

**Reviewer Comments**

This manuscript presented with interesting results regarding career choice in Chinese Pediatric medical students.

1. The basic characteristics of the enrolled medical students should be presented, including grade, gender, ever involved in clinical rotation and etc.

**Response:** We have added basic characteristics of the enrolled medical students including age, grade, gender, and involved in clinical rotation in Table 1 as suggested (please see Page 9, line 137).

**Table 1. Baseline characteristics of the enrolled medical students\***

Characteristics	Before COVID-19 (N=106)	After COVID-19 (N=104)
Age—yr	21.28±0.97	21.28±0.96
Female sex —no. (%)	65 (61.3)	63 (60.6)
Grade 2015 ‡	7 (70)	7 (70)
Grade 2016 §	22 (59.5)	21(58.3)
Grade 2017 ¶	17 (56.7)	17 (56.7)
Grade 2018 ¶	19 (65.5)	18 (64.3)
Involved in clinical rotation — no. (%) †	29 (27.3)	28 (27.1)

\* Plus–minus values are means ±SD. There were no significant differences ( $P \geq 0.05$ ) between the two groups for baseline variables.

‡ Grade 2015 students were in the fifth year and had clerkship training in hospitals.

§ Grade 2016 students were in the fourth year and had observational rotation in hospitals.

¶ Grade 2017 and 2018 students were not involved in clinical rotation.

Clinical rotations were withheld since the end of January 2020.

† Included students from grade 2015 and grade 2016.

2. Since the manuscript aimed to evaluate the impact of COVID-19 pandemic on career

choice, the career choice should be divided more specifically into respiratory medicine, ICU etc. The current classifications of career choices were relatively too large.

**Response:** Thank you so much for your good suggestion. We agreed it would be helpful if we had investigated the choices in detail. For the 3-year residency training in Pediatrics, students had rotations in general pediatrics. They made the decision about subspecialty after finishing residency training. Given that, we didn't further investigate the subspecialty of career choices in this study. However, since we didn't have the data related to that, no further analysis was available at this point. In the future study, we will put that into survey to better describe career choices. **We have added this point under the Limitations "Third, the current classifications of career choices were relatively too large and did not investigate subspecialties such as respiratory medicine or intensive care medicine. Future studies should include those choices to give a full picture of the impact."** (please see Page 23, line 321-323).

3. Correlation analyses between characteristics of medical students and their career choice should be conducted. Based on the analyses, more precise career education can be performed and tailored help can be given to those who really need under this pandemic.

**Response:** Thank you for this helpful suggestion. Grade 2015 students were in the fifth year and had clerkship training in hospitals. Grade 2016 students were in the fourth year and had observational rotation in hospitals. Grade 2017 and 2018 students were not involved in clinical rotation. **We conducted analysis between clinical rotation and career choice.** The result was shown in Table 2 that there was no statistical correlation was identified among gender, experience of clinical rotation and different career choices (Please see Page 10, line 145-146, and Table 2).

**Table 2. Participants' career choices before and after the COVID-19 outbreak**

Career choice	Characteristics †	Before (N=106)	After (N=104)	P value
Become doctors	Total — no. (%)	77 (72.6)	71 (68.3)	
	Total — no. (%)	42 (39.6)	39 (37.5)	
Practice pediatrics	Total — no. (%)	42 (39.6)	39 (37.5)	
	Female sex — no.	27	25	0.986

	Clinical rotation <sup>‡</sup> — no.	24	21	0.765
	Total — no. (%)	35 (33.0)	32 (30.8)	
Practice medicine but not pediatrics	Female sex — no.	19	17	0.924
	Clinical rotation— no.	15	13	0.853
	Total — no. (%)	27 (25.5)	30 (28.9)	
Not determined	Female sex — no.	18	19	0.792
	Clinical rotation— no.	6	9	0.506
	Total — no.	2 (1.9%)	3 (2.8%)	
No medicine	Female sex — no. (%)	1	2	0.709
	Clinical rotation— no.	2	3	0.987

† There was no significant difference (P=0.9) in the proportion of different career choices between the two groups.

‡ This included students only from grades 2015 and 2016.

Besides, we have dug more information such as “How many students change choice after the outbreak of COVID-19” and “why they change their choice” to better explore tailor help that can be given to those who really need under this pandemic.

We concluded that forty-nine students (49/104, 47.1%) thought it had a positive impact. Among them, 43 students confirmed the decision to become a good doctor, and 6 students were considering becoming doctors. This positive effect was more pronounced among 39 students (26/39, 66.7%) who wanted to practice pediatrics. The outbreak positively strengthened most pediatric medical students’ belief in practicing medicine or pediatrics (P<0.001). With respect to the reasons, the majority of students thought it was a great honor to become doctors to save lives despite the high work pressure and intensity. (Please see Page 12, line 153-161)

We found that there were only 14 students (13.5%) thought that COVID-19 had a negative impact on their career choices. **Nine students felt worried, and two students felt confused about practicing medicine and would probably change their mind after graduation. One student who initially wanted to be a doctor decided not to practice medicine at the time of the survey.** The reasons for these choices included high-intensity clinical work, low-paying salaries and fear of not being able to save patients' lives. (please see Page 13, line 162-167)

Moreover, after looking at the students' knowledge background, it is worth mentioning that 9 of the **14 students (64.3%) were from grade 2016 and were in the fourth year** of undergraduate medical education; they had undergone observational rotation but had not started clerkship training in clinical settings. **Four of them (28.6%) were from grade 2017 and were in the third year** of undergraduate medical education; they had just started clinical courses but were not involved in clinical rotations. (please see Page 13, line 168-174, Figure 2 which is newly added).

**These students did not have sufficient exposure to the hospital environment** and were more vulnerable to changing their choices due to a lack of relevant health care knowledge. Thus, we recommend that **mentors and supervisors should pay more attention to students with this knowledge background. Interventions should be applied to focus on their emotions and stress levels.** (Please see page 22, line 306-312)

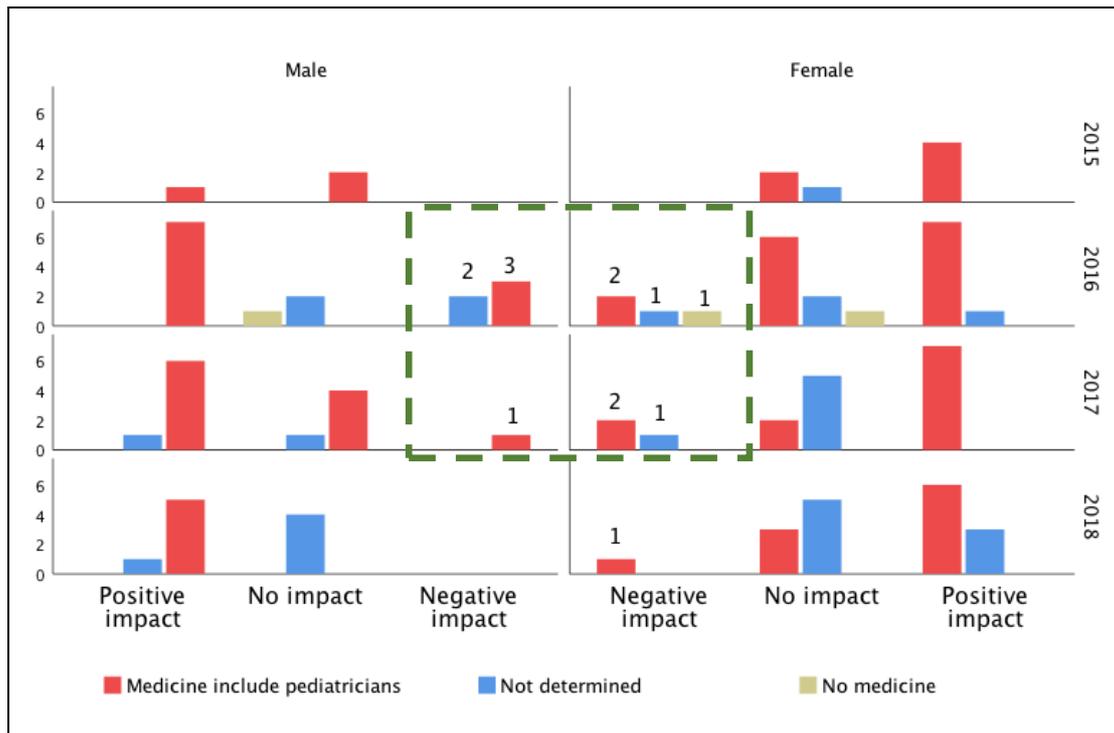


Figure 2. The distribution of gender, grade and career choice by the nature of different impacts (positive, negative and no impact) of the outbreak. The red, blue and brown bars represent career choices of practicing medicine (include pediatricians), not determined and no medicine. The x axis represents the nature of the impact and is distributed by gender. The y axis represents the numbers of students and is distributed by different grades. The green dotted box highlights the characteristic of students who experienced a negative impact of COVID-19.

### Reviewer B

This study entitled “Positive Impact of COVID-19 on Career Choice in Pediatric Medical Students: A Longitudinal Study” intends to investigate the impact of current COVID-19 outbreak on career preferences of pediatric medical students and to explore underlying factors.

In this study, the authors performed questionnaire about career choices of medical students. The topic of this study is interesting. However, I have following concerns which need to be addressed before it can be published on TP Journal.

Minor comments:

1. The language and grammar should be rechecked because of a plenty of errors, especially in the Introduction and Discussion section. If the authors’ native language is

not English, I strongly suggest the authors have their manuscript reviewed for clarity by colleagues or someone whose native language is English.

**Response:** Thank you for your helpful suggestion. Our native language is not English and sorry for plenty of errors. **We sent our manuscript to experts whose native language is English for clarity.** Many changes and corrections have been made especially in the Introduction and Discussion section.

2. The authors need to upload the questionnaire as a supplemental file.

**Response:** Thank you for your valuable suggestions. We **uploaded the questionnaires** before and after the COVID-19.

The questionnaire before COVID-19 can be also accessed at <https://www.wjx.cn/jq/50659120.aspx>

The questionnaire after COVID-19 can be also accessed at <https://www.wjx.cn/jq/59073993.aspx>

3. Where are the figure legends?

**Response:** Thank you for your suggestions. We have added the figure legends for figures 1 to 4. (Please see Page 8 line 130, Page 14 line 174, Page 15 line 185, Page 16 line 193)

Major comments:

The first part of the results section (Participants and their career choices towards medicine and pediatrics) should be reformed:

1. The authors need to reformed the 1st paragraph of this part. They need to displace the characteristics of included students and list their information as a new “Table 1”, and they need to display a Participant Flow as a new “Fig1” (Because they declared included 120 students, and then 106, and then 104, they need to make it clear) like these papers:

1. Table1 and Participant Flow of Neurodevelopmental outcomes of preterm infants fed high-dose docosahexaenoic acid: a randomized controlled trial. Makrides M, et al. JAMA. 2009.

2. Table1 and Participant Flow of Docosahexaenoic Acid and Bronchopulmonary Dysplasia in Preterm Infants. N Engl J Med. 2017 Mar 30;376(13):1245-1255. doi:

Response: Thank you for your helpful suggestions. We downloaded the two references and have added a participant flow as a new Figure 1 (please see Page 8, line 130)

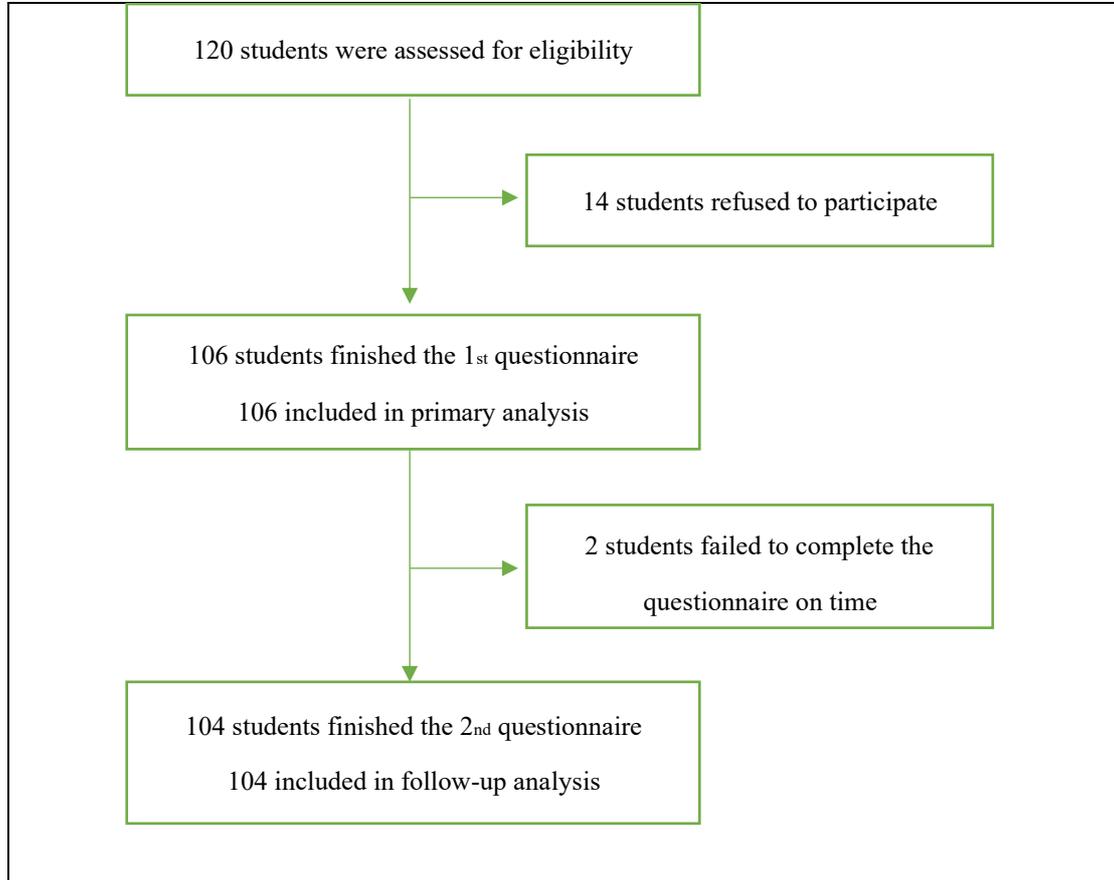


Figure 1. Participant flow

We also display the characteristics of included students and list their information as a new Table 1. (please see Page 9, line 137)

Table 1. Baseline characteristics of the enrolled medical students\*

Characteristics	Before COVID-19 (N=106)	After COVID-19 (N=104)
Age—yr	21.28±0.97	21.28±0.96
Female sex —no. (%)	65 (61.3)	63 (60.6)
Grade 2015 ‡	7 (70)	7 (70)
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‡ Grade 2015 students were in the fifth year and had clerkship training in hospitals.

§ Grade 2016 students were in the fourth year and had observational rotation in hospitals.

¶ Grade 2017 and 2018 students were not involved in clinical rotation.

Clinical rotations were withheld since the end of January 2020.

† Included students from grade 2015 and grade 2016.

2. The authors need to reform the 2nd paragraph and the “Table 1” of this part. I think the 4 groups of this part is not correct and should be independent from each other. The “Practice medicine” actually includes “Practice pediatrics”. I think they need to change into: “Practice pediatrics”, “Practice medicine but not pediatrics”, “NO medicine” and “Not determined”.

**Response:** We have reformed the second paragraph modified the 4 groups in “Practice pediatrics”, “Practice medicine but not pediatrics”, “No medicine” and “Not determined”. (Please see Table 2 on page 10, line 146).

**Table 2. Participants’ career choices before and after the COVID-19 outbreak**

Career choice	Characteristics †	Before (N=106)	After (N=104)	P value
	Total — no (%)	42 (39.6)	39 (37.5)	
Practice pediatrics	Female sex — no	27	25	0.986
	Clinical rotation— no	24	21	0.765
	Total — no.(%)	35 (33.0)	32 (30.8)	
Practice medicine but not pediatrics	Female sex — no	19	17	0.924
	Clinical rotation— no	15	13	0.853
	Total — no.(%)	27 (25.5)	30 (28.9)	
Not determined	Female sex — no	18	19	0.792

	Clinical rotation— no	6	9	0.506
	Total — no	2 (1.9%)	3 (2.8%)	
NO medicine	Female sex — no. (%)	1	2	0.709
	Clinical rotation— no	2	3	0.987

† There was no significant difference (P=0.9) in the proportion of different career choices between the two groups.

The second part of the results (Characteristics of the impact on career choice after the outbreak) should be redone:

1. The typeface of “Characteristics of the impact on career choice after the outbreak” should be recheck.

The typeface of “Characteristics of the impact on career choice after the outbreak” had been changed.

**Response: The typeface of “Characteristics of the impact on career choice after the outbreak” has been rechecked and corrected. (please see Page 11, line 148)**

2. Basically, I don’t think the results of this part (Table2 and Fig1) reflect the topic of this part. The topic of this part is the characteristics change after the outbreak, the authors need to dig more information such as “How many students change choice after the outbreak of COVID-19?”, “Why they change their choice?” In my opinion, this part should be the most important part of this study. However, I don’t think the authors addressed "characteristics change after the outbreak" very well.

**Response: Thank you for this helpful suggestion. The second part of the results had been redone. We have dug more information such as “How many students change choice after the outbreak of COVID-19” and “why they change their choice” to better explore tailor help that can be given to those who really need under this pandemic.**

Grade 2015 students were in the fifth year and had clerkship training in hospitals.

Grade 2016 students were in the fourth year and had observational rotation in

hospitals. Grade 2017 and 2018 students were not involved in clinical rotation.

Because students from different grades have different knowledge background and exposure to clinical settings.

First, we conducted analysis between clinical rotation and career choice. The result was shown in Table 2 that there was no statistical correlation was identified among gender, experience of clinical rotation and different career choices (please see Page 10, line 145-146, and Table 2).

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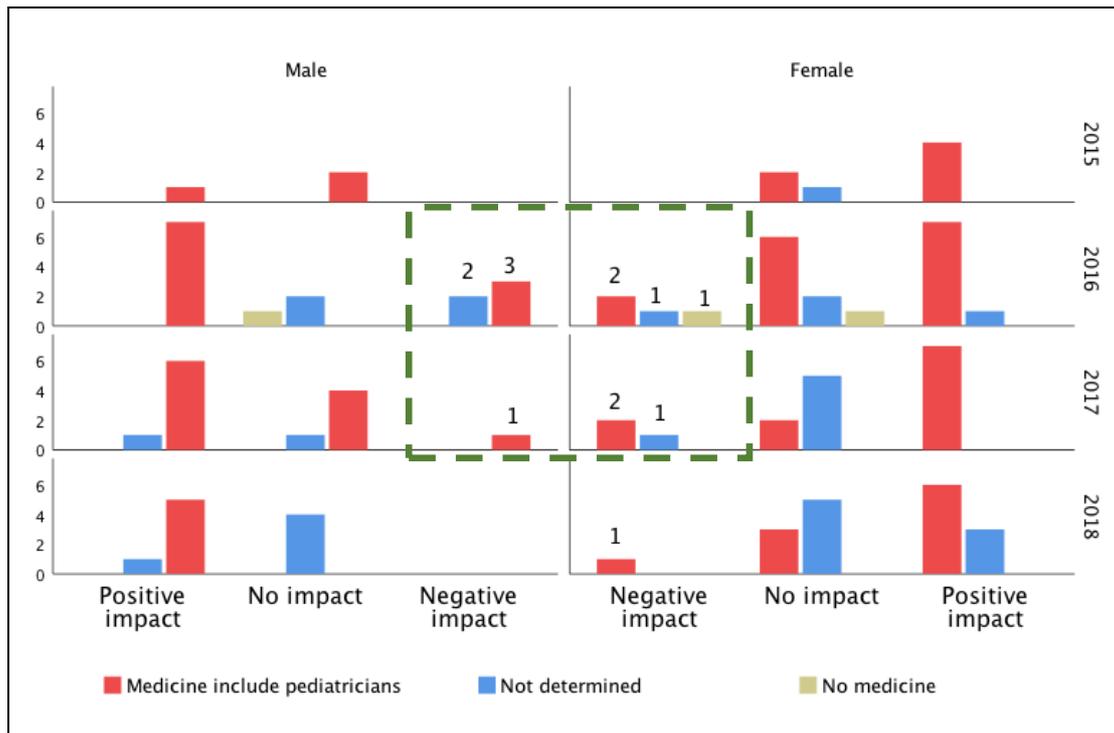


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The third part of the results section (Anxious status in different career choice group since outbreak) is not that bad but still needs improvement:

1. Fig2 should be displaced as a pie chart.

Response: Because we added a new figure 2, so the original figure 2 was changed to figure 3. We have changed the display of this figure as a pie chart. (please see Page 15, line 185).

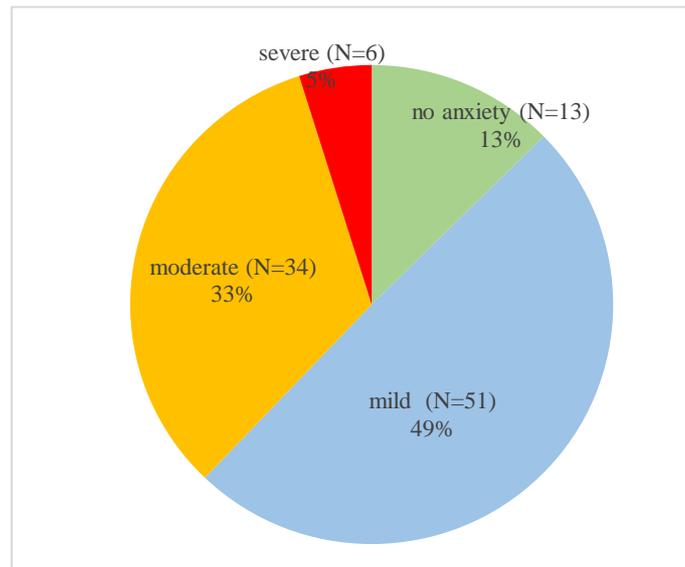


Figure 3. Distribution of anxiety scores of 104 pediatric medical students. No anxiety refers to an anxiety score equal to 0; mild anxiety refers to scores from 1 to 3; moderate anxiety refers to scores from 4 to 6; severe anxiety refers to scores greater than 7.

2. In Fig3, what are the percentage refer to? (72.6% 68.3%). I think they need to explain.  
 Response: The percentage of 72.6% and 68.3% referred to students choose to practice medicine (including pediatrics) before and after the outbreak of COVID-19. Because the numbers have been already listed in Table 2 (please see Page 10, line 146), this figure has been modified. The initial bar representing 72.6% and 68.3% has been changed to 'Medicine but not pediatrics' according to the 4 groups in Table 2. (please see Page 16, line 193)

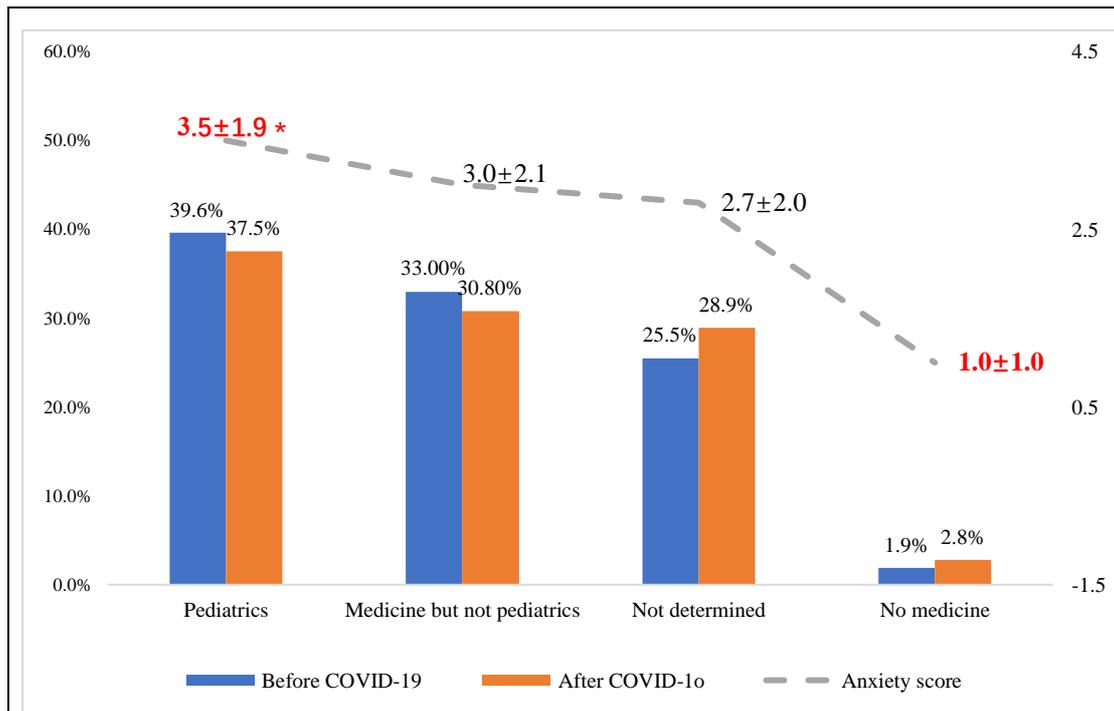


Figure 4. Anxiety scores in different career choice groups after COVID-19 outbreak. Blue and orange bars represent career choices before and after the outbreak of COVID-19. Grey dotted line represents the trend of average anxiety among different career choice groups after the outbreak. \* shows that students who planned to practice pediatrics had significantly higher average anxiety scores than those who did not plan to become doctors (P=0.034).

The topic of this paper is very interesting and valuable, but the manuscript is not acceptable right now. I sincerely hope the authors can reform the original manuscript as soon as possible.

Response: Thank you so much for your valuable suggestions. We appreciate your kindness sincerely.

