PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Chinesization, adaptation and validation of the Chelsea Critical Care Physical Assessment Tool in critically ill patients: A cross-sectional observational study
AUTHORS	Zhang, Zhigang; Wang, Guoqiang; Guo, Jin; WU, yuchen; Ding, Nannan; wei, huaping; Jiang, Biantong; Li, Bin; Yue, weigang; Tian, Jinhui

VERSION 1 – REVIEW

REVIEWER	Wang, Gang Xi'an Jiaotong University, China
REVIEW RETURNED	03-Nov-2020

GENERAL COMMENTS	In the present manuscript, researchers translated the Chelsea Critical Care Physical Assessment Tool in to a Chinese version (CPAx-Chi), and evaluated its ability to diagnose ICU-acquired weakness (ICU-AW) with 200 intensive care patients. Here's my questions about the work: 1. The authors have mentioned that there is no "gold standard" for ICU-AW. And the existing scale for ICU-AW, the Medical Research Council Muscle Score (MRC-Score), cannot evaluate patients' respiratory problem, which is frequently encountered in ICU. Therefore, the CPAx-Chi was expected to be a better tool for critically ill patients, because it includes the assessment of respiratory function and cough ability. However, the authors still took MRC-Score ≤48 as the criterion for the diagnosis of ICU-AW. Would patient's respiratory function affect the best cut-off point, sensitivity or specificity of CPAx-Chi? Would the performance of CPAx-Chi vary in patients with different age, disease or APACHE score? 2. Before translated into Chinese, CPAx has been translated into several languages for use in the UK, Sweden, Denmark and other countries. So please discuss the performance of CPAx in previous studies. Are there any differences in the cut-off point, sensitivity or specificity when the CPAx was conducted in other countries with different patients? 3. The author found a Kendall Synergy Coefficient of 0.061 (p = 0.842), which actually indicated a low level of agreement between the experts. Therefore, I suggest the authors to check the statistical results.

REVIEWER	Kellie Sosnowski Intensive Care Unit, Logan Hospital,

	Queensland, Australia.
REVIEW RETURNED	08-Nov-2020

GENERAL COMMENTS	Thank you for the opportunity to review this manuscript. The topic is interesting and the methodology to test the reliability and validity of the Chinese version of the Chelsea Critical Care Physical Assessment tool (CPAX-Chi) is well-designed. The development of this tool can potentially improve the assessment and prevention of Intensive Care Unit Associated Weakness in the ICU (ICU-AW) with relevance in the Chinese health-care setting. Parts of the manuscript need to be improved; I have made suggestions below. While the standard of English in the manuscript is mostly good, language and flow throughout the manuscript need to be improved, and the manuscript requires proofreading and editing. Fit with the scope of the journal: The manuscript seems to be a good fit for the journal in an area of research that has important consequences for critically ill patients. Research Question: The aim and purpose of the study could be stated more definitively in the abstract Page 1, Line 28 -33 (i.e., 'To translate and adapt the ….') and within the Introduction Page 3, Line 5 -9 (i.e.,'The aim of this study is to…….'). Abstract: The abstract provides an accurate summary of the manuscript. The method section of the abstract (page 1, Line 36-43) could mention all phases of the project (i.e., back and forward translation, cross-cultural adaptation, pre-testing and observational study). Eligibility criteria for participants should be stated. As per Stard for abstract guidelines, please state whether participants formed a consecutive or convenience series. The final line on page 1, Line 60: the word 'also' should be removed as it infers the test was an afterthought when in fact, the reliability test was a major part of the project. Page 1, line 60- state 'Cohen's kappa' rather than kappa. Within the conclusion, Page 2, Line 5-8: perhaps another word could replace 'had good', I suggest using 'demonstrated'. Introduction: Page 2, Line 38: I am not confident that the statement 'ICU-AW in sepsis patients is 100%' is accurate, nor reflects the information within the cited references. Page 2, Line 44 – Please re-write the sentence 'A gold standard for ICU-AW is not available'. If you are referring to a diagnostic tool, then that should be written within the sentence, i.e., A gold standard for the diagnosis for ICU-AW is not available. Page 2, Line 45 – 46: The authors have stated 'The Medical Research Council Muscle Score (MRC – score) is the most widely used diagnostic tool for ICU-AW'. However, the MRC – muscle score is reported in the cited reference as used in the majority of studies reporting strength. Other tests are also frequently used to test for ICU – AW. I suggest re-writing the sentence. Page 2 Line, 56: I would suggest stating "The CPAx could be 'an' optimal tool rather than 'the' optimal tool. Page 2, Line 58 – 60: I would suggest changing the word 'includes' to 'measure' or 'assess', i.e., CPAx can be used to measure physical function, mobility, grip strength, respiratory function, and cough ability. Study Design: The study design is appropriate to answer the research question. The methods section (Page 3) would benefit from an introductory sentence to the different stages of the project.

	Methods: The methods are mostly described sufficiently. Section 2.1, Page 3, Line 16: As there were several authors, E.J. Corner should be stated as the 'primary original' author rather than the 'original' author. I suggest a description is included regarding what E.J. Corner is associated with – i.e., a proof-of-concept pilot study of the CPAx. A reference to the study should be included. Page 3, Line 19: I suggest using the following reference when referring to the Brislin model: • Brislin, R. W. (1970). Back-translation for cross-cultural research. Journal of Cross-cultural Psychology, 1 (3), 187–16. • Brislin, R. W. (1986). The wording and translation of research instruments. In W. L. Lonner & J. W. Berry (Eds.) Field methods in cross-cultural research (pp.137–164). Newbury Park, CA: Sage. Section 2.2 Page 3, Line 26-28: Please explain the term 'graduate student of nursing'. I am wondering why a student nurse would be unfamiliar with clinical medicine. Page 3, Line 28 - 32: Please clarify the attendees of the seminar mentioned and Line 31: the group who provided consultation. Section 2.3 Page 3, Line 43 and line 49: Please provide a reference following '… the original CPAx'. Line 43 - 44: Please provide detail of who the discrepancies were discussed with. Section 2.4 Page 4, Line 5: Please provide a reference following 'the original author'. Section 2.5 Page 4, Line10 - Did the ICU nurses perform the assessments - how did they test grip strength? Page 4, Line 11- Clarification regarding the dichotomous method used to assess the CPAx-Chi-Forward is required. Page 4, Line 14: 'suggestions could be made' requires clarification. Page 4, Line 15 – 16: How do you know the CPAx-Chi-Forward had good cross-cultural adaptation – please clarify what 'good' means. Page 4, Line 17: The section on demographics (line 16-19) implies two groups within the 40 nurses as it discusses 'no significant differences.' Page 4, Line 20: I suggest changing the word 'created' to 'accepted'. Section 2.6.1 Page 4, Line 27: Please explain the term 'recruited pragmatically'. Page 4, Line 29: Please clarify the difference between critically ill and seriously ill – if this relates to ventilation status, it might be better to state 'ventilation status'. Page 4, Line 32: Please clarify how participants volunteered to participate in the study, i.e., how were they recruited. Page 4, Line 34-36: Please explain the reason for your exclusion criteria. If it is because the patient would not be able to participate in the assessments, that should be stated. Section 2.6.2 Page 4, Line 39-45: Sample size calculation is not clear and should be re-written. I am not familiar with 'scale construction' in sample size calculations. Page 4, Line 38: Please provide a reference against 'scale construction'. Page 4, Line 40-41: The term 'accidents' should be removed from the sentence – I suggest changing the sentence to 'Taking into account loss to follow up and participant attrition…' Section 2.6.3 Study design should be moved to 2.6.1 and Participants changed to 2.6.2. Line 51 - An explanation is required of why the MRC- score is being used as the comparator. Page 4, Line 49 and 50 – If the mentioned 'two investigators' are Researcher A and Researcher B (referred to in the abstract and in 3.2.2) then this should be explicitly stated. Section 2.6.4 Ethical approval: The section related to ethical approval Page 4 and 10 should be revised and rewritten. The reason stated for not gaining informed consent (Page 4, Line 57 -59) is potentially unethical. If the tests are congruent with standard

	practice, then this should be stated as the reason informed consent was deemed unnecessary. Section 2.7 Statistical Analysis: As I am not a statistician, I cannot comment on the statistical methods, their appropriateness or reproducibility. 3. Results 3.1 Characteristics of participants: Page 5, Line 37: Please clarify what is meant by 'two patients recovered'. A table to describe the participant characteristics is recommended. 3.2 Validity: 3.2.1 Page 5 Line 44: Please clarify if the nine specialists are the same as the nine experts mentioned on page 3, Line 51. Further information is required regarding the discipline of the experts. Page 5- Line 46 Please clarify the applicability of items, i.e. '… applicability of items in the CPAX-Chi'. 3.3 Reliability: Page 6, Line 16: I would suggest using the word 'acceptable' instead of the word 'good'. 3.5 MRC score and CPAX-Chi: Page 6, Line 48: I suggest replacing the word 'took' with the word 'calculated'. Page 6, Line 56: I suggest replacing the word 'taking' with the word 'accepting'. 4. Discussion Sentence structure, language and grammar throughout the discussion requires correction and editing. 4.1 Translation: Page 7, Line 12: I would suggest removing the words 'not only' and replacing with 'Our study was strengthened by including a multidisciplinary team…. and included two Chinese nurses ….'. Line 17: 'native speakers of Chinese' could potentially be removed. Line 17: I would suggest removing the words "In addition" from the paragraph. 4.2 Validity: Page 7, Line 27 – 30: I would suggest restructuring the sentence. Please clarify 'scale compilation'. Page 8, Line 12-13; 39; Page 9, Line 17-18: Please reconsider using the word 'good' when referring to reliability, validity and cut-off points. As the results have already been discussed in the result section, I suggest the authors limit referring to their measured results and instead discuss the implications of the translation, validity, reliability and cut-off point using the CPAX-Chi in clinical practice. The section in the conclusion Page 9, Line 39 - 44 should be moved to the discussion section. Conclusion: Page 9, Line 34: I would suggest replacing the word 'showed' with 'have demonstrated'. Page 9, Line 35: I suggest changing the word 'good' with 'high'. Page 9, Line 42 – 43: The limitations should be moved to the discussion section of the paper. Figure 1: There are some grammatical errors within the diagram that require correction including the title of the figure. Conclusion: Overall, I think this research is interesting, and CPAX-Chi is important and valuable. I hope my suggestions were helpful. Kind regards

REVIEWER	R. David Hayward, PhD Ascension Saint John Hospital Detroit, Michigan USA

REVIEW RETURNED	30-Nov-2020

GENERAL COMMENTS	This paper reports on the translation and validation of a Chinese language version of the Chelsea Critical Care Physical Assessment Tool (CPAx). Strengths of the study include a well-designed methodological approach and good representation from appropriate mulit-lingual experts in the field. I have a few comments which I hope will serve to help improve the manuscript further. 1. It is surprising not to see a copy of the CPAx-Chi itself included in an appendix or as a supplemental file. If this is not possible, then there should be an external link to the instrument, or a statement indicating how a copy can be obtained. 2. Please include a citation for the sample size justification of 200 patients. 3. The content validation methods are not really explained until the discussion section. I think it would be useful to cite and briefly summarize the methods and purpose of the I-CVI, S-CVI, expert authority coefficient, and synergy coefficient at least briefly in the methods section. 4. The rationale for the exclusion criteria should be briefly explained. 5. It may be noteworthy that part of the data collection period included months in the first half of 2020 in which the composition of the hospitalized population -- and ICU patients in particular -- may have been impacted by the COVID-19 pandemic. It may be useful to mention briefly in the discussion the extent to which the patient population included here was (or was not) affected, and whether this has any potential implications for the interpretation of the results.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Comments to the Author
In the present manuscript, researchers translated the Chelsea Critical Care Physical Assessment Tool in to a Chinese version (CPAx-Chi), and evaluated its ability to diagnose ICU-acquired weakness (ICU-AW) with 200 intensive care patients. Here's my questions about the work:

1. The authors have mentioned that there is no "gold standard" for ICU-AW. And the existing scale for ICU-AW, the Medical Research Council Muscle Score (MRC-Score), cannot evaluate patients' respiratory problem, which is frequently encountered in ICU. Therefore, the CPAx-Chi was expected to be a better tool for critically ill patients, because it includes the assessment of respiratory function and cough ability. However, the authors still took MRC-Score ≤48 as the criterion for the diagnosis of ICU-AW. Would patient's respiratory function affect the best cut-off point, sensitivity or specificity of CPAx-Chi? Would the performance of CPAx-Chi vary in patients with different age, disease or APACHE score?
A: thanks for your guidance: We discussed the problem cautiously that to choose whether or not taking the MRC-Score as the criterion for the diagnosis of ICU-AW
Firstly: there is no "gold standard" for ICU-AW, but the MRC-Score≤48 was the most widely used "standard" for ICU-AW. Therefore, We took MRC-Score ≤48 as the criterion for the diagnosis of ICU-AW, and this is also the primary limitation of the study.

Secondly: This study is a cross-sectional observational study and preliminary study on the cutoff point of CPAx scale, and the cutoff point of CPAx to diagnostic ICU-AW was determined by the total score of CPAx scale, rather than the cutoff point of single items.
Thirdly: we are studying the performance of CPAx-Chi vary in patients with different age, disease, APACHE score or different stages(just like admission in ICU, Mechanical ventilation 24-48h, Before and after weaning, discharge). We also taking the massive inspiratory pressure(MIP), MRC-Score, electromyography and neuromuscular ultrasound as the criterion for the diagnosis of ICU-AW in our current study, and the result will present in our future study.

2. Before translated into Chinese, CPAx has been translated into several languages for use in the UK, Sweden, Denmark and other countries. So please discuss the performance of CPAx in previous studies. Are there any differences in the cut-off point, sensitivity or specificity when the CPAx was conducted in other countries with different patients?
A: thanks for your guidance: this is the first study to investigate the best cutoff point for the diagnosis of ICU-AW using CPAx-Chi. CPAx had been translated into several languages for use in Sweden, Denmark, and other countries. These papers only study the cross-cultural adaptation, reliability and validity of CPAx-English, CPAx-Swe and CPAx-Danish, excepted the cutoff point for the diagnosis of ICU-AW using CPAx-English, CPAx-Swe, and CPAx-Danish.

3. The author found a Kendall Synergy Coefficient of 0.061 (p = 0.842), which actually indicated a low level of agreement between the experts. Therefore, I suggest the authors to check the statistical results.
A: Thank you very much for noticing my carelessness, and the Kendall Synergy Coefficient was 0. 61(p = 0.842), instead of 0.061, and we had revised in the paper.

Reviewer: 2

Comments to the Author
Thank you for the opportunity to review this manuscript. The topic is interesting and the methodology to test the reliability and validity of the Chinese version of the Chelsea Critical Care Physical Assessment tool (CPAX-Chi) is well-designed. The development of this tool can potentially improve the assessment and prevention of Intensive Care Unit Associated Weakness in the ICU (ICU-AW) with relevance in the Chinese health-care setting.
Parts of the manuscript need to be improved; I have made suggestions below. While the standard of English in the manuscript is mostly good, language and flow throughout the manuscript need to be improved, and the manuscript requires proofreading and editing.

Fit with the scope of the journal: The manuscript seems to be a good fit for the journal in an area of research that has important consequences for critically ill patients.

Research Question: The aim and purpose of the study could be stated more definitively in the abstract Page 1, Line 28 -33 (i.e., 'To translate and adapt the ….') and within the Introduction Page 3, Line 5 -9 (i.e.,'The aim of this study is to…….').
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

Abstract: The abstract provides an accurate summary of the manuscript. The method section of the abstract (page 1, Line 36-43) could mention all phases of the project (i.e., back and forward translation, cross-cultural adaptation, pre-testing and observational study). Eligibility criteria for participants should be stated. As per Stard for abstract guidelines, please state whether participants formed a consecutive or convenience series. The final line on page 1, Line 60: the word 'also' should be removed as it infers the test was an afterthought when in fact, the reliability test was a major part

of the project. Page 1, line 60- state ‘Cohen's kappa’ rather than kappa. Within the conclusion, Page 2, Line 5-8: perhaps another word could replace ‘had good’, I suggest using ‘demonstrated’.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

Introduction: Page 2, Line 38: I am not confident that the statement ‘ICU-AW in sepsis patients is 100%’ is accurate, nor reflects the information within the cited references.
Page 2, Line 44 – Please re-write the sentence ‘A gold standard for ICU-AW is not available’. If you are referring to a diagnostic tool, then that should be written within the sentence, i.e., A gold standard for the diagnosis for ICU-AW is not available. Page 2, Line 45 – 46: The authors have stated ‘The Medical Research Council Muscle Score (MRC – score) is the most widely used diagnostic tool for ICU-AW’. However, the MRC – muscle score is reported in the cited reference as used in the majority of studies reporting strength. Other tests are also frequently used to test for ICU – AW. I suggest re-writing the sentence. Page 2 Line, 56: I would suggest stating “The CPAx could be ‘an’ optimal tool rather than ‘the’ optimal tool. Page 2, Line 58 – 60: I would suggest changing the word ‘includes’ to ‘measure’ or ‘assess’, i.e., CPAx can be used to measure physical function, mobility, grip strength, respiratory function, and cough ability.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

Study Design: The study design is appropriate to answer the research question. The methods section (Page 3) would benefit from an introductory sentence to the different stages of the project.

Methods: The methods are mostly described sufficiently.
Section 2.1, Page 3, Line 16: As there were several authors, E.J. Corner should be stated as the ‘primary original’ author rather than the ‘original’ author. I suggest a description is included regarding what E.J. Corner is associated with – i.e., a proof-of-concept pilot study of the CPAx. A reference to the study should be included. Page 3, Line 19: I suggest using the following reference when referring to the Brislin model:
• Brislin RW. Back-translation for cross-cultural research[J]. Journal of Cross-cultural Psychology,1970,1 (3), 187–16. DOI: 10.1177/135910457000100301
• Brislin, R. W. (1986). The wording and translation of research instruments. In W. L. Lonner & J. W. Berry (Eds.) Field methods in cross-cultural research (pp.137–164). Newbury Park, CA: Sage.
A: Thank you very much for your suggestion:
We had retrieved the first reference and we did not found the other two references, so we referenced others. Hopefully our references will work.

Section 2.2 Page 3, Line 26-28: Please explain the term ‘graduate student of nursing’. I am wondering why a student nurse would be unfamiliar with clinical medicine. Page 3, Line 28 - 32: Please clarify the attendees of the seminar mentioned and Line 31: the group who provided consultation.
A: Thank you very much for your questions: “unfamiliar” means that the student has medical/nursing knowledge but no experience in clinical nursing. That can help us find out the problem of translation and ensure the translation version readily comprehensible

Section 2.3 Page 3, Line 43 and line 49: Please provide a reference following ‘… the original CPAx’. Line 43 - 44: Please provide detail of who the discrepancies were discussed with.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

Section 2.4 Page 4, Line 5: Please provide a reference following ‘the original author’.

A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

Section 2.5 Page 4, Line10 - Did the ICU nurses perform the assessments - how did they test grip strength?
A: Thank you very much for your question: a manual dynamometer was used to assess grip strength (WCS-100), we had revised in the manuscript.

Page 4, Line 11- Clarification regarding the dichotomous method used to assess the CPAx-Chi-Forward is required.
A: Thank you very much for your question and forgive me for not being clear. We had revised in the manuscript and took an example as the follow

Level	Strongly disagree			Disagree		Not sure	agree	I couldn't agree more
Score	1	2	3	4	5			
Readily comprehensible						√		
Well described						√		
Conform to Chinese grammatical								√
Suggestions								

Page 4, Line 14: ‘suggestions could be made’ requires clarification.
A: Thank you very much for your question: ‘suggestions could be made’ means if you have any suggestions, please fill in the remarks column. Based on your question, we had revised“suggestions could be made” as“suggestions could be noted ”. Is that OK?

Page 4, Line 15 – 16: How do you know the CPAx-Chi-Forward had good cross-cultural adaptation – please clarify what ‘good’ means.
Page 4, Line 17: The section on demographics (line 16-19) implies two groups within the 40 nurses as it discusses ‘no significant differences.’
Page 4, Line 20: I suggest changing the word ‘created’ to ‘accepted’.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and had supplemented the statistical table in the manuscript.

Section 2.6.1 Page 4, Line 27: Please explain the term ‘recruited pragmatically’. Page 4, Line 29: Please clarify the difference between critically ill and seriously ill – if this relates to ventilation status, it might be better to state ‘ventilation status’. Page 4, Line 32: Please clarify how participants volunteered to participate in the study, i.e., how were they recruited. Page 4, Line 34-36: Please explain the reason for your exclusion criteria. If it is because the patient would not be able to participate in the assessments, that should be stated.
A: Thank you very much for your suggestion:
What we meant was that adult critically ill patients were recruited from the general ICU of five third-grade class-A hospitals in western China from September 2019 to June 2020 according to the recruited program(recruited program means inclusion and exclusion) . We had expurgated the pragmatically.

Critically ill and seriously ill patients are the same patients, and we had revised it as critically ill patients.

We had added that how to recruit participants in the manuscripts and marked in red.

exclusion criteria: We took MRC-Score ≤48 as the criterion for the diagnosis of ICU-AW in our study, and participants with unstable fracture, limb deformity and limb dysfunction would not be able to participate in the assessments. There are differences in the definition and diagnostic criteria of ICU-AW, myasthenia gravis, neuromuscular dysfunction, critical illness myopathy.

Section 2.6.2 Page 4, Line 39-45: Sample size calculation is not clear and should be re-written. I am not familiar with 'scale construction' in sample size calculations. Page 4, Line 38: Please provide a reference against 'scale construction'. Page 4, Line 40-41: The term 'accidents' should be removed from the sentence – I suggest changing the sentence to 'Taking into account loss to follow up and participant attrition…'
A: Thank you very much for your suggestion:
Sample size calculation had re-written in the manuscript and remarked in red.
We had revised "Line 40-41" according to your suggestion and marked in red.

Section 2.6.3 Study design should be moved to 2.6.1 and Participants changed to 2.6.2. Line 51 - An explanation is required of why the MRC- score is being used as the comparator. Page 4, Line 49 and 50 – If the mentioned 'two investigators' are Researcher A and Researcher B (referred to in the abstract and in 3.2.2) then this should be explicitly stated.
A: Thank you very much for your suggestion:
We had specifically introduced that why we took the MRC- score as the comparator/ criterion in the part of introduction, and we also revised it according to your suggestion and marked in red.
We had revised it according to your suggestion and marked in red.

Section 2.6.4 Ethical approval: The section related to ethical approval Page 4 and 10 should be revised and rewritten. The reason stated for not gaining informed consent (Page 4, Line 57 -59) is potentially unethical. If the tests are congruent with standard practice, then this should be stated as the reason informed consent was deemed unnecessary.
A: Thank you very much for your suggestion: We did not clearly described ethical approval. In the pre-testing study, we found that there were significantly differences between informed consent patients and the no informed consent patient, especially in the items just like respiratory function, grip strength and transferring from bed to a chair. In order to avoid bias caused by informed consent to the study results, it was decided by group discussion that the assessment of patients should be conducted on a daily basis without informed consent.

Section 2.7 Statistical Analysis: As I am not a statistician, I cannot comment on the statistical methods, their appropriateness or reproducibility.

3. Results
3.1 Characteristics of participants: Page 5, Line 37: Please clarify what is meant by 'two patients recovered'. A table to describe the participant characteristics is recommended.
A: Thank you very much for your suggestion: We had revised the "two patients recovered" as "two patients were discharged from ICU".

3.2 Validity: 3.2.1 Page 5 Line 44: Please clarify if the nine specialists are the same as the nine experts mentioned on page 3, Line 51. Further information is required regarding the discipline of the experts. Page 5- Line 46 Please clarify the applicability of items, i.e. '… applicability of items in the CPAX-Chi'.
A: Thank you very much for your suggestion: the nine specialists on the Page 5 Line 44 are the same as the nine specialists on the page 3 Line 51.
We had revised it according to your suggestion and marked in red.

3.3 Reliability: Page 6, Line 16: I would suggest using the word ‘acceptable’ instead of the word ‘good’.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

3.5 MRC score and CPAX-Chi: Page 6, Line 48: I suggest replacing the word ‘took’ with the word ‘calculated’. Page 6, Line 56: I suggest replacing the word ‘taking’ with the word ‘accepting’.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

4. Discussion
Sentence structure, language and grammar throughout the discussion requires correction and editing.
4.1 Translation: Page 7, Line 12: I would suggest removing the words ‘not only’ and replacing with ‘Our study was strengthened by including a multidisciplinary team…. and included two Chinese nurses ….’. Line 17: ‘native speakers of Chinese’ could potentially be removed. Line 17: I would suggest removing the words “In addition” from the paragraph.
A: Thank you very much for your suggestion: We had revised it according to your suggestion and marked in red.

4.2 Validity: Page 7, Line 27 – 30: I would suggest restructuring the sentence. Please clarify ‘scale compilation’. Page 8, Line 12-13; 39; Page 9, Line 17-18: Please reconsider using the word ‘good’ when referring to reliability, validity and cut-off points.
As the results have already been discussed in the result section, I suggest the authors limit referring to their measured results and instead discuss the implications of the translation, validity, reliability and cut-off point using the CPAX-Chi in clinical practice. The section in the conclusion Page 9, Line 39 - 44 should be moved to the discussion section.
A: Thank you very much for your suggestion: “scale compilation”had been revised as scale development

Conclusion:
Page 9, Line 34: I would suggest replacing the word ‘showed’ with ‘have demonstrated’.
A: Thank you very much: We had revised as your suggestion!

Page 9, Line 35: I suggest changing the word ‘good’ with ‘high’.
A: Thank you very much: We had revised as your suggestion!

Page 9, Line 42 – 43: The limitations should be moved to the discussion section of the paper.
A: Thank you very much: We had revised as your suggestion!

Figure 1: There are some grammatical errors within the diagram that require correction including the title of the figure.
A: Thank you very much: We had revised as your suggestion!

Conclusion:
Overall, I think this research is interesting, and CPAX-Chi is important and valuable. I hope my suggestions were helpful.
Kind regards

Reviewer: 3

Comments to the Author
This paper reports on the translation and validation of a Chinese language version of the Chelsea Critical Care Physical Assessment Tool (CPAx). Strengths of the study include a well-designed methodological approach and good representation from appropriate mulit-lingual experts in the field. I have a few comments which I hope will serve to help improve the manuscript further.

1. It is surprising not to see a copy of the CPAx-Chi itself included in an appendix or as a supplemental file. If this is not possible, then there should be an external link to the instrument, or a statement indicating how a copy can be obtained.
A: thanks for your guidance: we had revised the supplementary file

2. Please include a citation for the sample size justification of 200 patients.
Comrey AL (1988)：the smaller the sample size, the more the correlations being analyzed are subject to the effects of outliers and of random sampling variations and, hence, the more the factor structure is affected. A sample size of 200 is reasonably good for ordinary factor-analytic work with 40 or fewer variables. More variables require larger samples.
[19]Comrey AL. Factor-analytic methods of scale development in personality and clinical psychology[J]. J Consult Clin Psychol. 1988, 56(5):754-61. DOI: 10.1037//0022-006x.56.5.754.
[20] Minglong Wu. The statistical analysis practice of questionnaire: SPSS operation and application [M].Chongqing, 2010.
[21] PRICE L R. Psychometric methods:theory into practice[M]. Washington: Guilford Publications, 2016.

3. The content validation methods are not really explained until the discussion section. I think it would be useful to cite and briefly summarize the methods and purpose of the I-CVI, S-CVI, expert authority coefficient, and synergy coefficient at least briefly in the methods section.
A: Thank you very much: we had revised in the manuscripts.

4. The rationale for the exclusion criteria should be briefly explained.
A: Thank you very much: We took MRC-Score ≤48 as the criterion for the diagnosis of ICU-AW in our study, and participants with unstable fracture, limb deformity and limb dysfunction would not be able to participate in the assessments. There are differences in the definition and diagnostic criteria of ICU-AW, myasthenia gravis, neuromuscular dysfunction, critical illness myopathy.

5. It may be noteworthy that part of the data collection period included months in the first half of 2020 in which the composition of the hospitalized population -- and ICU patients in particular -- may have been impacted by the COVID-19 pandemic. It may be useful to mention briefly in the discussion the extent to which the patient population included here was (or was not) affected, and whether this has any potential implications for the interpretation of the results.
A: Thank you very much: Participants were recruited from the general ICU of five third-grade class-A hospitals in western China from September 2019 to June 2020. ICU patients had not been impacted by the COVID-19 pandemic in western China(Gansu province, Shanxi province and Qinghai province).

REVIEWER COMPETING INTERESTS

Reviewer: 1
Competing interests: None declared.

Reviewer: 2
Competing interests: None declared

Reviewer: 3
Competing interests: None declared

VERSION 2 – REVIEW

REVIEWER	Wang, Gang Xi'an Jiaotong University, China
REVIEW RETURNED	13-Jan-2021

GENERAL COMMENTS	1. The format of punctuations should be unified, and there are several punctuations typed in incorrect format in the Abstract. 2. In line 125-127, the description of Table 1 may be inaccurate. I recommend changing "The result showed that there were no significant differences in sex, nationality, professional title, …" into "The result showed that there were no significant differences regarding the assessments of 'Readily comprehensive', 'Well described', 'Conform to Chinese grammatical' in nurses with varied sex, nationality, professional title, …"

REVIEWER	Kellie Sosnowski Intensive Care Unit, Logan Hospital, Queensland, Australia.
REVIEW RETURNED	30-Jan-2021

GENERAL COMMENTS	Thank you for the opportunity to review this revised manuscript. The standard of English in the manuscript has improved greatly, though the paper would benefit from further proofreading and editing. 4.5 Strengths and limitations Page 12 Line 9 should be 'maximum' inspiratory pressure. Ethical approval and consent to participate Page 12: I previously recommended a review of this section. I assume from the explanation provided that the requirement for informed consent was waived due to potential issues with data validity and quality which occurred when informing people about the study. This section would be improved with further proofreading and editing. Conclusion: I believe the work performed by the authors is interesting and important. I hope my suggestions have been helpful. Kind regards Kellie Sosnowski

REVIEWER	R. David Hayward, PhD Ascension Saint John Hospital Detroit, Michigan USA
REVIEW RETURNED	19-Jan-2021

GENERAL COMMENTS	Based on my review of the markup version of the revised manuscript, it appears that two of the five issues raised in my initial review have been addressed. I still think that my remaining points should either be addressed in one way or another: 1. A copy of the instrument should either be included (e.g., in an appendix), or given in a link, or else it should be specified that the instrument can be obtained from the author(s). 2. A brief justification of the exclusion criteria should be provided. 3. The partial overlap of the study period with the COVID-19

	pandemic should be addressed -- either to note that it may have had an impact or to note that the region in which the study was conducted was not impacted (whichever is appropriate).

VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Prof. Gang Wang, Xi'an Jiaotong University Second Affiliated Hospital

Comments to the Author:

In this revised version, the authors addressed the problems mentioned before. The manuscript was improved and enriched. However, some minor concerns still exist:

1. The format of punctuations should be unified, and there are several punctuations typed in incorrect format in the Abstract.

A: thanks for your guidance: we had revised punctuations in the abstract and marked yellow highlight.

2. In line 125-127, the description of Table 1 may be inaccurate. I recommend changing “The result showed that there were no significant differences in sex, nationality, professional title, …” into “The result showed that there were no significant differences regarding the assessments of ‘Readily comprehensive’, ‘Well described’, ‘Conform to Chinese grammatical’ in nurses with varied sex, nationality, professional title, …”

A: thanks for your guidance: we had revised as your suggestions.

Reviewer: 3

Dr. R. David Hayward, St. John Hospital & Medical Center

Comments to the Author:

Based on my review of the markup version of the revised manuscript, it appears that two of the five issues raised in my initial review have been addressed. I still think that my remaining points should either be addressed in one way or another:

1. A copy of the instrument should either be included (e.g., in an appendix), or given in a link, or else it should be specified that the instrument can be obtained from the author(s).

A: thanks for your guidance: we had provided the CPAx and CPAx-Chi Scales as appendixes in the main document. In addition, the CPAx and CPAx-Chi Scales can be obtained from the author by Emails(CPAx：e.corner13@imperial.ac.uk；CPAx-Chi: yuchen0723@126.com)

2. A brief justification of the exclusion criteria should be provided.

A: thanks for your guidance: we had provided the justification of the exclusion criteria in the main document. Patients with unstable fracture, limb deformity, limb dysfunction, myasthenia gravis and Guillain-Barre syndrome were excluded due to that they easily misdiagnosed as ICU-AW by MRC-Score scale.

3. The partial overlap of the study period with the COVID-19 pandemic should be addressed -- either to note that it may have had an impact or to note that the region in which the study was conducted was not impacted (whichever is appropriate).

A: Thank you very much: Participants were recruited from the general ICU of five third-grade class-A hospitals in western China from September 2019 to June 2020; and the regions in which the study was conducted were not impacted by the COVID-19.

Reviewer: 2

Ms. Kellie Sosnowski, Logan Hospital

Comments to the Author:

Thank you for the opportunity to review this revised manuscript.

The standard of English in the manuscript has improved greatly, though the paper would benefit from further proofreading and editing.

4.5 Strengths and limitations Page 12 Line 9 should be 'maximum' inspiratory pressure.

A: thanks for your guidance: we had revised massive as maximum.

Ethical approval and consent to participate Page 12: I previously recommended a review of this section. I assume from the explanation provided that the requirement for informed consent was waived due to potential issues with data validity and quality which occurred when informing people about the study. This section would be improved with further proofreading and editing.

A: thanks for your guidance: Informed consent is a weakness of this study. In the pre-testing study, we found that there were significantly differences between informed consent patients and the no informed consent patient, especially in the items just like respiratory function, grip strength and transferring from bed to a chair. Therefore, we requirement for informed consent was waived due to potential issues with data validity and quality which occurred when informing people about the study. And, the study protocol was approved by the Ethics Committee of the First Hospital of Lanzhou University (LDYYLL2019-232) in Lanzhou, China.

I hope my explanation answers your questions? Hopefully, our future research will overcome the weakness.