Author's response to reviews

Title: Psychometric properties and confirmatory factor analysis of the Jefferson Scale of Physician Empathy

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Version: 2 Date: 10 June 2011

Author's response to reviews: see over
RE: Psychometric properties and confirmatory factor analysis of the Jefferson Scale of Physician Empathy

Dear Editor,

Thank for your comments on our paper. We wish to respond in the following way:

Editor’s comments
Regarding the PCA, please see the response to Reviewer 1.

Regarding the reverse scoring, before any analysis, all negative items (10 items) were reverse scored which is indicated in text (page 7) as well as an endnote in Table 1.

We feel that the explanation for why a significant chi-squared indicates a lack of fit is more suitable in the results section (rather than the methods) as it provides an element of continuity for readership and aids comprehension.

However we are thankful for your comment regarding its explanation on page 7 which has been corrected.

Female students are deemed more likely to display compassionate care, perspective taking and emotional detachment than male students based on their mean score which is endorsed by Table 4 and now indicated within the text (page 12).

We have added extra sections for competing interests, authors’ contributions and acknowledgements at the end of the manuscript and have conformed to your required formatting. All revisions are highlighted in bold.

Reviewer 1
Under ‘Major Compulsory Revisions’ we have addressed points 1 and 2. Regarding points 3 and 4 we wish to explain the following. To our knowledge, all studies that have used the JSPE have also used PCA to identify its underlying structure. Indeed, most applications of PCA are exploratory in nature (see REF. 30). It is worth mentioning that three different techniques have been employed for the EFA approach in the psychometric literature: PCA, maximum likelihood estimations and regularised exploratory factor analysis (Jung S. and Lee S., Exploratory factor analysis for small
samples. Behaviour Research Methods, March 24, 2011, DOI: 0.3758/s13428-011-0077-9). Consequently we adopted PCA and identified three factors with eigenvalues greater than 1.25. Despite the fact that some authors use PCA and CFA with the same data set, we agree with the reviewer that this may not be informative. Nevertheless, our model has been confirmed using Structural Equation Modelling. We agree that in principle, we need to confirm our model with a study on an independent set of medical students in a different medical school in the UK but this is currently unfeasible and has been addressed in the limitations.

For point 5 we have reported the communality for each item which is common practice to identify problems with items. The proportion of variance of a particular item that is due to factors (shared with other items) is called communality. In addition we have reported the correlation matrix for the factors and item total correlation for each factor including those which have been removed from the scale.

Under ‘Minor Essential Revisions’ we have addressed points 1 to 8 in the text.

Under ‘Discretionary revisions’, points 1 and 2 have been addressed. For point 3 we have renamed factor 1 as ‘compassionate care’ in line with previous studies. However we are keeping ‘emotional detachment’ for factor 3 as we believe that this concept more closely represents the items which have loaded into it.

**Reviewer 2**

We have renamed factor 1 as ‘compassionate care’ in line with previous studies. However we are keeping ‘emotional detachment’ for factor 3 as we believe that this concept more closely represents the items which have loaded onto it.

We did not adopt the technique of randomly dividing the sample into two groups to perform EFA on one group and CFA with the other because of issues with response rate, which is important in factor analysis.

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