**Author’s response to reviews**

**Title:** Medical School Clinical Placements - The optimal method for assessing the clinical educational environment. A graduate entry perspective.

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**Author’s response to reviews:**

Dear Editor,

Many thanks to the Editor and to the reviewers for their detailed and constructive review of our manuscript entitled Medical School Clinical Placements – The optimal method for assessing the clinical educational environment. A graduate entry perspective.

A response to each reviewers comments has been included and revisions have been made to the manuscript where indicated.

We believe that the changes made on the suggestion of yourself and the reviewers has significantly strengthened and clarified the manuscript. We are very pleased with the opportunity to provide a revised manuscript to consider for publication in BMC Medical Education.

Many thanks again,

Sincerely
Editor Comments:

This is an interesting study. Please address the following issues in the revision of the manuscript.

1) General: Please add page numbers.
Response: Page numbers have been added.

Abstract

2) General: I proposed to not use reference in the Abstract. Response: Citations have been removed from abstract

3) Background: Please specify: what is to be compared between DREEM and MCI.
Response: Updated to read 'The aims of this study were to compare the DREEM (the current de facto standard) and the more recently developed MCPI for the assessment of the clinical learning environment in a graduate entry medical student cohort by correlating the scores of each and analysing text comments. This study also aimed to explore student perceptions as to how the clinical educational environment is assessed.'

4) Results: Please add information on the results of the thematic analysis.
Response: abstract updated to include information on thematic analysis

5) Paragraph 1, line 10: Please add reference.
Response: Reference added.
6) Paragraph 3, line 47: The previous study by Kelly should be reported in greater detail. The reader should get to know that the DREEM and MCI instruments is already compared in a study, and what the key results are. Short summary of study and results added throughout manuscript where relevant.

Response: A summary has been added, and results incorporated where relevant. The summary reads as follows, The psychometric properties and validity of the MCPI has previously been explored[1]. A study by Kelly, Bennett et al has shown equivalent discrimination between placements as the DREEM when used to measure the clinical learning environment of direct entry students in a medical degree programme [1] [16], the study did not explore acceptability to students or the content of the free text comments.

7) Paragraph 4, line 52: Please define what is meant by “face validity”.

Response: A line to clarify the intended meaning has been added (the extent to which an instrument seems to measure what it sets out to measure).

8) Paragraph 4, line 52, etc. Please specify / justify/ explain why a graduate entry program is of extra value in assessing a clinical educational environment. The manuscript itself does not provide evidence for that. The quote “To date the clinical educational environment as experienced by graduate entry medical students has not been assessed using an instrument grounded in education theory” is not a sufficient underpinning by itself.

Response: The following has been added to strengthen the rationale for the study. ‘Their perceptions of the clinical learning environment may therefore be quite different to those of direct entry students. It is advisable to test instruments when they are being used in new educational contexts’

Methods:

10) Research Context: Please information on the country (may be in addition the region). Response: Country and institution of study included

11) Survey Instrument: Please include a file with the complete survey in the appendix of the manuscript.
Response: Instrument added as an appendix

12) Analysis of free text comment: Line 21: Please describe briefly the methodology used, so the reader can follow without going back to the references provided.

Response: brief summary of phases of analysis included as follows ‘This type of analysis divides data into smaller units, describing and interpreting them with a view to answering the research questions posed. The phases of analysis start with familiarising with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and finally producing a report.’

Results:

13) Response rates: Please provide basic sociodemographic on the study population.

Response: This information is included in a previous section (background) (should it be included again in results?)

14) Correlation between DREEM and MCPI: Please refine your statements about the strengths of correlation. Mostly are used. >0.30: weak, > 0.50: moderate and >0.70: strong relationship.

Response: The authors acknowledge that cut-offs for the value of the correlation coefficient can be arbitrary. The definition of strong of $r > 0.60$ is used here and a reference is been provided. (http://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one/11-correlation-and-regression)

Discussion:

15) Please elaborate why the chosen graduate entry program is of extra value in assessing a clinical educational environment.

Response: the following has been added –“Graduate entry students experience the ‘shock of transition’ to clinical practice differently to direct entry students [17]. These students have previous experience of higher level education and may have different insights into how feedback is sought.”

16) Limitation: replace “the biggest” by a major or “one important”.

Response: This change has been made.

References:

17) Please adhere to the BMC Medical Education style.

Response: Adherence to BMC Medical Education style checked.

Alvisa Palese

Dear Authors You have selected an important topic which is in the top of the agenda of educators. The manuscript is therefore important but requires some changes, from my point of view. In the abstract, you have reported some references that are not requested in the abstract: therefore, I suggest to remove the numbers of these references. Moreover, in the background, you should better state the research question which needs to be in line with the aims. The sample characteristics of the participants are not fully described; this is an important issue considering that readers should evaluated the external validity of the contents. Moreover, you have compared some factors or subscales of the questionnaires, by analysing the correlations but you have not performed the Explorative factor analysis which is considered as a preliminarily evaluation of the dimensions of a tool. The thematic analysis performed and the quotes should be better explained and supported (e.g. by reporting the number of the students answering). Finally I also suggest to check the manuscript in accordance with the journal guidelines

Response:

Citations have been removed from abstract.

The background section has been clarified as follows Updated to read ' The aims of this study were to compare the DREEM (the current de facto standard) and the more recently developed MCPI for the assessment of the clinical learning environment in a graduate entry medical student cohort by correlating the scores of each and analysing text comments. This study also aimed to explore student perceptions as to how the clinical educational environment is assessed.’

The description of the sample characteristics of the participants has been updated.

The dimensions of the MCPI have already been explored in a similar population using factor analysis. This has been clarified now in the introduction and referenced (reference 15).

The thematic analysis quotes have been rearranged to allow for greater clarity.
Marjo Wijnen-Meijer

Thank you for this interesting and well written paper. I have just some small remarks:

- Background section, line 29-32 (starting with "Another important issue..."): Which reference does underpin this statement?

  Response: With regard to Background section, line 29-32 this is the authors’ opinion, and this has been clarified in the text

- Methods: What is the exact formulation of the tow-part open ended question of the MCPI?

  . Response: Each question has a slightly different associated open question, for example - Weaknesses or ways leadership could be improved:… Strengths of leadership were:…

  Response: An appendix of the questionnaire has been attached.

- Methods: What was the order of the questions? Were the the questions about the suitability of the questionnaire asked after the completion of both questionnaires or after each directly?

  Response: The MCPI was asked first, followed by the DREEM. Each questionnaire was followed by the question on the suitability of the instrument. Manuscript updated to reflect this.

- Discussion: To you have recommendations for medical schools, based on the results of this study?

  Response: As the MCPI has the advantage of gaining richer detail on student experience, it therefore represents a viable and less onerous middle ground between detailed qualitative methods and the DREEM. Qualitative data suggests that it is the preferred method of evaluation for learning in the clinical setting for a graduate entry cohort. The authors therefore propose that the MCPI be used as an alternative to the DREEM when evaluating the graduate entry student learning experience in the clinical workplace (see revised conclusion)

Thomas Chacko

The wordings of the Title "how should we assess the educational environment?" could be modified to reflect the work done - or more review of literature should be presented to scaffold that statement
Response: The authors have amended the title to the following - Medical School Clinical Placements – The optimal method for assessing the clinical educational environment. A graduate entry perspective. The discussion and the conclusion have also been revised (see areas highlighted in yellow in the paper) to better reflect the aims and findings of the study. In light of these changes the authors believe the Introduction now provides a clearer rationale for the study undertaken.

Simon Watmough

The introduction nicely sets the scene and the additional information included is good. Might just want to say clearly which medical school this work has taken place at in the introduction. The paper reads well, is of interest to the wider medical education community and I would recommend it is published.

Response: The country and institutions of the study has been added.

Ioannis Dimoliatis, PhD

Are REFs in Abstract accepted?

Response: References removed

Is a r=0.71 strong correlation? See text.

Response: The authors acknowledge that cut-offs for the value of the correlation coefficient can be arbitrary. The definition of strong of r > 0.60 is used here and a reference is been provided. (http://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one/11-correlation-and-regression)

On which scale????

Response: Participants were asked to rate each questionnaire for usefulness on a scale of 0-7, reworded to clarify

What does this really mean? Is DREEM really not edu theory grounded??

Response: this is the finding of the review mentioned. The DREEM was designed by Delphi panel, rather than grounded in a particular educational theory as such.

A great advantage, IF all others are same

Response: agreed
Why not once? Isn’t it too much? Are students in the same clinical placement while completing it twice?

Response: MCPI was first for all students. This is addressed in the limitations section. It is completed once per semester. The students are on different placements each time it is completed.

Have you come across with “Parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of ‘coming to the wrong conclusion’.” (Geoff Norman. Likert scales, levels of measurement and the ‘‘laws’’ of statistics. Adv in Health Sci Educ (2010) 15:625–632 DOI 10.1007/s10459-010-9222-y)

Response: The authors agree with the reviewer that parametric statistics can be robust even for Likert data and non-normal distributions and have used parametric statistics throughout.

An absolute mean score (133 versus 32) misleads the (mean) reader, while a standard % score (66%, 66.5%, 66.7%) leads any reader to (usually subconsciously )conclude that there is no any difference at all (which is true)

Response: The interpretation of the scores generally uses the numeric value, however the percentage scores have now been included in parentheses for ease of comparison.

All scores could (or should) be incorporated in table 2 (for example, as follows)

Response: table updated as suggested.

Do all these r indicate a strong correlation? According to which definition?

Response: Statement re strength of correlations amended.

Incorporate all findings of the first paragraph in table 3 (as in table 2) – otherwise the table (that subconsciously captivates reader’s eye) wrong/hurts your work…

Response: this is an excellent suggestion which has been incorporated

0.22 ???

Response: this is the figure due to rounding

This is statistically significant at the 5% level, but is it educationally important? One could say that 3.49 and 3.27 on a scale 0 to 7 are more or less the same, what then does statistical significance REALLY mean? Transforming these figures in the % standard scale, 3.49/7=49.86%, 3.27/7=46.71%, their difference 3.14% is less than an educationally minimum important difference of, say, 5% (following the quality of life practice https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4926025/ last sentence before results), which means that “yes it is statistically significant, but not that educationally important”. This
conclusion could be considered as more in line with a recent proposal of 72 scinetists to reduce the until now significant p=0.05 to p=0.005 (https://www.nature.com/articles/s41562-017-0189-z) Cohen’s d could also be used to estimate the practical importance of the difference (http://ierj.in/journal/index.php/ierj/article/view/1233)

Response: This is a good point – the difference is small. However, while the difference is statistically significant, the size of the difference is small and unlikely to be important

This is not an interval (as you promise: 95%CI)

Response: this has been removed.

why so different numbers? Was any “free text box” compulsory to answer?

Response: none of the free text boxes were compulsory to answer. The difference may reflect the instruments being different. The order of the questions may also have had an affect.

without numbers for then and now, for total scores and subscale scores, how to judge if weaker of stronger?

Response: the results of the previous study have now been added to allow for easier comparison

Can we compare different things? If not, is the “MCPI most worthwhile compared to the DREEM” and the other statements of the previous paragraph valid?

Response: the difference relates to the fact that students seemed to focus on different areas of the programme when submitting comments. Many students submitted comments on both surveys, but the areas they focussed on were different.

Joy Rudland

The is a well written, clear paper. I enjoyed reading it. I have long thought the DREEM too long in length. Mention of the methodology used to construct DREEM was made a similar sentence regarding MCPI would also be useful. Table 1: other than the score data the response data could be removed. It is distracting and could be replaced with a sentence in the body of the text. My main concern is that is does not add substantially to the Kelly, M., et al. 2015. article or builds systematically upon those findings. I appreciate that a graduate cohort was used but I am not sure this is enough of a difference.

Response:

'The Manchester Clinical Placement Index (MCPI)[15] is a newer, designed for purpose instrument which has attempted to rectify the lack of theoretical grounding in previous instruments, and to address the unique aspects of a clinical working environment, potentially
making it a more valid instrument for use in this setting. The MCPI is based on Experience-Based-Learning in Communities-of-Practice educational theory.

This is a good suggestion, but the authors would like to keep the response data in the table for clarity.

This study investigated how acceptable both instruments were to students - this is of importance when considering which tool to use, if an institution is considering using a shorter instrument that has better constructive feedback, it is important to know that it is equally acceptable to students. As indicated in the Introduction at the end of page 3 in the paper the Kelly study did not explore acceptability to students or the content of the free text comments.

To provide clarity the Discussion Section “Assessing the clinical learning environment” and the Conclusion have been revised to reflect the difference in the studies and the relevance of the findings.