Hernández-Posadas, A., De la Rosa-Gómez, A., Lommen, M., Bouman, T., Mancilla-Díaz, J., & Valdés, D. (2023). Psychometric properties of the Mexican version of the Intolerance of Uncertainty Scale: The IUS-12M. *Interacciones, 9*, e358. https://doi.org/10.24016/2023.v9.358

LETTER OF REVIEWERS

Reviewer A:
Recommendation: Revisions Required

Relevance: High
Novelty: Moderated
Presentation and writing: Very high

Comments for authors:

I have carefully reviewed the manuscript and have some constructive feedback and suggestions for you to consider.
The introduction provided in the manuscript is well-written and aligns with the standard format for similar studies on the IUS-12 conducted in various countries and languages. However, it has come to my attention that while Spanish native speakers tend to support the two-factor structure, international studies often favor the bifactor model. I recommend that the authors explore this discrepancy in greater detail and discuss potential reasons for these differences. Specifically, I would encourage the authors to investigate whether the study by Pineda-Sánchez (2018) has tested the bifactor model for the Spanish version of the IUS-12. If not, it would be beneficial to mention that the bifactor model cannot be definitively ruled out as the best fitting model for the Spanish language version. Additionally, it would be informative to explore if there are other Spanish translations of the IUS-12 for which factor analytic studies are available to provide a broader context.
The study sample is heterogeneous, and although it is not excessively large, it is deemed adequate for conducting a confirmatory factor analysis (CFA). Nevertheless, there is a slight gender imbalance within the subgroups, which could potentially introduce bias when performing multigroup analyses by sex. I recommend that the authors acknowledge this limitation in the study and consider its potential implications for conclusions drawn regarding invariance by sex. Given the wide age range of participants, it might also be valuable for the authors to explore invariance by age, possibly by conducting separate analyses for young adults and older adults, using a median split on age to define the two subgroups.
Missing values are not addressed in the manuscript, and there is no mention of how they were handled. It is important to provide clarity on this matter, as missing data can significantly impact the results and their interpretation. The authors should specify whether there were no missing values, if missing values were imputed, or if a complete case analysis was conducted. These details are crucial for ensuring the transparency and rigor of the study.
Finally, with regard to the statistical analysis, it is noted that the authors appropriately used maximum likelihood (ML) estimation, considering that multivariate normality was not substantially violated. However, it is essential to highlight that the items in the IUS-12 scale are ordered categorical in nature. To improve the appropriateness of the analysis, I suggest that the authors consider setting the measurement level to ordinal and employing estimators such as Unweighted Least Squares (ULS) or Diagonally Weighted Least Squares (DWLS). This adjustment can enhance the accuracy and robustness of the findings.
In summary, I commend the authors on their comprehensive work in examining the psychometric properties of the Mexican version of the IUS-12M. My feedback is intended to enhance the quality and completeness of the manuscript. I believe that addressing these points will significantly contribute to the overall rigor and relevance of the study. I look forward to seeing the revised manuscript and hope that the authors will consider these suggestions.

Reviewer B:
Recommendation: Revisions Required

Relevance: High

Hernández-Posadas, A., De la Rosa-Gómez, A., Lommen, M., Bouman, T., Mancilla-Díaz, J., & Valdés, D. (2023). Psychometric properties of the Mexican version of the Intolerance of Uncertainty Scale: The IUS-12M. *Interacciones, 9,* e358. https://doi.org/10.24016/2023.v9.358

Novelty: Moderated
Presentation and writing: High

Comments for authors:

METHOD
1. Add a subsection called "Design" and mention that this is a cross-sectional study.
2. It is unclear how the minimum sample size needed to be sure that you have sufficient statistical power to conduct the analysis was determined. For example, using a formula to determine the CFI of the model. Here is an example of a calculator: https://wnarifin.github.io/ssc_web.html
3. In the Materials subsection, you should add the covariates you are evaluating, for example, sex, age, etc. A valid question would be whether the most appropriate name would be Materials or "Variables and Instruments".
4. In the statistical analysis subsection, it is not clear which estimator was used (i.e., MLR, WLSMV, DWLS). It is recommended to add the estimator and the type of matrices used (polychoric or Pearson).
RESULTS
5. The authors say: "However, the correlation between the factors was high (r=.77)". But they report Pearson's correlation, they should report the latent correlation between the dimensions, where the correct symbol is Phi or Φ.
6. I am concerned that when partial invariance has been found, the total score of the IUS-12M is used as convergent validity, I suggest adding another table showing the correlation scores for each gender and the total. I hope that the correlation values between males and females do not change.
DISCUSSION
7. It would be good to discuss why item 8 in the specific dimension of inhibition has a positive direction, while the rest have a negative direction.
8. I suggest adding a subsection on the clinical or public health implications of the study.

Hernández-Posadas, A., De la Rosa-Gómez, A., Lommen, M., Bouman, T., Mancilla-Díaz, J., & Valdés, D. (2023). Psychometric properties of the Mexican version of the Intolerance of Uncertainty Scale: The IUS-12M. *Interacciones, 9*, e358. https://doi.org/10.24016/2023.v9.358

RESPONSE LETTER

Dear Editor and Reviewers

Thank you for the opportunity to submit the revised manuscript of the "Psychometric properties of the Mexican version of the Intolerance of Uncertainty Scale: The IUS-12M". We appreciate the time and effort dedicated to give us feedback to improve our manuscript. We have carefully considered and incorporated the suggestions. We would be happy to make further alterations if necessary. Please see below, a point-by-point response to the comments and concerns. The revised manuscript has been uploaded with track changes.

Reviewer A:

The introduction provided in the manuscript is well-written and aligns with the standard format for similar studies on the IUS-12 conducted in various countries and languages. However, it has come to my attention that while Spanish native speakers tend to support the two-factor structure, international studies often favor the bifactor model. I recommend that the authors explore this discrepancy in greater detail and discuss potential reasons for these differences. Specifically, I would encourage the authors to investigate whether the study by Pineda-Sánchez (2018) has tested the bifactor model for the Spanish version of the IUS-12. If not, it would be beneficial to mention that the bifactor model cannot be definitively ruled out as the best fitting model for the Spanish language version. Additionally, it would be informative to explore if there are other Spanish translations of the IUS-12 for which factor analytic studies are available to provide a broader context.

Authors response: Thank you for your suggestion, to the day Pineda-Sánchez (2018) has not explored the bifactor model for the Spanish version of the IUS-12 and there are no other studies on Spanish translation that have done so, as indicate on page 5 "*However, despite the broad importance of intolerance of uncertainty as a transdiagnostic construct, there is only one study on Spanish versions and no studies to the date were performed in a Mexican population.*" We acknowledge that, while the bifactor model was the best fitting model for our sample, we cannot confirm it is as the best-fitting model for the Spanish language version. Therefore, we have incorporated this consideration into our discussion's limitations on page 15-16 "*Finally, while the bifactor model emerged as the best-fitting model in our sample, its applicability to the Spanish version cannot be definitively asserted. Therefore, future studies should investigate whether the bifactor model remains the best-fitting option for the Spanish version.*"

The study sample is heterogeneous, and although it is not excessively large, it is deemed adequate for conducting a confirmatory factor analysis (CFA). Nevertheless, there is a slight gender imbalance within the subgroups, which could potentially introduce bias when performing multigroup analyses by sex. I recommend that the authors acknowledge this limitation in the study and consider its potential implications for conclusions drawn regarding invariance by sex. Given the wide age range of participants, it might also be valuable for the authors to explore invariance by age, possibly by conducting separate analyses for young adults and older adults, using a median split on age to define the two subgroups.

Authors response: Thank you for your comment, we have specified in the discussion that there was a sex imbalance in the sample on page **14** "*For the Mexican version, despite a slight sex imbalance in the sample, the bifactor model was stable across women and men as indicated by both factor structure and factor loadings.*"

Additionally, as suggested by the reviewer we conducted exploratory invariance analysis by age which the test showed equivalence in factor loading analysis based on age. The results indicated equivalence invariance just on the factor loading, suggesting potential differences in the comprehension of items among various age groups. Nevertheless, there is insufficient evidence supporting age invariance in the construct of intolerance of uncertainty, highlighting the necessity for future exploration. We have included this in the results section page 13 and on the discussion on page 15 "*On the other hand, age invariance only demonstrated a stable factor structure, which could potentially indicate differences in comprehension of the items between age groups. However, there is insufficient evidence of age invariance in the construct of intolerance of uncertainty, suggesting a need for further exploration*."

Missing values are not addressed in the manuscript, and there is no mention of how they were handled. It is important to provide clarity on this matter, as missing data can significantly impact the results and their interpretation. The authors should specify whether there were no missing values, if missing values were imputed, or if a complete case analysis was conducted. These details are crucial for ensuring the transparency and rigor of the study.

Authors response: Thank you for your comment, in our study, participants with missing values were not included in our analysis. For additional clarity, we have added the following information to the Participants subsection on page 5 "*Participants with incomplete data were considered to be dropouts.*"

Finally, with regard to the statistical analysis, it is noted that the authors appropriately used maximum likelihood (ML) estimation, considering that multivariate normality was not substantially violated. However, it is essential to highlight that the items in the IUS-12 scale are ordered categorical in nature. To improve the appropriateness of the analysis, I suggest that the authors consider setting the measurement level to ordinal and employing estimators such as Unweighted Least Squares (ULS) or Diagonally Weighted Least Squares (DWLS). This adjustment can enhance the accuracy and robustness of the findings.

Authors response: Thank you for your comment, in this study we have considered Rhemtulla's suggestion, that when observed variables have with five to seven categories the maximum likelihood method yields acceptable performance. To enhance clarity, this information has been incorporated into the statistical analysis section on page 8 "*Third, to examine the factor structure of the IUS-12 Mexican adaptation a Confirmatory Factor Analysis was performed. Model parameters were estimated with maximum likelihood estimation. This method is applicable when the items analyzed have a minimum of five response options as is the present case in this study (Rhemtulla et al., 2012). This allows a simpler factor model to be applied, rather than a more complex one such as those using polychoric correlations and least squares estimators (e.g., WLSMV).*"

Reviewer B:

1. Add a subsection called "Design" and mention that this is a cross-sectional study.

Authors response: Thank you for your suggestion, we have included a subsection in the methods section that specifies the design of the study, as seen on page **5** "***Design*** *The present study has an instrumental design, as it focuses on examining the psychometric properties of a measurement instrument (Ato et al., 2013).*"

2. It is unclear how the minimum sample size needed to be sure that you have sufficient statistical power to conduct the analysis was determined. For example, using a formula to determine the CFI of the model. Here is an example of a calculator: https://wnarifin.github.io/ssc_web.html

Authors response: Thank you for your comment, we have incorporated the minimum sample size required to conduct the analysis on page 8 "*The estimated sample size considering a CFI of 0.95, significance level (α) of 0.05 and a statistical power of 0.80, was 279 participants (Arifin, 2023).*"

3. In the Materials subsection, you should add the covariates you are evaluating, for example, sex, age, etc. A valid question would be whether the most appropriate name would be Materials or "Variables and Instruments".

Authors response: Thank you for your comment, we have included information taken into consideration, such as age, marital status, level of education, and place of residence, in the subsection. Furthermore, we have renamed the subsection to "Instruments" on page 6-7 "***Instruments*** *Sociodemographic data. A sociodemographic data questionnaire was developed requesting information on age, sex marital status, level of education, and place of residence.*"

4. In the statistical analysis subsection, it is not clear which estimator was used (i.e., MLR, WLSMV, DWLS). It is recommended to add the estimator and the type of matrices used (polychoric or Pearson).

Authors response: Thank you for your comment, we have now incorporated the estimator information for clarity on page 8 "*Model parameters were estimated with maximum likelihood estimation. This method is applicable when the items analyzed have a minimum of five response options as is the present case in*

this study (Rhemtulla et al., 2012). This allows a simpler factor model to be applied, rather than a more complex one such as those using polychoric correlations and least squares estimators (e.g., WLSMV)."

5. The authors say: "However, the correlation between the factors was high (r=.77)". But they report Pearson's correlation, they should report the latent correlation between the dimensions, where the correct symbol is Phi or Φ.

Authors response: Thank you for bringing this to our attention, we have addressed the issue by correcting the correlation between dimensions using the accurate symbol, on page 9 "*However, correlation between the factors was high (Φ=.77).*"

6. I am concerned that when partial invariance has been found, the total score of the IUS-12M is used as convergent validity, I suggest adding another table showing the correlation scores for each gender and the total. I hope that the correlation values between males and females do not change.

Authors response: Thank you for your feedback, while we don't entirely understand the comment, we hope we have correctly interpreted that the reviewer is asking us to examine the correlations for each gender separately and look at the differences.

Regarding the total scores of the entire sample, the results indicated the IUS-12M strongly correlated with PSWQ-11 and BDI-II, and moderately with the BAI. Similarly, an analysis focused solely on females revealed strong positive correlations with PSWQ-11 and BDI-II, along with a weak to moderate correlation with BAI. Males also demonstrate strong positive correlations between IUS and PSWQ-11 and BDI-II, and moderate correlations with BAI. Therefore, there is a consistent trend of correlations across the entire sample, as well as within gender subgroups, suggesting good convergent validity for the IUS-12M.

Correlations for **IUS-12M Total Scores**:

Measure	1	2	3	4
1. IUS-12M	-			
2. BAI	.439**	-		
3. BDI-II	.582**	.686**	-	
4. PSWQ-11	.685**	.605**	.669**	-

Note. **$p < .01$

Correlations for **IUS-12M Females**:

Measure	1	2	3	4
1. IUS-12M	-			
2. BAI	.328**	-		
3. BDI-II	.545**	.613**	-	
4. PSWQ-11	.618**	.491**	.574**	-

Note. **$p < .01$

Correlations for **IUS-12M Males**:

Measure	1	2	3	4
1. IUS-12M	-			
2. BAI	.519**	-		
3. BDI-II	.574**	.705**	-	
4. PSWQ-11	.734**	.663**	.696**	-

Note. **$p < .01$

7. It would be good to discuss why item 8 in the specific dimension of inhibition has a positive direction, while the rest have a negative direction.

Authors response: Thank you for your suggestion. We have incorporated it on page 10 "*As observed in Figure 1, standardized factor loadings for the general factor were positive, while those for the specific factors negative, except for item 8. may occur due to participants interpreting it differently, as it reflects a slightly distinct aspect of uncertainty compared to the preceding items.*"

8. I suggest adding a subsection on the clinical or public health implications of the study.

Authors response: Thank you for your suggestion. We have incorporated a subsection of clinical implications the importance of highlighting our study on the Discussion section on page 16 "*Clinical implications The findings of this study hold important clinical implications for understanding and addressing intolerance of uncertainty within the Mexican population. The validation of the IUS-12M in this cultural context provides mental health professionals with a valuable instrument for assessing intolerance of uncertainty, a transdiagnostic factor that plays a significant role in the development, maintenance, and treatment of emotional disorders. Furthermore, the identification of a bifactor model provides clinicians with better understanding of intolerance of uncertainty, which can guide targeted interventions for the diverse facets of this construct. Additionally, the IUS-12M holds promise in offering valuable insights for the development of public health policies and programs dedicated to preventing and treating emotional disorders*.".