Reviewer’s report

Title: Revisiting the Trajectory of Medical Students’ Empathy, and Impact of Gender, Specialty Preferences and Nationality: A Systematic Review

Version: 0 Date: 15 Nov 2019

Reviewer: Ingrid Preusche

Reviewer's report:

Facing a multitude of studies on empathy in medical education, recent review studies focusing on a certain aspect are relevant and therefore worth to be published.

The review points out the present state of research regarding four main foci - change in empathy scores (mainly by self-assessment questionnaires) over time of medical study, gender aspects in empathy (scores), specialty choice and cultural aspects.

The title is suitable.

The Abstract summarizes the work appropriately.

The background section gives a good introduction into the topic. However, in empathy research the definitions are manifold and this is reflected by the different studies and results. The authors have mentioned this briefly in the background section and also reflect on this ambiguity lateron, nonetheless I would suggest to discuss this in more detail in the background section.

The method section is well described and comprehensive. Especially the quality assessment and risk of bias in the included studies has to be mentioned positively.

The discussion section links the results summarized over the studies well to possible explanations and former systematic reviews. The overall-results on empathy and specialty choice proved not consistent, however the paper should provide possible explanations why empathy (or what "form"/definition of empathy) might or might not be relevant for specialty choice.

Strength and limitations are well described.

The future research section however points out that mixed-methodologies research should be raised - this seems inconsistent with the limitation that qualitative studies were excluded from the review. I would recommend to rephrase that future research, e.g. reviews, should incorporate qualitative studies.

Conclusions repeat more or less former sections of the paper.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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