Reviewer’s report

Title: Impact of a narrative medicine programme on healthcare providers' empathy scores over time

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Reviewer: Valentin Terhoeven

Reviewer's report:

The authors present a study on the impact of a narrative medicine competition programme on the empathy of healthcare providers in a substantially large group of 142 physicians. Physicians attended the narrative medicine competition programme for a period of 2 months. Participants were divided into individuals and teams. Levels of empathy were measured at three successive instances (before, immediately after, and 1.5 years after the competition programme). Empathy total score increased after narrative medicine competition and was sustainable for 1.5 years. Therefore, narrative medicine competition seems to be feasible as an educational programme for empathy in health care providers. Differences in gender and seniority are discussed in the conclusion.

Good points of the study are related to the connection of a narrative medicine competition programme and multi-professional healthcare providers' empathy as well as the repeated measurements in order to observe changes later on. The study approach of measuring empathy changes in healthcare providers seems to be effective. However, there are a number of issues I feel should be addressed.

ABSTRACT:

1) When writing 'competition program' choose programme to apply the term consistently.

2) Please provide the number of female participants in the abstract.

3) When the authors write 'Empathy score increased after narrative medicine competition …' do they mean that physicians' empathy increased independent of subdivision (single vs. team group or overall empathy degree change of all participants)? Please state this more clearly.
BACKGROUND:

4) The definition of physician empathy as a multidimensional concept involving cognitive and affective domains is written well. The authors describe that 'In a factor analysis study, 52% of the variance in patients' ratings of satisfaction with their medical care was accounted for by the physicians' level of interpersonal warmth and respect, which are among the features of physician empathy.' To link the statements, it might be worth including the specific domain of empathy (affective or cognitive?) of interpersonal warmth and respect.

METHODS:

5) Participants have been assigned into two groups (single vs. team), and the dependent variable (i.e. empathy) was measured over three time points (before, immediately after, 1.5 years after). Therefore, I think a Mixed Model ANOVA would be favorable over t-tests.

6) Which was the dose of Narrative medicine competition programme? (how many times? daily? Once per week? For how long?) Please state more detailed the application of the treatment programme.

7) Please state the number of female participants in the 'Study Participants' Section.

8) What was the group size of 'team groups'? Please state this more clearly.

9) Which was the number of junior, moderate seniority and most seniority participants?

10) The narrative medicine competition programme is written well.

11) Which was the average age (SD) of physicians? Due to the fact that empathy increases with age (Ze O, Thomas P, Suchan B. Cognitive and affective empathy in younger and older individuals. Aging Ment Health. 2014;18(7):929-935.), the authors should provide the average age and standard deviation of the participants. If this is not possible, then I think this is a limitation of the study.
RESULTS:

12) "However, statistically significant changes of empathy scores were only noted immediately after the competition in team group (p=0.048)." This appears to be the main finding of the paper?

13) Why did the authors not report test-statistics? In this section as well as in tables, the authors should report test statistics (i.e. F-value, p-value, Mean (SD). Please state the results in more detail.

14) To orient the readers it might be worth to introduce a further heading (e.g. 'Overall empathy degree change of participants' and 'Changes in empathy: gender and seniority differences.

15) Why did the authors report only the total score? Why did the authors not provide results related to the different domains of empathy? I think it is important to distinguish between affective and cognitive empathy as the authors do in the background section. The authors should report if physicians increase their empathy in the cognitive or affective domain (or in both of them?).

DISCUSSION:

16) 'For medical students, although there may be increased empathy during early school years, significant declines are noted as well after entering the clinical phase when they have direct interact with patients.' There is some newer evidence: Roff S. (2015) Reconsidering the "decline" of medical student empathy as reported in studies using the Jefferson Scale of Physician Empathy- Student version (JSPE-S). Please adjust.

17) There is evidence that females record higher scores on self-report measures of empathy. The authors should include this in the discussion section (e.g. Baron-Cohen S. Zero Degrees of Empathy).

18) The authors should distinguish the different domains of empathy and report/discuss the results correspondingly.
19) The authors cite Neumann et al. in order to demonstrate a significant downward trend in self-assessed empathy on residents in their clinical training. However, there is contradicting evidence (Roff S. (2015).

GENERAL RECOMMENDATION: Good points of the manuscript are the repeated measurements in order to observe the changes later on. However, there are some major revisions in methods and statistics as described above. The authors should analyze the data again using adequate statistical methods.

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

No

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

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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