# PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (http://bmjopen.bmj.com/site/about/resources/checklist.pdf) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### **ARTICLE DETAILS**

TITLE (PROVISIONAL)	Sex Differences and Rehabilitation Needs after Hospital Discharge	
	for COVID-19: An Italian Cross-sectional Study.	
AUTHORS	Fugazzaro, Stefania; Denti, Monica; Mainini, Carlotta; Accogli, Monia; Bedogni, Ginevra; Ghizzoni, Daniele; Bertolini, Anna; Esseroukh, Otmen; Gualdi, Cecilia; Schiavi, Margherita; Braglia, Luca; Costi, Stefania	

# **VERSION 1 – REVIEW**

Playford , Diane	
University of Warwick, Warwick Medical School	
09-Sep-2021	
This is a clearly written account of the long term sequelae of Covid following hospital admission. I have two minor comments  1. The data presented in the tables is repeated in the text. I wonder if the text could be shortened  2. There are a number of other papers that describe long term follow up of Covid 19 and it may be useful to consider how consistent your findings are with these papers.	
Lemhoefer, Christina	
University of Jena, Institute pf Physiotherapy	
22-Oct-2021	

GENERAL COMMENTS	Thank you for submitting the manuscript. In the current version, it is not publishable from my point of view. It lacks current literature from 2021, which already addresses some of the aspects mentioned. In addition, sub-areas are insufficiently detailed. The graphical presentation is more exhausting than informative.
	The literature in the field of post and long COVID is growing daily. A new search for current literature should be conducted and supplemented accordingly. Most of the citations are from 2020.
	Introduction Page 4 Line 11 The number of infected persons should have a current status
	Page 4 Line 20 I agree with the author that initially rehabilitation needs were not looked at much. However, there are studies that have already considered corresponding questions in the first wave. This should be added to or discussed here.
	Page 4 Line 30- 34

There is current literature on this subject https://doi.org/10.1186/s12995-021-00337-9

#### Method

The selection of symptoms is not explained in detail. This should be done, especially Under the aspect that the post-COVID syndrome is very variable and individually different. This aspect should also be mentioned in the discussion (Weakness)

### Page 5, line 56

This has nothing to do with the current study. The sentence should be deleted.

#### Results

Figure 1

The numbers are not correct here.

Excluded total - > not eligible should be 407 instead of 395, so the total number is not correct.

Overall, the results section should be shortened significantly, Since all results are actually presented in tables. Duplication is not necessary

#### Page 10 Line 3 to 12

The term rehabilitation needs to be defined more precisely. Are we talking about physiotherapeutic treatments the hospital or special rehabilitative programs after the stay?

A distinction should also be made between patients requiring intensive care and those treated in a normal ward.

### Page 10 Line 7

Outpatient rehabilitation would mean an overall therapeutic program. Was this carried out or do you mean individual therapeutic services. The rehabilitation programs should be presented in a more specialist way. Pulmonary rehabilitation includes exercise. Mobilization can also be subsumed. This aspect must be presented much better.

#### Table 3

All abbreviations should be explained under table

#### Page 11 Table 4

Significant results should be highlighted to make it clearer. There is no reference to table 4 in the text. This should be added. In the column headings, "P-Value" is missing in column 1 ,and "CI" in the other columns.

#### Discussion

Page 13 Line 28

The citation is not shown correctly here

#### Page 13 Lines 45 f

The outpatient therapeutic care aspect is missing here. Which also counts as rehabilitative care. Outpatient therapeutic options can prevent long-term symptoms or help to alleviate them. There is already data on this, including patient satisfaction.

DOI: 10.1055/a-1528-1667

Page 13 Lines 55f

As described above, what is meant by "rehabilitation" needs to be defined more precisely here. Individual therapies? How often? How long? Rehabilitation programs after acute inpatient stay?

#### Page 14 Lines 3-10

That women are significantly more often affected by post-COVID is not a new phenomenon, contrary to what you have presented. This paragraph should be deleted or adjusted in the context of new literature on this topic.

### Page 14

Strengths and weaknesses. As described above, there is a clear lack of coverage of other symptoms. Muscle pain, movement limitations, and cognitive deficits may also lead to a need for rehabilitation. Response bias should also be discussed. It may be that those who were already asymptomatic did not consent in because they were not interested. Also, it may be that individuals did not consent who were too unwell.

#### Page 14 lines 25 to 31

This should be checked against current literature and slightly softened accordingly.

# Page 14 Lines 33 to 46

This paragraph does not provide any new insights and should be deleted

REVIEWER	O'Sullivan, Oliver	
	Defence Medical Rehabilitation Centre, Academic Department of	
	Military Rehabilitation	
REVIEW RETURNED	26-Oct-2021	

#### **GENERAL COMMENTS**

Many thanks for inviting me to review 'Sex Differences and Rehabilitation Needs after Hospital Discharge for COVID-19: An Italian Cross-sectional Study', your retrospective notes review and post discharge telephone consultation with 149 participants following their discharge from hospital with COVID-19, with an average age of 62, and 62% male population.

I must salute you on your prompt study design, ethical approval, recruitment and completion during the first wave of COVID-19, especially as it appeared much worse in Italy. However, given that all telephone calls were likely performed by October 2020, may I enquire what the delay in publishing this work was? I note it was submitted to BMJ Open in July 2021. This work would have been very valuable as soon as you had finished collecting the data, but now, I have seen several other, similar pieces, from Italy and elsewhere.

Having said that, I think your manuscript is clear and well written, with your results consistent with other work published and does add, as you say, to the canon of literature. I have, however, a few points which I feel were not adequately addressed in your discussion.

Firstly, can you be fully socially integrated during times of lockdown? Clearly, I am not aware of the situation in Italy between July-October 2020, but much of Europe was undergoing variable lockdowns and social restrictions – how might this have impacted the results? Secondly, you attribute any ongoing effects to COVID,

but how much of the long term problems could be due to the hospital spell, and especially post intensive care syndrome, which is only mentioned in passing. Finally, do you have any explanations for the gender differences?

Below are some points on editing/proofing.

I feel this manuscript should be accepted after minor changes, and I will suggest as such to the Editor.

With best wishes, and thank you, on behalf of your patients, for all your hard work,

Dr Oliver O'Sullivan

Please expand COVID-19 and ICF in your abstract.

### Background

Line 18 – please adjust the reference '(WHO 2021),2' to superscript.

Line 32 – I suspect you mean 'furthermore' I would be helpful to briefly outline what the ICF is for a non-rehabilitation public

### Study design and population

Line 7 – Please add LHA in parenthesis as you use it later Line 9-16 exclusion criteria could be summarised in a table This section appears very long, filling an entire page – please could you review it and reduce the length, perhaps through the use of tables or schematics

## **Participants**

Line 32 – were they 'recovered'?

Line 38 – why were pregnant women excluded?

Table 1 – why is household condition relevant? What does 'need a little help' mean? Please can you find an alternative phase.

Line 59 – didn't one participant require help with ADLs?

Table 2 – what does TOT mean?

Table 3 – can you make the (a) next to data Participation data missing superscript please? Was it always the same participant how failed to understand, in which case, why were they not excluded?

Table 4 – In the legend, it should be either statistically significant or statistical significance – please review.

## Discussion

Line 21 – earlier you use PASC, but here you use post-covid-19 syndrome. Please could you be consistent with the terminology, unless that was a deliberate choice, in which case, why? Line 28 – please adjust 12 to superscript.

# Meaning of study

Line 43 – I suspect you mean 'recovery'

#### References

Please can you check ref 22 and 26 - ensure they are correctly cited

### **VERSION 1 – AUTHOR RESPONSE**

Reviewer: 1

Dr. Diane Playford, University of Warwick

Comments to the Author:

This is a clearly written account of the long term sequelae of Covid following hospital admission. I

have two minor comments

Reviewer's comments	Authors' answers
The data presented in the tables is repeated in the text. I wonder if the text could be shortened	Thank you, the text has been shortened in several paragraphs
	Results/Participants
	Results/Descriptive data
2. There are a number of other papers	You are right; we have now discussed our results in
that describe long term follow up of	light of recent papers by different authors
Covid 19 and it may be useful to consider how consistent your findings are with these papers.	Discussion

Reviewer: 2

Dr. Christina Lemhoefer, University of Jena

Comments to the Author:

Thank you for submitting the manuscript. In the current version, it is not publishable from my point of view. It lacks current literature from 2021, which already addresses some of the aspects mentioned. In addition, sub-areas are insufficiently detailed. The graphical presentation is more exhausting than informative.

The literature in the field of post and long COVID is growing daily. A new search for current literature should be conducted and supplemented accordingly. Most of the citations are from 2020.

Text	Reviewer's comments	Authors' answers
more than 140.332.386 total confirmed cases worldwide as of April 18, 2021	Introduction Page 4 Line 11 The number of infected persons	The data have been updated
	should have a current status	Background
However, for the first months of the pandemic, the long-term impact of the disease remained underexplored	Page 4 Line 20 I agree with the author that initially rehabilitation needs were not looked at much. However, there are studies that have already considered corresponding questions in the first wave. This should be added to or discussed here.	The literature in this area is constantly growing, and in the Introduction we highlighted the symptoms of PASC. However, the rationale of the study was based on the assessment of the long-term effects of
		COVID-19 in agreement

		with the domains of the ICF. Therefore, we have added the study by Lemhofer et al. in the Background and have broadened the Discussion by comparing our results with those of other similar studies published in recent months  Background  Discussion
These symptoms can last several weeks after the acute phase of the disease6-12 and may impact an individual's functional status and quality of life. Further, in the presence of comorbidities, they may lead to deconditioning, fatigue, and social isolation.	Page 4 Line 30- 34 There is current literature on this subject <a href="https://doi.org/10.1186/s12995-021-00337-9">https://doi.org/10.1186/s12995-021-00337-9</a>	Thank you for this suggestion. This references has been included in the Background  Background
	Method The selection of symptoms is not explained in detail. This should be done, especially Under the aspect that the post-COVID syndrome is very variable and individually different. This aspect should also be mentioned in the discussion (Weakness)	We agree that among all the symptoms that can persist after COVID-19, we investigated only the most frequent of them. However, it would be not feasible to assess every type of possible long-lasting manifestation of COVID-19 through a telephone interview. Thus, we discussed this topic in the limitations of the study  Discussion/Strengths and weaknesses of the study
Furthermore, qualitative data were explored through open-ended questions on the patient's recovery from COVID-19. The reporting of these qualitative data is currently underway.	Page 5, line 56 This has nothing to do with the current study. The sentence should be deleted.	We have deleted it.  Methods/Study design and population
	Results Figure 1	The number of not eligible is correct, but Figure 1 could

	The numbers are not correct here.  Excluded total - > not eligible should be 407 instead of 395, so the total number is not correct.	lead to misinterpretation. We have changed it a little in order to facilitate its readability.  Figure 1
	Overall, the results section should be shortened significantly, Since all results are actually presented in tables. Duplication is not necessary	Thank you, the results have been shortened in several paragraphs  Results/Participants  Results/Descriptive data
Inpatient rehabilitation was delivered to 21 individuals, corresponding to 14.1% of the total sample and to 51.4% of participants admitted to the ICU. Similarly, outpatient rehabilitation after hospital discharge was attended by 21 individuals (14.1%), several of whom had been admitted to the ICU (40.0%). In most cases, rehabilitation programs included pulmonary rehabilitation, mobilization, counselling, and exercises	Page 10 Line 3 to 12 The term rehabilitation needs to be defined more precisely. Are we talking about physiotherapeutic treatments the hospital or special rehabilitative programs after the stay? A distinction should also be made between patients requiring intensive care and those treated in a normal ward	You are right, we have specified rehabilitation programs for ICU patients and other acute wards.  Results/Descriptive data
Inpatient rehabilitation was delivered to 21 individuals, corresponding to 14.1% of the total sample and to 51.4% of participants admitted to the ICU. Outpatient rehabilitation after hospital discharge was attended by 21 individuals (14.1%), several of whom had been admitted to the ICU (40.0%). In most cases, rehabilitation programs included pulmonary rehabilitation, mobilization, counselling, and exercises.	Page 10 Line 7 Outpatient rehabilitation would mean an overall therapeutic program. Was this carried out or do you mean individual therapeutic services. The rehabilitation programs should be presented in a more specialist way. Pulmonary rehabilitation includes exercise. Mobilization can also be subsumed. This aspect must be presented much better.	Thank you for your suggestion, we have added more details on outpatient rehabilitation.  Results/Descriptive data
	Table 3 All abbreviations should be explained under table	Thank you, we have added it  Table 4

	Page 11 Table 4 - Significant results should be	Thank you, we have done it.
	highlighted to make it clearer.	Table 4
	Page 11 Table 4  - There is no reference to table 4 in the text. This should be added.	Reference to Table 4 is on page 12
	Page 11 Table 4  - In the column headings, "P-Value" is missing in column 1 ,and "CI" in the other columns.	Thank you, we have corrected it.  Table 4
	Discussion Page 13 Line 28 The citation is not shown correctly here	Thank you, we have corrected it.  Discussion/Statement of principal findings
Social participation is one of the goals of rehabilitation interventions. However, during the first pandemic peak, rehabilitation was delivered to a limited number of COVID-19 patients and, in our cohort, inpatient rehabilitation was mainly provided to patients admitted to an ICU. This is reasonable, given that the long-term impact of COVID-19 was not known at the time, and directing all resources to the care of individuals struggling with severe or critical COVID-19 seemed appropriate, in the attempt to prevent the onset of post-intensive care syndromes, which affect up to 50% of ICU patients.	Page 13 Lines 45 f The outpatient therapeutic care aspect is missing here. Which also counts as rehabilitative care. Outpatient therapeutic options can prevent long-term symptoms or help to alleviate them. There is already data on this, including patient satisfaction. DOI: 10.1055/a-1528-1667	Thank you, we have included your suggestion in the discussion.  Discussion/Statement of principal findings
This may explain why our data do not show a significant association between rehabilitation interventions and any of the health outcomes assessed	Page 13 Lines 55f As described above, what is meant by "rehabilitation" needs to be defined more precisely here. Individual therapies? How often?	Thank you for your comment, we have specified this.  Discussion/Statement of principal findings

three months after hospital	How long? Rehabilitation programs	
discharge	after acute inpatient stay?	
alconargo	and addid inpution day.	
The most interesting finding of this study is that it seems that the long-term impact of COVID-19 is worse on women. Since the very first months of the pandemic, the need for sex-disaggregated data was advocated by researchers,32,33,34 and the role of sex in the early immune response after SARS-CoV-2 infection and in mortality has been highlighted.35,36 While mortality rate for COVID-19 seems higher in men with comorbidities,37 our results suggest that women may be more frail several weeks after hospital discharge	Page 14 Lines 3-10 That women are significantly more often affected by post-COVID is not a new phenomenon, contrary to what you have presented. This paragraph should be deleted or adjusted in the context of new literature on this topic.	Thank you, we have adjusted this in the context of new literature.  Discussion/Statement of principal findings
	Page 14 Strengths and weaknesses. As described above, there is a clear lack of coverage of other symptoms. Muscle pain, movement limitations, and cognitive deficits may also lead to a need for rehabilitation. Response bias should also be discussed. It may be that those who were already asymptomatic did not consent in because they were not interested. Also, it may be that individuals did not consent who were too unwell.	Thank you for this suggestion. We have discussed the lack of symptom coverage, and we have added some consideration to the sentence that already stated the risk of recruitment bias, which has been highlighted.  Discussion/Strengths and weaknesses
One strength of this study is that the ICF framework was used to guide data collection, and the assessment of health status extended beyond impairment. To our knowledge, this is the first study using this approach. Moreover, a valid assessment of outcomes allowed us to bring out differences between the sexes in post-COVID-19	Page 14 lines 25 to 31 This should be checked against current literature and slightly softened accordingly.	To date, also other studies (included in the Discussion) have extended assessment of health status beyond impairment. So, although not explicitly, they adopted an ICF approach. For that reason, we deleted the sentence that stated this was the first study using an ICF approach and softened the discussion regarding the sex differences

syndrome, and, although further exploration is required, these data suggest that female COVID-19 survivors may need specific follow-up.		Discussion/Strengths and weaknesses
A current and very lively debate concerns the sequelae of COVID-19 and the most appropriate definition for this syndrome.38,39,40 We believe that our data contribute to this debate, as they highlight that COVID-19 can also affect the social activities of recovered patients, putting their global health at risk. To our knowledge, this is the first research study highlighting sex differences in post-COVID-19 recover, differences which has been noticed in clinics.30 These apparent differences merit further investigation to identify specific rehabilitation needs and to ensure appropriate, tailored interventions.	Page 14 Lines 33 to 46 This paragraph does not provide any new insights and should be deleted	Thank you, we have deleted it  Discussion

### Reviewer: 3

Dr. Oliver O'Sullivan, Defence Medical Rehabilitation Centre, Headquarters Army Medical Directorate Comments to the Author:

Dear Ms Denti, and colleagues,

Many thanks for inviting me to review 'Sex Differences and Rehabilitation Needs after Hospital Discharge for COVID-19: An Italian Cross-sectional Study', your retrospective notes review and post discharge telephone consultation with 149 participants following their discharge from hospital with COVID-19, with an average age of 62, and 62% male population.

I must salute you on your prompt study design, ethical approval, recruitment and completion during

the first wave of COVID-19, especially as it appeared much worse in Italy. However, given that all telephone calls were likely performed by October 2020, may I enquire what the delay in publishing this work was? I note it was submitted to BMJ Open in July 2021. This work would have been very valuable as soon as you had finished collecting the data, but now, I have seen several other, similar pieces, from Italy and elsewhere.

Text	Reviewer's comments	Authors' answers
	Firstly, can you be fully socially integrated during times of lockdown? Clearly, I am not aware of the situation in Italy between July-October 2020, but much of Europe was undergoing variable lockdowns and social restrictions – how might this have impacted the results?	From July up to Oct 2020 some minor restrictions were still in place, but considering that the spread of the virus was very very low (probably due to the climate) those restrictions per se could not hinder social participation. However, it could be that some individuals were still frightened by the pandemic and limited their participation to social activities for that reason. We discussed this possibility in the text  Discussion/Statement of principal findings
	Secondly, you attribute any ongoing effects to COVID, but how much of the long term problems could be due to the hospital spell, and especially post intensive care syndrome, which is only mentioned in passing.	You are perfectly right, we cannot rule out a role of hospitalization or post ICU syndrome and have now discussed this in the text.  Discussion/Strengths and weaknesses of the study
	Finally, do you have any explanations for the gender differences?	It has been hypothesized that viral-induced autoimmunity is a potential immunopathological mechanism underlying PACS and the higher representation of women in autoimmune diseases may explain the sex differences in PASC. We have included this hypothesis in the text, with the appropriate references.  Discussion/Statement of principal findings

Having said that, I think your manuscript is clear and well written, with your results consistent with other work published and does add, as you say, to the canon of literature. I have, however, a few points which I feel were not adequately addressed in your discussion.

Below are some points on editing/proofing.

I feel this manuscript should be accepted after minor changes, and I will suggest as such to the Editor.

With best wishes, and thank you, on behalf of your patients, for all your hard work,

### Dr Oliver O'Sullivan

Text	Reviewer's comments	Authors' answers
	Please expand COVID-19 and ICF in your abstract.	Thank you, we have added it.  Abstract
	Background Line 18 – please adjust the reference '(WHO 2021),2' to superscript.	Thank you, we have corrected it.  Background
	Line 32 – I suspect you mean 'furthermore'	Thank you, we have corrected it.  Background
	I would be helpful to briefly outline what the ICF is for a non-rehabilitation public	We have added a sentence in the Background.  Background
	Study design and population Line 7 – Please add LHA in parenthesis as you use it later	Thank you, we have added it.  Methods/Study design and population
	Line 9-16 exclusion criteria could be summarised in a table	We summarized exclusion criteria in a list, as the manuscript already consists of 4 tables  Methods/Study design and population
	This section appears very long, filling an entire page – please could you review it and	We have summarized exclusion criteria, and both

	reduce the length, perhaps through the use of tables or schematics	data collected retrospectively and prospectively in lists  Methods/Study design and population
Between April and June 2020, 784 patients were discharged from the hospitals of the LHA of Reggio Emilia (Italy), which serves a population of 533 158 residents, after having recovered from COVID-19.	Participants Line 32 – were they 'recovered'?	They were healed form the acute phase of COVID-19, we have specified this in the text  *Results/Participants**
	Line 38 – why were pregnant women excluded?	As pregnancy could affect symptoms that are characteristic of COVID-19, such as fatigue or dyspnea. So, in the manuscript we clarified that "We also excluded pregnant women, to avoid a confounding effect of pregnancy on symptoms like fatigue or dyspnea."  Methods/Study design and population
	Table 1 – why is household condition relevant?	Household condition is always collected in rehabilitation because it can affect participation in activities and adherence to prescriptions (exercise or similar). Therefore, this information has been collected to better describe the population.
	What does 'need a little help' mean? Please can you find an alternative phase.	It is the minimal assistance in BADL required as per the Barthel Index.  We have changed this definition in the text

	Table 1
Line 59 – didn't one participant require help with ADLs?	Yes, you are right, we specified this in the text (all but one participant)
	Results/Descriptive data
Table 2 – what does TOT mean?	Total, we have written it out
	Table 2
Table 3 – can you make the (a) next to data Participation data missing superscript please? Was it always the same participant how failed to understand, in which case, why were they not excluded?	We added the letter superscript to facilitate the readability of the table. We did not exclude the participants who failed to understand questions over the phone as they provided consent to participate in the study. Even if we would exclude the participant who could not understand, there was another also another participant that could answer part of the questions. As a result, we cannot simplify the table.
Table 4. In the larger of it about the either	Table 3
Table 4 – In the legend, it should be either statistically significant or statistical significance – please review.	Thank you, we have changed it to statistically significant  Table 4
Discussion Line 21 – earlier you use PASC, but here you use post-covid-19 syndrome. Please could you be consistent with the terminology, unless that was a deliberate choice, in which case, why?	Thank you, we have replaced it with PASC  Discussion/Statement of principal findings
Line 28 – please adjust 12 to superscript.	Thank you, we have corrected it.  Discussion/Statement of
Meaning of study Line 43 – I suspect you mean 'recovery'	Thank you, you were right, but in light of the suggestion received by reviewer 2 the paragraph has been deleted.

References	Thank you, we checked both of
Please can you check ref 22 and 26 - ensure	them amended as they appear
they are correctly cited	in MEDLINE
	References

# **VERSION 2 – REVIEW**

REVIEWER	Lemhoefer, Christina
	University of Jena, Institute pf Physiotherapy
REVIEW RETURNED	25-Jan-2022
GENERAL COMMENTS	Dear authors, thank you for submitting the revision. Apart from the fact that the data seems a bit outdated in this dynamic time, I have no further comments.
REVIEWER	O'Sullivan, Oliver Defence Medical Rehabilitation Centre, Academic Department of Military Rehabilitation
REVIEW RETURNED	02-Feb-2022
GENERAL COMMENTS	Thank you for inviting me to review an amended version of the manuscript 'sex differences and rehabilitation needs after hospital discharge for covid-19: an Italian cross-sectional study', your study of 149 participants recovering from COVID-19 in Italy, at approx. 3 months, using telephone follow up against the ICF domains.
	I appreciate your detailed feedback to myself and the two other peer reviewers who reviewed the first version of your manuscript submitted to BMJ Open. I feel content that you have adequately addressed all our concerns and queries from that review process.
	I have some minor points on editing as below, but otherwise, I will suggest to the editors that they accept this once they are completed.
	Good luck with the ongoing care of your patients, and yourselves, as we enter the third year of this pandemic.
	All the best
	Dr Oliver O'Sullivan
	Abstract Clear and well laid out.
	Ethics Appropriate ethical approval
	Background Pg 6, Line 13 – please write SARS-COV-2 and WHO out in full on their first use Pg 6, Line 17 – please remove (WHO 2021) as you are using superscript referencing

Study design

Pg 7, line 3 – please write out STROBE in full

# Statistical analysis

Pg 8, Line 19 - please write IQR in full on its first use

# Descriptive data

Pg 11, line 21 – please write out PEP in full on its first use

### Discussion

Pg 15, line 26 – is it long term or medium term?

Pg 15, line 31 – you can use ADL instead of activities of daily living as you have previously introduced this

# Strengths and weaknesses

Pg 17, line 42 – please choose PASC or post-COVID-19 syndrome and stick with throughout

# Conclusions

Pg 18, line 6 – as above, please be consistent with PASC or post-COVID-19 syndrome

# **VERSION 2 – AUTHOR RESPONSE**

Background Pg 6, Line 13 – please write SARS-COV-2 and WHO out in full on their first use	We have written it in full.
Background	
Pg 6, Line 17 – please remove (WHO 2021) as you are using superscript referencing	We have corrected it.
Study design	
Pg 7, line 3 – please write out STROBE in full	
Statistical analysis Pg 8, Line 19 – please write IQR in full on its first use	Thank you, we have written them in full.
Descriptive data	
Pg 11, line 21 – please write out PEP in full on its first use	
Discussion Pg 15, line 26 – is it long term or medium term?	
T g 10, line 20 to it long term of medium term.	It is medium term, we have corrected it, thank you.
Discussion	
Pg 15, line 31 – you can use ADL instead of activities of daily living as you have previously introduced this	Thank you, we have corrected in ADL.
Strengths and weaknesses	Thank you, we chose PASC and corrected it
Pg 17, line 42 – please choose PASC or post-	throughout the text.
COVID-19 syndrome and stick with throughout	
Conclusions	Thank you, we have changed in PASC.
Pg 18, line 6 – as above, please be consistent	
with PASC or post-COVID-19 syndrome	