nature portfolio

Peer Review File

The Montreal Cognitive Assessment in Spanish-speaking countries in Latin America and the Caribbean: A Systematic Review

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This file contains all reviewer reports in order by version, followed by all author rebuttals in order by version.

Version 0:

Reviewer comments:

Reviewer #1

(Remarks to the Author)
The authors have put in good effort in incorporating feedback and improving the overall quality of the paper. There are a few more improvements that could be made:

General Comment: I believe that the quality of the paper would improve even further if the authors were to: (a) name the papers they are referring to within the text more often instead of always numbering them, e.g., One publication, Gómez et al. (18), assessed only control participants. When it's always one study did this, one study did that, it's hard to 'paint a picture' so to say of these articles without constantly referring back to the references or the tables (b) provide more examples from the articles to further explain their point, e.g., "One of these studies described language adaptations involving minor lexical substitutions. Insert example from article"

Introduction:

Line 90: Extensive previous research has shown that culture-free items are not feasible. Please replace with culturally appropriate items.

Lines 93-104: It is unclear to me why the authors mention the MMSE at all if it is not a focus for the paper. If the authors are arguing that they chose to focus on the MoCA instead of the MMSE because the MoCA is more sensitive, please make this argument more clear.

Methods:
Line 375: I am confused by the inclusion criteria 'compare the MoCA with gold-standard diagnostic criteria'. Firstly, the authors included a paper with only healthy controls so maybe clarify that if there is a patient sample that this was an inclusion criteria, although in the results the authors only describe 6 papers which used a neuropsychological test battery as a reference and four which used imaging, including the paper with only controls, what was the reference in the other two papers ? But further to the point, is there a diagnostic gold-standard for these populations? When we know that most neuropsych tests have been create within countries of the Global North, with tests developed to replicate the structure and content of the Global North necessitating test-wiseness and therefore biasing test performance for lower and differently educated patients. I would either rephrase this or think about whether this was really used as an inclusion criteria.

Line 424: I am confused as to why the authors mention the guidelines of Cova and Khan when they are not reported anywhere in the results and already have the MTRQ and the MCAR.

Results:

Line 141: I think it would be helpful to provide more information on why the expert committee decided that no modifications were necessary given that this goes against the main concept of the paper (and plenty of previous research that suggests otherwise). And it would be good to come back to it and make a comment about it in the discussion.

Line 145: The full names of the MTRQ and the MCAQ should be reported in the prior methods section not in the results section.

Line 150: It mentions adaptation and translation in the translation section of the results section, is it supposed to only be translation or is it both? Maybe good to clarify.

Line 150-154: I am confused by how all of the articles which are listed as having done a translation, have Not Reported under the translation column. For the ones that have some steps completed, what have they done exactly if not a pilot-test of a translated version?
Line 162: The wording here is a little awkward, maybe saying something more simple like 'Half of the studies had a Cronbach's alpha between .7 and .9…etc.'

Overall: The results section, particularly the psychometric properties section, would greatly benefit from actively naming the authors of the referred to articles within the text.

Discussion

Overall: The discussion is well thought and well written. The discussion section is where I see the authors name authors and provide specific examples, this is what I would like to see more throughout the text.

Line 196: The authors begin the sentence with "The" as if they have previously mention this review. It should be "A".

Lines 243-246: "The items of attention, especially digit span and subtraction, remain almost unchanged in all the adapted versions resulting in the most cross-culturally fair and subtraction task being influenced by education." This sentence is very unclear to me, I am not sure what is trying to be said.

Lines 317-321: I feel like the authors are trying to make a lot of points in one sentence and it gets a bit lost. Worth reviewing.

Lines 323-325: "The study does not comprise of publications conducted in the Spanish language" but weren't Spanish language articles included? How is this a strength?

Lines 362 – 364: It would be good for the authors to reference and directly mention that studies looking to translate neuropsychological test should follow the recently published Neuropsychological Application of the International Test Commission's (ITC) Guidelines for Translating and Adapting Tests : https://www.the-ins.org/wp-content/uploads/2024/01/INS-SIG-Assessment-Workgroup-2023-ITC-Guidelines-Neuropsychology-Application.pdf

Reviewer #2

(Remarks to the Author)
The manuscript "The Montreal Cognitive Assessment in Spanish-speaking countries in Latin America and the Caribbean: A Systematic Review" addresses a critical issue regarding the validation and cultural adaptation of the Montreal Cognitive Assessment (MoCA) for Spanish-speaking populations in Latin America and the Caribbean (LAC). The study holds significant merit as the first paper with this specific objective. Given the high prevalence of dementia in LAC and the significant social inequalities that affect both cognitive health and test performance itself, culturally tailored adaptations are essential. Furthermore, the diversity among LAC countries necessitates careful discussion of regional adaptations and different cutoff values, particularly considering factors such as education level.
The manuscript also highlights the lack of rigorous validation studies for MoCA in LAC. Thus, this review plays a crucial role in assessing the existing literature on adapted instruments for this context and encouraging further research to bridge this gap.
I appreciate that many of my previous suggestions have been incorporated, significantly enhancing the article's flow and clarity. However, I still believe that the manuscript's scope remains narrow for a high-impact journal. The review focuses exclusively on Spanish-speaking LAC countries and includes only a few studies, most of which present a high risk of bias and do not provide clear recommendations and conclusions. However, there is an opportunity for the authors to better present the adaptations that were made and to expand the discussion, providing more substantial contributions by offering clear guidelines for cultural adaptation, as they suggest in the discussion. This could enhance the paper's relevance for clinical practice and research by providing practical, region-specific recommendations based on the reviewed literature.

Abstract
- The authors should revise the abstract to clearly state the study's objective and highlight the main conclusions.

Introduction
The introduction is clear.

Methods
- Line 375: The manuscript states that "Studies that involved patients with mild cognitive impairment (MCI) or dementia were included." However, studies with only healthy populations were also included. This should be added.
- Line 376: Why were conference presentations and theses excluded? Including gray literature would strengthen the review and potentially increase the number of included studies.

- Line 406: Why was the full-text review not conducted by two independent reviewers? For increased methodological rigor, this step should be revised.

Results
- The authors should better characterize the included studies in the main text, particularly regarding the educational background of the populations. Did the studies include illiterate participants, indigenous populations, or rural populations? Currently, only the country of data collection is mentioned, but a more detailed description would be valuable.
- Likewise, the discussion of different cutoff values should be included in the main text rather than only in the supplementary materials.
- Line 178 - Interpretability: The manuscript states, "Only one study did not compare different groups to evaluate the results of the MoCA test (18)." Could the authors provide more details on how the other studies conducted these comparisons in the main text?

Discussion
- The manuscript mentions the role of education in MoCA performance. However, it should systematically discuss which included studies assessed populations with low education or illiteracy and whether the adapted versions were suitable for these populations. While I acknowledge that there are tables addressing this, a more thorough discussion in the main text would be beneficial.
- Table 1 suggests that the included studies had relatively high average educational level, which is unexpected for LAC countries. The authors should discuss the sampling methods/ recruitment strategies used in the studies and the consider potential selection bias toward more educated populations in the included research. Additionally, no included studies seem to have examined indigenous or rural populations, which should be addressed.
- Table 4 shows that most studies have "ND" (no data) and only two have a low risk of bias. This raises concerns about the review's conclusions. Were the authors contacted to provide these missing data?
- Line 225-227: The manuscript states, "In a sample of patients from the Andean region of Colombia, where the average education level was 4.8 years and 8% were illiterate, the MoCA subtests least biased by education were orientation, delayed recall, and repetition." Could the authors clarify how this conclusion was reached?
- Line 322-325: The authors claim that "the published systematic review addresses the brief cognitive screening topic for cognitive impairment and does not comprise publications conducted in Spanish or indexed in databases such as LILACS" Which reviews are they referring to? Citations should be provided.
- Line 322: The phrase "unclear criteria for differentiating between them" is ambiguous. The authors should clarify.

- Lines 352-354: What unique needs for each country are identified in this review?
- Lines 350-352: The conclusion states, "This systematic review underscores the necessity of considering cross-cultural factors when using the MoCA for screening in Spanish-speaking LAC populations." At what point does this review highlight the necessity of considering cross-cultural factors? The authors should provide evidence to support this conclusion and clarify their key take-home message.
- The manuscript lacks clear and impactful conclusions, as well as actionable messages for both the scientific community and practitioners. The authors should elaborate on the cultural adaptations that are still missing in the existing studies and propose guidelines for future research and clinical practices.

Minor Comments
- Table 1: Why are standard deviations missing for some studies?
- Line 270: Consider whether the acronym "CU" is necessary (line 270)
- Supplementary Table 2: Some studies do not report percentages in the "Number of low-educated and illiterate participants" column. These should be added.
- The line numbers overlap with the citation numbers, making it difficult to verify references.

Reviewer #3

(Remarks to the Author)
The review issues were addressed.

Version 1:

Reviewer comments:

Reviewer #1

(Remarks to the Author)
Thank you for having addressed all concerns so thoroughly. I have no further comments and feel that this paper will contribute nicely to the literature.

Reviewer #2

(Remarks to the Author)
Thank you to the authors for their revisions. I have reviewed the revised manuscript and am satisfied with the changes. I

have no further comments and recommend acceptance in its current form

Thank you for the opportunity to revise our manuscript. We appreciate the careful reading, constructive comments, and suggestions. We have considered all of the comments and revised the manuscript accordingly. Below, we provide a point-by-point response to all of the remarks.

Reviewer #1

The authors have put in good effort in incorporating feedback and improving the overall quality of the paper. There are a few more improvements that could be made:

General Comment: I believe that the quality of the paper would improve even further if the authors were to: (a) name the papers they are referring to within the text more often instead of always numbering them, e.g., One publication, Gómez et al. (18), assessed only control participants. When it's always one study did this, one study did that, it's hard to 'paint a picture' so to say of these articles without constantly referring back to the references or the tables (b) provide more examples from the articles to further explain their point, e.g., "One of these studies described language adaptations involving minor lexical substitutions. Insert example from article"

Response: *Thank you for your constructive feedback. We have addressed your suggestions to improve the clarity and quality of the manuscript. Specifically, we have ensured that the studies are more frequently cited by name within the text, as recommended, rather than just using reference numbers. This should provide a clearer picture of the studies discussed, reducing the need for constant reference back to the tables or bibliography.*

Additionally, we have incorporated specific examples from the articles to further illustrate key points, particularly regarding language adaptations and other relevant findings. We believe these changes enhance the readability and overall comprehension of the paper.

Abstract

None

Introduction

#1: Line 90: Extensive previous research has shown that culture-free items are not feasible. Please replace with culturally appropriate items.

Response: *Thank you for this observation. We agreed that "culture-free items" are not feasible. We have replaced it with "culturally appropriate items" to better align with the literature and to emphasize the importance of contextually adapted cognitive assessments (**See page 3, line 85**).*

#2: Lines 93-104: It is unclear to me why the authors mention the MMSE at all if it is not a focus for the paper. If the authors are arguing that they chose to focus on the MoCA instead of the MMSE because the MoCA is more sensitive, please make this argument more clear.

Response: *Thank you for your thoughtful comment. We have revised the paragraph to clarify that the focus of the paper is on the MoCA due to its superior sensitivity for detecting MCI and early-stage Alzheimer's disease when compared to the MMSE. The mention of the MMSE now serves only to provide context and contrast with the MoCA, particularly because both tools have been recommended in recent international consensus guidelines. The revised paragraph explicitly states our rationale for focusing on the MoCA and highlights the need for culturally and educationally appropriate adaptations of this tool in Latin America and the Caribbean (**See page 3-4, lines 88 to 95**).*

Methods

#1: Line 375: I am confused by the inclusion criteria 'compare the MoCA with gold-standard diagnostic criteria'. Firstly, the authors included a paper with only healthy controls so maybe clarify that if there is a patient sample that this was an inclusion criteria, although in the results the authors only describe 6 papers which used a neuropsychological test battery as a reference and four which used imaging, including the paper with only controls, what was the reference in the other two papers ? But further to the point, is there a diagnostic gold-standard for these populations? When we know that most neuropsych tests have been create within countries of the Global North, with tests developed to replicate the structure and content of the Global North necessitating test-wiseness and therefore biasing test performance for lower and differently educated patients. I would either rephrase this or think about whether this was really used as an inclusion criteria.

Response: *Thanks for your important comment. We decide rephrase this paragraph: "To be eligible, publications had to report psychometric measures and compare the MoCA with local gold-standard diagnostic criteria, including a brief cognitive screening tool, neuropsychological battery, dementia criteria based on the Diagnostic and Statistical Manual of Mental Disorders (DSM), or consensus between psychologist/neuropsychologist and neurologist/psychiatrist/geriatrician" (**See page 15, line 422 to 427**).*

Firstly, the authors included a paper with only healthy controls so maybe clarify that if there is a patient sample that this was an inclusion criteria, although in the results the authors only describe 6 papers which used a neuropsychological test battery as a reference and four which used imaging, including the paper with only controls, what was the reference in the other two papers ?

Response: *In order to clarify the local gold-standard diagnostic criteria, we decided to include another column in table 1 with title: gold-standard diagnostic criteria and detail it in the search results: "Six studies described the neuropsychological battery used as a reference test; two studies based diagnosis on a brief cognitive screening tool (Leganes*

Cognitive Test-LCT and MMSE); four studies based diagnosis on DSM criteria; and four studies used diagnosis based on specialists consensus". **(See page 5, line 125 to 132)**

But further to the point, is there a diagnostic gold-standard for these populations?

Response: *We update information in a new Table 1, to show gold-standard diagnostic criteria from each study.*

#2: Line 424: I am confused as to why the authors mention the guidelines of Cova and Khan when they are not reported anywhere in the results and already have the MTRQ and the MCAR

Response: *Many thanks to note this failure to explain the evaluation of the translation process, because Manchester Translation Reporting Questionnaire (MTRQ) and Manchester Cultural Adaptation Questionnaire (MCAR) have focused mainly on the adapted process (reference 69). We rephrased in the first paragraph of translation process assessment corresponding to the results: "Based on Cova et al (32) and Khan et al (63) recommendations, only five studies report at least one step of the adaptation process…." (**See page 6, line 156 to 157**)*

*And, specify in methods about **translation and cultural adaptation report assessment** with the next paragraph: "In the absence of a universally accepted method for evaluating the translation process, we adopted the approach outlined by Cova et al. (32) and Khan et al. (63) to assess the steps taken in each publication." (**See page 16, line 467 to 469**)*

*Additionally, we precise the reference in the second paragraph: "The quality of the reported translation and cultural adaptation procedures were assessed through the Manchester Translation Reporting Questionnaire (MTRQ) and Manchester Cultural Adaptation Questionnaire (MCAR) respectively (69")." (**See page 16, line 474 to 475**)*

Results

#1: Line 141: I think it would be helpful to provide more information on why the expert committee decided that no modifications were necessary given that this goes against the main concept of the paper (and plenty of previous research that suggests otherwise). And it would be good to come back to it and make a comment about it in the discussion.

Response: *Thank you for your valuable feedback. In response to your comment, we have expanded the explanation regarding the expert committee's decision in the study by Pereira-Manrique et al. to provide more context. Specifically, the committee concluded that no modifications were necessary, as they found the instructions to be clear, explicit, and simple. This decision is indeed contrary to the general trend in the literature, where adaptations are often recommended. We have included a brief comment in the discussion of this in the revised manuscript to acknowledge the contrast and provide further insight into this unusual conclusion. (**See page 6, line 148 to 151**)*

#2: Line 145: The full names of the MTRQ and the MCAQ should be reported in the prior methods section not in the results section.

Response: *We appreciate the reviewer's suggestion. The full names of the MTRQ (Manchester Translation Reporting Questionnaire) and the MCAQ (Manchester Cultural Adaptation Questionnaire) have now been moved to the Methods section, as recommended, to improve clarity and ensure appropriate placement of this information. (**See page 16, line 474 to 475**)*

#3: Line 150: It mentions adaptation and translation in the translation section of the results section, is it supposed to only be translation or is it both? Maybe good to clarify.

Response: *Thank you for your comment. We have revised and clarified the text to specify that the section refers to both the translation and cultural adaptation processes (**See page 6, line 156 to 157**)*

#4: Line 150-154: I am confused by how all of the articles which are listed as having done a translation, have Not Reported under the translation column. For the ones that have some steps completed, what have they done exactly if not a pilot-test of a translated version?

Response: *Thank you for your observation. We understand the confusion and have clarified this point in the revised text. Our assessment was based on a step-by-step evaluation of the translation process. Most of the studies did not report key steps such as direct translation or back-translation, which is why they were marked as 'Not Reported' under the translation column. In the few cases where some steps were completed—such as expert review or consultation with the original author—these studies did not report conducting a pilot test of the final translated version. This has been clarified in both the main text and the table (**See page 6, line 156 to 163**). Additionally, we have moved the detailed table previously included in the main manuscript to the supplementary material (now Supplementary Table 3) for easier reference and to improve the flow of the main text.*

#5: Line 162: The wording here is a little awkward, maybe saying something more simple like 'Half of the studies had a Cronbach's alpha between .7 and .9…etc.'

Response: *Thank you for your helpful suggestion. We have revised the sentence to improve clarity and simplify the wording as you recommended. We believe this enhances the readability of the text. (**See page 6, line 171 to 172**)*

#6: Overall: The results section, particularly the psychometric properties section, would greatly benefit from actively naming the authors of the referred to articles within the text.

Response: *Thank you for your suggestion. We have revised the manuscript to better align with your recommendation by naming the authors of the studies in the psychometric properties section where applicable. We believe this enhances the clarity of the text and helps the reader better follow the comparisons across the studies. For studies where multiple authors were cited, we opted to group the references for conciseness.*

Discussion

#1: Overall: The discussion is well thought and well written. The discussion section is where I see the authors name authors and provide specific examples, this is what I would like to see more throughout the text.

Response: *The manuscript has been revised to provide examples throughout the document.*

#2: Line 196: The authors begin the sentence with "The" as if they have previously mention this review. It should be "A".

Response: *This has been corrected in the text (**See page 8, line 206**).*

#3: Lines 243-246: "The items of attention, especially digit span and subtraction, remain almost unchanged in all the adapted versions resulting in the most cross-culturally fair and subtraction task being influenced by education." This sentence is very unclear to me, I am not sure what is trying to be said.

Response: *This has been corrected in the text (**See page 9, line 271 to 273**).*

#4: Lines 317-321: I feel like the authors are trying to make a lot of points in one sentence and it gets a bit lost. Worth reviewing.

Response: *Thank you for your helpful comment. We agree that the original sentence was trying to convey too many ideas at once, which affected clarity. We have revised the sentence to improve readability by breaking it into shorter, more focused statements (**See page 12, line 347 to 351**).*

#5: Lines 323-325: "The study does not comprise of publications conducted in the Spanish language" but weren't Spanish language articles included? How is this a strength?

Response: *We appreciate the reviewer's comment and apologize for the lack of clarity. To clarify, our review did include publications written in Spanish, as stated in the Methods section. What we intended to emphasize in the sentence cited was that most previously published systematic reviews on this topic did not include studies in Spanish or those indexed in regional databases such as LILACS. In contrast, our review aimed to overcome this limitation by incorporating such studies, thereby improving the comprehensiveness and relevance of findings for LAC populations. We have revised the text for clarity to reflect this more accurately (**See Page 12, line 352 to 355**).*

#6: Lines 362 – 364: It would be good for the authors to reference and directly mention that studies looking to translate neuropsychological test should follow the recently published Neuropsychological Application of the International Test Commission's (ITC) Guidelines for Translating and Adapting Tests : https://www.the-ins.org/wp-

content/uploads/2024/01/INS-SIG-Assessment-Workgroup-2023-ITC-Guidelines-Neuropsychology-Application.pdf

Response: *We thank the reviewer for this excellent suggestion. We agree that referencing the recently published Neuropsychological Application of the International Test Commission's (ITC) Guidelines provides valuable context for future adaptation efforts. We have now cited and briefly discussed these guidelines in the revised manuscript to reinforce the need for standardized, culturally sensitive translation and adaptation procedures in neuropsychological test validation (**See page 11-12, line 340 to 346**).*

Reviewer #2

The manuscript "The Montreal Cognitive Assessment in Spanish-speaking countries in Latin America and the Caribbean: A Systematic Review" addresses a critical issue regarding the validation and cultural adaptation of the Montreal Cognitive Assessment (MoCA) for Spanish-speaking populations in Latin America and the Caribbean (LAC). The study holds significant merit as the first paper with this specific objective. Given the high prevalence of dementia in LAC and the significant social inequalities that affect both cognitive health and test performance itself, culturally tailored adaptations are essential. Furthermore, the diversity among LAC countries necessitates careful discussion of regional adaptations and different cutoff values, particularly considering factors such as education level.

The manuscript also highlights the lack of rigorous validation studies for MoCA in LAC. Thus, this review plays a crucial role in assessing the existing literature on adapted instruments for this context and encouraging further research to bridge this gap.

I appreciate that many of my previous suggestions have been incorporated, significantly enhancing the article's flow and clarity. However, I still believe that the manuscript's scope remains narrow for a high-impact journal. The review focuses exclusively on Spanish-speaking LAC countries and includes only a few studies, most of which present a high risk of bias and do not provide clear recommendations and conclusions. However, there is an opportunity for the authors to better present the adaptations that were made and to expand the discussion, providing more substantial contributions by offering clear guidelines for cultural adaptation, as they suggest in the discussion. This could enhance the paper's relevance for clinical practice and research by providing practical, region-specific recommendations based on the reviewed literature.

Abstract

#1: The authors should revise the abstract to clearly state the study's objective and highlight the main conclusions.

*Response: Thank you for your suggestion. We have revised the abstract to clearly state the study's objective and to highlight the main conclusions, ensuring a more concise and focused summary of the key findings (**See page 2, line 36 to 52**).*

Introduction

The introduction is clear.

Response: We sincerely appreciate the reviewer's positive feedback. We are glad to know that the introduction was clear and effectively framed the context and objectives of the study.

Methods

#1: Line 375: The manuscript states that "Studies that involved patients with mild cognitive impairment (MCI) or dementia were included." However, studies with only healthy populations were also included. This should be added.

Response: *Many thanks to note this failure to explain the inclusion criteria. We rephased: "Studies that involved participants controls or cognitively healthy and patients with mild cognitive impairment (MCI) or dementia were included". (**See page 15, line 426 to 427**)*

#2: Line 376: Why were conference presentations and theses excluded? Including gray literature would strengthen the review and potentially increase the number of included studies.

Response: *Thank you for highlighting this important point. We decided to exclude conference presentations and theses because these sources often lack detailed methodological information and data necessary for rigorous quality assessment and synthesis. Additionally, conference presentations frequently reflect preliminary findings or personal experiences that may not be subject to the same level of peer review as published studies. Our focus was on including studies with sufficient methodological detail to allow for reliable evaluation and synthesis in the review..*

#3: Line 406: Why was the full-text review not conducted by two independent reviewers? For increased methodological rigor, this step should be revised.

Response: *Thanks for noting this methodological mistake, so we included such an additional limitation in discussion. We rephrased the penultimate paragraph about limitations. "The quality assessment ratings may also be subject to individual bias, although steps were taken to minimize this, such as the inclusion of a second rater; however we noted the lack of a second assessor in the full-text review." (**See page 12, line 376**).*

Results

#1: The authors should better characterize the included studies in the main text, particularly regarding the educational background of the populations. Did the studies include illiterate participants, indigenous populations, or rural populations? Currently, only the country of data collection is mentioned, but a more detailed description would be valuable.

Response: *Thank you for this valuable observation. We have revised the main text to include a more detailed characterization of the populations assessed in the included studies. Specifically, we now indicate which studies included participants with low education or illiteracy, and we clarify whether rural or indigenous populations were represented. This information was added to enhance the reader's understanding of the contextual and demographic variability of the samples. Additional details are also provided in Supplementary Table 2. (**See page 5, line 133 to 140**)*

#2: Likewise, the discussion of different cutoff values should be included in the main text rather than only in the supplementary materials.

Response: *Thank you for your suggestion. We agree that the discussion of different cutoff values is important for the interpretation of the findings. In response, we have incorporated the relevant information regarding the different cutoff points by educational level into the main text of the manuscript, while still retaining the detailed tables in the supplementary materials for reference (**See page 5, line 133 to 135**).*

#3: Line 178 - Interpretability: The manuscript states, "Only one study did not compare different groups to evaluate the results of the MoCA test (18)." Could the authors provide more details on how the other studies conducted these comparisons in the main text?

Response: *Thank you for your observation. We have clarified the text to provide more detail on how the other studies conducted group comparisons when evaluating the MoCA test. (**See page 7, line 190 to 193**)*

Discussion

#1: The manuscript mentions the role of education in MoCA performance. However, it should systematically discuss which included studies assessed populations with low education or illiteracy and whether the adapted versions were suitable for these populations. While I acknowledge that there are tables addressing this, a more thorough discussion in the main text would be beneficial.

Response: *This has been reviewed systematically and in more detail on **pages 8-9 lines 228 to 242**.*

#2: Table 1 suggests that the included studies had relatively high average educational level, which is unexpected for LAC countries. The authors should discuss the sampling methods/recruitment strategies used in the studies and the consider potential selection bias toward more educated populations in the included research. Additionally, no included

studies seem to have examined indigenous or rural populations, which should be addressed.

Response: *We thank the reviewer for this important observation. Upon reviewing the recruitment methods in the included studies, we found that most recruited from urban clinical or academic centers, often excluding individuals with very low education or those unable to complete cognitive testing. For example, Serrano et al. excluded participants with <3 years of education, and others, like Gil et al., recruited from memory clinics in Bogotá. No studies specifically targeted rural or Indigenous populations. These recruitment strategies likely introduced a selection bias toward more educated, urban participants, which limits the generalizability of findings to the broader LAC population. We have added this discussion point to the manuscript on* ***Page 8, Line 229 to 242.***

#3: Table 4 shows that most studies have "ND" (no data) and only two have a low risk of bias. This raises concerns about the review's conclusions. Were the authors contacted to provide these missing data?

Response: *Thank you for your observation. Yes, we attempted to contact the corresponding authors of the studies with missing data in order to obtain additional information. However, we received limited responses, and the missing data could not be fully retrieved.*

To address your concern and improve clarity, we have revised Table 4 and presented it as Figure 3 in the updated version of the manuscript. This new format enhances the visualization of the risk of bias assessment and makes it easier to interpret the overall quality of the included studies.

#4: Line 225-227: The manuscript states, "In a sample of patients from the Andean region of Colombia, where the average education level was 4.8 years and 8% were illiterate, the MoCA subtests least biased by education were orientation, delayed recall, and repetition." Could the authors clarify how this conclusion was reached?

Response: *This has been clarified on* ***Page 9 Line 250 to 255****.*

#5: Line 322-325: The authors claim that "the published systematic review addresses the brief cognitive screening topic for cognitive impairment and does not comprise publications conducted in Spanish or indexed in databases such as LILACS" Which reviews are they referring to? Citations should be provided.

Response: *We added citations referring to the systematic reviews discussed in the manuscript. (****See Page 12, Line 352 to 353.****)*

#6: Line 322: The phrase "unclear criteria for differentiating between them" is ambiguous. The authors should clarify.

Response: *This has been rephrased in* ***page 12, line 361 to 363****.*

#7: Lines 352-354: What unique needs for each country are identified in this review?

Response:

Thank you for highlighting this point. While the primary objective of our review was not to systematically evaluate country-specific needs, several unique considerations emerged from the included studies:

- *Argentina and Chile were the only countries where studies reported explicit lexical adaptations to the MoCA to better align with local usage (e.g., "seda" replaced with "terciopelo" in Argentina, "comuna" with "localidad" in Chile), indicating a need for regionally sensitive language adjustments.*

- *Colombia contributed the most studies evaluating low-education and illiterate participants, revealing subtests (e.g., orientation, delayed recall) that were less influenced by education. This highlights the need for education-adjusted cutoffs and item selection in that context.*

- *In contrast, studies from Ecuador, Mexico, and Cuba did not report cultural adaptations or rural/Indigenous inclusion, suggesting a need for broader sampling strategies and linguistic tailoring in future validations.*

A note to this effect has been added to the text in ***Page 13, Line 398 to 404****.*

#8: Lines 350-352: The conclusion states, "This systematic review underscores the necessity of considering cross-cultural factors when using the MoCA for screening in Spanish-speaking LAC populations." At what point does this review highlight the necessity of considering cross-cultural factors? The authors should provide evidence to support this conclusion and clarify their key take-home message.

Response:

We appreciate this thoughtful comment. We have revised the manuscript to more clearly support and contextualize this conclusion. Specifically, the review identifies several findings that emphasize the need to consider cross-cultural factors:

- *Only two studies (Argentina and Chile) explicitly reported lexical adaptations to the MoCA, illustrating variation in how culturally embedded language is handled across LAC countries (Discussion, page 13 line 405 to 411).*

- *Despite a shared language, different studies used divergent versions of Spanish, and terms like "cara" vs. "rostro" or "comuna" vs. "localidad" were adjusted based on regional norms, reflecting within-language cultural variability.*

- *Translation processes and adaptation methodologies were inconsistently reported across studies (Results: Translation process assessment), with only one study*

achieving a moderate adaptation quality rating.

- *Most studies recruited urban, more-educated participants and did not include rural or Indigenous groups, which limits generalizability and highlights the need for culturally inclusive validation efforts (Discussion, page 13 line 405 to 411).*

To make our take-home message clearer, we have added a sentence at the end of the Conclusion summarizing that ensuring the cultural and linguistic appropriateness of MoCA adaptations is essential to improve diagnostic equity and reduce misclassification in diverse LAC populations.

#9: The manuscript lacks clear and impactful conclusions, as well as actionable messages for both the scientific community and practitioners. The authors should elaborate on the cultural adaptations that are still missing in the existing studies and propose guidelines for future research and clinical practices.

Response: *We thank the reviewer for this constructive comment. In response, we have revised the Conclusion section to include more impactful, practice-oriented takeaways. Specifically, we now highlight the types of cultural adaptations that are still missing across studies, such as the limited inclusion of rural or Indigenous populations, inconsistent use of local language adaptations, and the absence of MoCA versions tailored to illiterate individuals. We also propose guidelines for future work, including the application of standardized translation and adaptation frameworks (e.g., ITC Guidelines), education-adjusted cutoffs, and protocols for pilot testing in diverse subpopulations. These additions aim to provide clear next steps for both researchers and clinicians in the region.*

Minor Comments

#1: Table 1: Why are standard deviations missing for some studies?

Response: *Thank you for your comment. We have revised Table 1 to ensure that standard deviations are now included for all studies that reported them. In one case, the study by Pedraza et al. (2016) presented only the median and interquartile range, without reporting a standard deviation. This has been noted accordingly in the table.*

#2: Line 270: Consider whether the acronym "CU" is necessary (line 270)

Response: *Thank you for pointing this out. The acronym "CU" was included in error and has been removed from the revised manuscript.*

#3: Supplementary Table 2: Some studies do not report percentages in the "Number of low-educated and illiterate participants" column. These should be added.

Response: *Thank you for your comment. We have updated Supplementary Table 2 to include the missing percentages in the "Number of low-educated and illiterate participants" column, as requested.*

#4: The line numbers overlap with the citation numbers, making it difficult to verify references.

Response: *Thank you for pointing this out. We believe the issue with the overlapping line and citation numbers occurred during the conversion or upload process on the journal's submission platform. We have carefully reviewed the document and ensured that in the revised version, the formatting has been corrected to avoid any overlap and to facilitate the verification of references.*

REVIEWER #3:

The review issues were addressed.

Response: *Thank you for your feedback. We appreciate your acknowledgment and are pleased that the revisions satisfactorily addressed the review issues raised in the previous round.*