

We changed the classification of the patients from specialty to site of pain since this was actually our intention, regardless of which specialty the patient belonged to. This is covered in the following text change:

All patients with musculoskeletal - or abdominal pain assessed the ED were invited to participate in the study …. We did not include patients with chest pain, as this group always receives high-level triage according to most triage systems, including the DEPT.

My 4th major concern is about the methodology (which is not quite clear) used and this may have some bearing on the statistics in this study. If only 2 individual nurses were involved and paired throughout the study (Dick and Jane for instance) then the statistical procedures appear to be appropriate. However, if multiple nurse pairs were used (Dick and Jane, Dick and Harry, Jane and Nancy, Bob and Charles … ) then the authors would have to detail that in the results section and honestly, how this would affect the statistics I would be hard pressed to say (as I am not a statistician). Perhaps the Fleiss kappa would be more appropriate under such circumstances? The authors should review this with their statistician.

Answer: We agree that the statistics deserves some elaboration. We had done the correct statistic tests according to renewed statistician consultation. We have included the following text:
In methodological section we added:

The first nurse went to the patient, secured privacy, and asked them to assess their pain on a 10-point NRS scale. The nurse then assessed the patient’s pain on the same scale without informing the patient of the result, went out, and immediately reported the patient’s score and the nurse score to the project assistant.

The second nurse then went to the patient and performed the same procedure. The nurses were not allowed at any time to discuss or compare their results with each other.

And:

We used weighted Fleiss-Cohen (quadratic) kappa statistics, which accounts for a situation where there were constantly two raters but their identity varied and the rating was in ordered categories.

My 5th major point concerns the Discussion. First, this is a statistical study so what do the authors think of a 0.55 kappa. What does that imply and how should it be interpreted. All the more so as the authors state that all of the elements for a strong Kappa were in place in this ED (highly trained nurses with a lot of experience in rating scale use). % agreement is fine but the "raison d’être" of Kappa is to eliminate chance within this % agreement.

Answer: we elaborated a bit more on this point in the discussion section:

The inter-observer agreement was lower than we had expected in a group of experienced ED nurses, who were well trained in using the NRS scale.

Still, our results justify that nurse-perceived pain assessment in patients in the ED is quite independent of the observer and not influenced by different patient groups, age, gender, or other circumstances. For the vast majority of patients, the triage level would not have been depending on the observer assessment.

A 1st minor point is in the Discussion section. In the first paragraph they state that the pain assessment was "independent of where the assessment took place"… While technically correct the phrase is rather all encompassing and in actual fact, the authors only assessed 2 particular
"places". I would probably rephrase it in a more specific manner i.e., "was independent of whether the assessment took place in the emergency room or in the … "

Answer: we gladly followed this good advice, adding:

Transferred to commonly used pain categories of no, mild, moderate or severe pain, a 70% agreement among the nurses was found, with a 95% prediction interval of +/- 1 pain category. This was independent of age, gender, presence or absence of relative, whether the patient was assessed in an emergency room or ward room, or if the patient complained of abdominal or musculoskeletal pain.

A 2nd minor point is I'm not quite certain what the purpose of the second paragraph of the discussion section is. It seems to just hang there. The authors present no patient rated data here so as to compare with the nursing data. They neither present any data concerning nurse's education or personal factors or patient's stage of illness. The discrepancy in nurse ratings found in this manuscript is not really the object of any discussion either.

Answer: we agree and have omitted the paragraph.

Dasari Harish (Reviewer 2): The manuscript seems to be written in Danish language first and then translated to English. As such, there are grammatical errors throughout major portions of the text, which need to be corrected before publication.

Answer: refer to reviewer 1 answer.

Content-wise, nothing is amiss.

Answer: we acknowledge the appraisal, but have made changes as suggested by reviewer 1.