Author's response to reviews

Title: Changes of empathy in medical college and medical school students: 1-year follow up study

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Author's response to reviews: see over
The Biomed Central Editorial Team

Object: MS: 1987673991674757 - Changes of empathy in medical college and medical school students: 1-year follow up study
Minha Hong, Won Hye Lee, Jae Hyun Park, Tai Young Yoon, Duk Soo Moon, Sang Min Lee and Geon Ho Bahn

We are very pleased to resubmit our manuscript entitled: “Changes of empathy in medical college and medical school students: a longitudinal study” by Hong et al., for consideration for publication as an original article in BMC medical education.

The comments of each reviewer were incorporated, and adequate explanation regarding the results was made in response to the suggestions and reviewer questions of reviewer. As much of the original manuscript as possible was maintained during the revision. The English in this document has been checked by professional editors. For a certificate, we attached the PDF file. As per the suggestions made in the review of the previous manuscript, some changes were made. The changes are as follows.

Reviewer's report

Title: Changes of empathy in medical college and medical school students: a longitudinal study
Version: 1 Date: 4 April 2012
Reviewer: Bruce Newton

Reviewer's report:

All comments are "Major Compulsory Revisions"
Hong & colleagues have written a manuscript that is a continuation of a study that they started the year before; therefore, they call it a “longitudinal study”. I have read the manuscript repeatedly and find it rather confusing to interpret. Below, you will see the comments that I have made.

1. In the abstract the authors state that the JSE-S-K scores rose in the second year of the study in both educational systems, and state that empathy increased significantly after one year of medical education. This statement contradicts the remainder of the manuscript.

We have made some changes the result part in the abstract. We have deleted a confusing sentence and added a new sentence to clarify the meaning. And the position of next to last sentence contextually have changed to the first sentence of the result part.
2. The abstract also states that a required course in “Physicians in Society” contributed incrementally to empathy. However, the authors are using speculation (here and in the discussion) and have not designed a study to sort out if this course made a difference.

The review is correct. We agreed that the study design was not enough to sort out the speculation. So, we changed the result and conclusion part of the abstract. The last sentence has changed to conclusion part in the abstract. We have removed the sentence regarding speculation part in the abstract. Although this assumption should be further investigated with well-designed method, we think that the increment of empathy can partially explained by the course “Physicians in society”. So, we leave the content regarding “Physicians in society” as the suggestion in discussion part.

3. In the introduction, this reviewer is still not quite sure what the difference is between an MC and a MS educational system. This needs further explanation for readers that are not familiar with this type of curriculum.

We have made up for the insufficiency as reviewer’s comment. In introduction, we added a paragraph to explain Korean medical curriculum and clear up the terms MC and MS.

4. In the methods section, the authors show that there are significant age & sex differences in the two student populations. A considerable amount of maturation occurs between the ages of 24 and 27. Brain development has been completed and the older students have a greater wealth of life experiences to draw upon. Mention needs to be made on how this may impact the role-playing (vs. vicarious) empathy of an individual. This becomes even more important, since students are being studied that are in various stages of their medical education.

Table 5 shows that students were studied that just started medical school, as well as those that have been through a portion of their medical education. Other studies have shown the impact that medical education has on vicarious and role-playing empathy. This has not been taken in to consideration.

We fully accept the ideas that the reviewer points out. The result of study is somewhat beyond our expectation. We cannot explain it in any other way except education. The medical education is the only factor in common in both MC and MS groups. So, we think that it should be demonstrated in further studies and the shortcomings that the reviewer mentioned were processed as a limitation in Discussion.

5. In part 3 of the results, this reviewer is confused about the statements being made, that are then
repeated in other portions of the manuscript. The authors state that the empathy scores significantly increased between 2007 to 2008, regardless of year of training of medical education system. Yet in the next sentence, they say the empathy scores of both MC and MS students showed a non-significant tendency to increase from one training year to the next. These are incongruent statements.

We have revised the manuscript. Actually, we have deleted the last sentence of the part 3 in result to clarify the meaning.

6. In Table 5, you see that students in various stages of their career are being studied. Grouping these data together is an error in my estimation, because you are examining different student populations rather than taking a single matriculating class and following their empathy scores through their educational process. The latter, is a true longitudinal study. Also, the standard deviations of the delta are much larger than the delta itself. If you look at all the data, the total difference in the role-playing empathy score is 6.77 points out of a possible range of 140 (i.e., 111.34 vs. 104.57). Such a small difference spread suggests the scale is not differentiating changes in empathy from one time point to another.

We are examining a single student population with each grade in a single medical school/college and following their empathy scores after 1-year. To compare the empathy scores of the student after 1-year, we excluded the 1st grade students in this study and 4th grade students in previous study.

We fully accept the ideas that the reviewer points out. In current state, we can only treat the point as limitation in Discussion.

7. In the discussion, the JSE has been shown to be gender specific in the USA, but there are now a number of studies that show this is variable regarding which part of the world is being examined. This can be simply summed up as “cultural differences”. Trying sort out these differences would be rather difficult, and this part of the manuscript can be reduced in size.

We have revised the manuscript as the reviewer indicates. So, we have removed a large proportion of the discussion regarding gender variation of empathy.

8. There are problems with English language usage that needs to be corrected.

The English in this document has been checked by professional editor, native speaker of English. For a certificate, we attach the PDF file.

9. Overall, additional data needs to be gathered to make this a longitudinal study. If the authors suggest
that a course is making a difference in empathy, then they need to do the experimental design to back up the statement.

To make up for the comment, the title of the article has been changed to “Changes of empathy in medical college and medical school students: 1-year follow up study”.

**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests.

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**Reviewer's report**

**Title:** Changes of empathy in medical college and medical school students: a longitudinal study

**Version:** 1  **Date:** 11 June 2012

**Reviewer:** Jay Orlander

**Reviewer's report:**

Major Compulsory Revisions

1. The two schools programs that are being compared, MC and MS, differ only by a course in medical research and English. Hence there is no theoretical reason discussed to expect that there would be differences in empathy. The authors need to present a more compelling argument for this study. Perhaps that students are different ages. If life experience or motivation to enter medical school is different at different ages then perhaps this could be discussed as rationale for their study. An explanation on how students enter each pathway would be helpful to the reader. This should all be presented as a description of the subjects as part of the methods section earlier in the manuscript. The fact, revealed in the discussion, the MC was being phased out the MS was the new and enduring method of education, may make a comparative irrelevant. Perhaps the authors can explain on why such a comparison is important.

The reviewer is correct and we have added the sentences in the last part of the introduction.

2. For readers unfamiliar with Korean medical training a few sentences describing the training over the years in the curriculum is essential. For example in US medical schools the first 2 years, students have limited patient contact, spending most time on basic science with some training in physical examination and history taking, while the 3rd and 4th years are mostly clinical immersion in rotations dedicated to
various medical specialties where students are actively involved in managing patients, mostly on inpatient rotations. Medical School in the US is a 4 year curriculum. The European educational system often differences as students enter such schools with less post secondary education and spend 6 years in these Medical school. For those of us unfamiliar with Korean medical education, we need some information. It is difficult to believe that one course in the 3rd year of Students at Kyung Hee University has more impact than intensive clinical rotation would on perceived empathy. Hence for all the reasons above, the paper would be improved if the authors can summarize medical student training in Korea for the reader.

We have added some explanation about Korean medical education training as reviewer points out.

3. The mean scores for Korean students on JSE-S-K are lower than mean scores of students studied at US medical schools that they site. (Range at US schools 113 into the 120’s) while range in this paper was approx 104-111. Since the authors are attempting to put their findings in context of the literature this key difference deserves discussion both in context of the instrument used and in context of potential cultural differences that may impact either true expressed empathy or measurement of such.

We have revised manuscript as the reviewer’s comment. The explanation of low JSE-S-K scores in Korean students has been made to be more explicit in Discussion.

Major Essential Revisions

1. Table 1 can be deleted. The data is simple enough to express in text form only.
   Done.

2. Table 4 the ANOVA can be deleted. I believe that the raw data from this analysis would not be accessible to the average reader.
   Done.

3. Table 5 should have P-values for the individual comparisons. Total changes are not relevant as the question being asked is effect of each year and so the decreases (not shown in their data) or stability shown in 3rth to 4th year in MS students only, would limit comparison.
   We have made some changes to Table 5 as reviewer indicates.

Discretionary Revisions

1. There is no hypothesis expressed for including the temperament assessment in the introduction.
To put together all the reviewers’ comment, we have removed the personality part of the manuscript.

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
'I declare that I have no competing interests

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**Reviewer’s report**

**Title:** Changes of empathy in medical college and medical school students: a longitudinal study

**Version:** 1  **Date:** 6 July 2012

**Reviewer:** Donald Munro

**Reviewer’s report:**
See attached documents (1) Review of Hong et al/Munro.pdf (2) Hong et al/Track Changes.doc

Major compulsory revisions:
1. Rewriting of discussion and parts of introduction, inter alia to clarify use of terms MC and MS.

   To put together all the reviewers’ comment, we have added the sentences in the last part of the introduction.

2. Removal of personality aspects of the study (and relevant tables) and abbreviation of the MS, OR providing a fuller rationale for its inclusion, evidence based hypotheses, and description of the test.

   As the reviewer’s comment, we have removed personality aspects. So, a considerable change has been made.

3. If the latter course is taken, revision of the statistical methodology for the personality aspects of the study (see Review of Hong et al/Munro.pdf)

Minor essential revision:

2. Correct a few minor linguistic problems (see Hong et al/Track Changes.doc).

   The English in this document has been checked by professional editor, native speaker of English. For a
Certificate, we attach the PDF file.

Discretionary revision:
3. Clarification of the use of ± shorthand for SD
We have changed to ‘( )’ instead of ‘±’. See the Tables.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published
Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:
I have been for several years involved in research on medical school selection, using tests of empathy and other dimensions devised by myself or other members of a team (see http://www.pqa.net.au), and these tests have been used commercially in selection mode.
2. The tests in question could conceivably be seen as partial alternatives to the tests used in this study (Jefferson Scale of Empathy, Temperament and Character Inventory), though I am not aware of any conflict due to this. None of our publications have alluded to these instruments, and my review passes no comments on them per se.
3. I believe that I can declare that I have therefore no competing interests.

We attached the files in Microsoft Word format.

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