Author's response to reviews

Title: The mediating role of resilience in the relationship between stress and life satisfaction among Chinese medical students: a cross-sectional study

Authors:

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Author's response to reviews: see over
Dear editor

Thank you sincerely for your letter and the reviewers’ comments concerning our paper entitled “The mediating role of resilience in the relationship between stress and life satisfaction among Chinese medical students: a cross-sectional study” (MS: 2078121147144773). We have revised our manuscript after carefully reading the comments made by the three reviewers. And we also proofread the manuscript very closely for grammatical errors before we turned it in. All changes were in red color.

Below is point-by-point description of our revision according to the reviewers' comments.

Reviewer #1:
1. There were many studies which examine individual positive well-being among other groups. The authors should cite the studies to strengthen the background of the study.
Response: According to the reviewer’s advice, we added more literature (p.4, line4-7) and 7 references (reference 5-11 ) to strengthen the background of the study.

2. The authors should provide more rationale for the mediating role of resilience in the relationship between stress and life satisfaction. It seems feasible that resilience moderate the relationship.
Response: According to the reviewer’s advice, more rational was provided for the mediating role of resilience (p5, line 12-21). Additionally, we also tried to use hierarchical linear regression analyses to examine moderating role of resilience However, the interaction term of stress and resilience was not significant for life satisfaction ($\beta =0.002, p(0.910)>0.05$).

Table Hierarchical linear regression analyses to examine moderating role of resilience

<table>
<thead>
<tr>
<th>Variables</th>
<th>Step 1 ($\beta$)</th>
<th>Step2 ($\beta$)</th>
<th>Step3($\beta$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>0.067**</td>
<td>0.019</td>
<td>0.019</td>
</tr>
<tr>
<td>Study Program</td>
<td>0.135**</td>
<td>0.056**</td>
<td>0.056**</td>
</tr>
<tr>
<td>Stress</td>
<td>-0.182**</td>
<td>-0.182**</td>
<td>-0.182**</td>
</tr>
<tr>
<td>Resilience</td>
<td>0.456**</td>
<td>0.456**</td>
<td>0.456**</td>
</tr>
<tr>
<td>Stress* Resilience</td>
<td></td>
<td></td>
<td>0.002</td>
</tr>
<tr>
<td>F</td>
<td>33.030**</td>
<td>335.623**</td>
<td>268.410**</td>
</tr>
<tr>
<td>R$^2$</td>
<td>0.022</td>
<td>0.315</td>
<td>0.315</td>
</tr>
<tr>
<td>$\Delta$R$^2$</td>
<td>0.021</td>
<td>0.314</td>
<td>0.314</td>
</tr>
</tbody>
</table>

**p<0.01 (two-tailed)

3. It is helpful to the manuscript if the authors can exemplify the three scales including the 10-item Perceived Stress Scale, the 14-item Wagnild and Young Resilience Scale, and
the Satisfaction with Life Scale.
Response: According to the reviewer’s advice, two item examples were provided for each scale (p7, line 19-22; p8, line 8-10; p8, line 16-18).

4. Please provide a rationale for why all participants were divided into two age groups: group A (15-22 years old) and group B (22-28 years old).
Response: As the number of the students aged below 18 (15-17) was only 9 in total (2 students aged 15 and 16 respectively and 5 students aged 17), this group of students were merged with nearing group. The remaining span from 18-28 was divided into 2 groups by 5-year period.

5. It will strengthen the results if the authors can conduct the mediation test statistics which derived from a procedure developed by Sobel.
Response: According to the reviewer’s advice, we used Sobel test to calculate the mediation effect (p10, line 5-6; p11, line 15).

6. The authors noted that “The participants might have underestimated or overestimated the relationship between depression and psychological variables.” It is not consistent with the content of the current study.
Response: We are sorry for the mistake, and changed “depression and psychological variables” into “the study variables” (p.15, line11).

7. It would be helpful to expand on this in two or three sentences, perhaps by giving examples of “resilience-based interventions”.
Response: According to the reviewer’s advice, several resilience-based interventions were added. (p14, line 18-22; p15, line 1-5).

8. More interpretation is needed as to why resilience mediated the relationship between stress and life satisfaction among Chinese medical students.
Response: According to the reviewer’s advice, more interpretation for the mediation was added (p.14, line1-7).

9. There are several grammatical errors throughout (e.g., missing plurals) which should be further polished by the authors.
Response: We felt sorry for grammatical errors. We thoroughly proofread the manuscript and tried our best to correct the grammatical errors.

Reviewer #2:
1. (major) As with all studies, I strongly recommend that the authors be asked to declare whether:
   1) These measures were the only ones given
   2) Their hypothesis about the mediating role of resilience was stated a priori
   3) They had any other a priori hypotheses that were tested in this dataset.
Response: For the study design, we decided to work on the positive well-being of students after literature review, so we chose SWLS; RS-14 was chosen, because the previous research of our department has found resilience was often strongly related to psychological outcomes in Chinese culture. High stress is common among medical students worldwide.

We declare
1) These measures were the only ones given
2) The hypothesis about the mediating role of resilience was stated a priori
3) No other a priori hypotheses were tested in this dataset.

2. (major) The authors should cite any evidence of training programs that have successfully increased resilience. It would also be helpful for them to review any evidence that resilience changes over time and is not a stable personality trait.
Response: According to the reviewer’s advice, several resilience training programs were added (p14, line 18-22; p15 line 1-5).

3. (minor) The authors should note the effect size of all reported correlations, and limit their interpretation of correlations with very small magnitudes.
Response: According to the reviewer’s advice, we made relevant changes (p10, line 19-22; p12 line 1-6).

4. (discretionary) The authors speculate as to the causes of some of the differences they found; they may want to note other research that they would recommend based on these issues.
Response: Thank you for the reviewer’s suggestion. We tried our best but still failed to find the references that we could draw regarding the causes of the differences among Chinese college students or even students. Perhaps this is why “the descriptive results from this study may be valuable on their own” as the reviewer said.

5 (discretionary): If the data gathered for this study permit, have they considered planning follow-ups with these participants?
Response: Thank you for the reviewer’s suggestion. We do plan to perform a longitudinal study with the participants. In addition, probably an intervention study of resilience will also be carried out in smaller sample as well.

Reviewer #3:
1. Researchers should show evidence of sample size calculation. What informed the decision to use 4 whole classes of clinical medicine students in 5 year program and 3 whole classes of clinical medicine students in 7 year program?
Response: The number of clinical medicine classes in 5-year programs at the four medical colleges and universities ranged from 6 to 12, while the number of classes in 7-year programs ranged from 3 to 8. Thus, we do feel our sample is representative of the students body in the two programs. In addition, we also took into account the personnel and other resources available to reach the target students when the decision was made
on the sample size of the study.

2. Table 2 and table 3 should be improved.
Response: According to the reviewer's advice, the 2 tables were improved and reviewed by a statistician at our university.

3. Language errors
Response: Thank you for the reviewer's corrections. We thoroughly proofread the manuscript and tried our best to correct remaining grammatical errors,

Sincerely,

Pro. Lie Wang