

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Validity of Center for Epidemiologic Studies Depression (CES-D) Scale in Eritrean Refugees Living in Ethiopia
<b>AUTHORS</b>	Getnet, Berhanie; Alem, Atalay

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Shervin Assari UCLA, US
<b>REVIEW RETURNED</b>	31-Aug-2018

<b>GENERAL COMMENTS</b>	<p>This paper measures the validity of CES-D 20 in Eritrean Refugees who live in Ethiopia. The sample size is larger than 500, and a few measures of PTSD, stress, and social support have been used for validity measure. Application of CFI is appropriate. The results are also interesting. Here are my concerns:</p> <ol style="list-style-type: none"><li>1- The CFI is showing identical statistics for two factor with and without second order common factor, which does not make sense. Even chi square is identical.</li><li>2- So, the authors need to make adjustments to their table, and show us if fit is really better for two factor with second order common factor, compared to two factor without second order common factor.</li><li>3- There is still a need to report each of the fit statistics for males</li><li>4- Does the sample include one or multiple ethnic groups? If individuals differ in that regard, please describe and discuss. Ethnic groups vary in the performance of CES-D.</li><li>5- There is a U.S. and European literature on CES-D factor structure that has not been included in this study. What is the result of U.S. based and European studies that have used CFI to compare performance of CES-D across ethnic or gender groups. How that maps to the results of this study.</li><li>6- Authors need to compare correlations between factors between males and females.</li></ol>
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<b>REVIEWER</b>	Arkun Tatar Fatih Sultan Mehmet Waqf University, Faculty of Literature, Department of Psychology - Turkey
<b>REVIEW RETURNED</b>	18-Sep-2018

<b>GENERAL COMMENTS</b>	- There is too many writing mistake. For example, reference 12 and 27 are same.
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<b>REVIEWER</b>	Annika Sweetland Assistant Professor, Columbia University, USA
<b>REVIEW RETURNED</b>	30-Dec-2018

<b>GENERAL COMMENTS</b>	<p>This is an interesting study that will add to our understanding of how the expression of mental illnesses can vary across cultures which has practical implications for how it is assessed and addressed in novel settings. The study has two aims: 1) to explore the factorial structure of the CES-D in a new and vulnerable population (Eritrean refugees living in Ethiopia) and 2) assess the divergent, convergent and discriminant validity of the CES-D compared to several related instruments assessing PTSD, migration difficulties, social support, sense of coherence, coping, and alcohol use. Whereas the CES-D was originally developed with a 4-factor structure, the authors find that this structure does not fit the data from their sample, which is consistent with other studies conducted among vulnerable non-Western populations. This adds to the literature that suggests that variation in the manifestation of mental illness symptoms must be a consideration when using assessment tools across diverse cultural settings. Whereas I am not qualified to comment on the specific statistical methods employed by the authors, I can comment more generally about the value of this paper, its contribution to the literature, and some weaknesses that would need to be addressed before being suitable for publication. While understandable, the manuscript still requires significant grammatical and stylistic editing to improve its clarity. Below are some more specific comments/suggestions:</p> <ol style="list-style-type: none"> <li>1. Introduction [page 4/line 13 to page 5/line 10]: the paper identifies a number of previous studies that found a different factor structure for the CES-D in diverse vulnerable populations including prisoners, genocide victims, etc, however this could be presented more clearly. That is, the original 4 factor structure appears to have been adequate in some samples, whereas others found a 2-factor structure to be a better fit. In addition to describing these studies, what are some of the theories to account for this variation across populations? Why is it important to study further?</li> <li>2. Methods: There are several places in which the authors include the internal consistency of instruments in the methods section. Each time, the sentences begin with “in the present study...”. These are findings and should be reported in the Results section. There are 5 instances: page 8/line 31; page 8/line 50; page 9/line 8; page 9/line 15; and page 9/line 29.</li> <li>3. Page 9, line 44: Explain what is meant by “to generate ‘etic’ knowledge”</li> <li>4. Page 11, line 48: “(Radloff)” – this reference needs to be reformatted and added</li> <li>5. Results: the order of findings as reported is somewhat confusing. Specifically: <ol style="list-style-type: none"> <li>a. Page 14/lines 4-51. After describing the divergent and convergent validity of the CES-D compared to related instruments, there is an entire section (“In addition, the first-order...”) seems to be referring to the factorial structure CES-D, and nothing to do with the secondary instruments. This should be reported before the divergent and convergent validity (page 13/line 29).</li> </ol> </li> </ol>
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	<p>b. Similarly, page 14/Line 54 “divergent validity” section should also precede the divergent and convergent validity sections (page 13/line 29).</p> <p>6. Discussion: this section could be much clearer once the above is addressed. It would be important to include more specifics about the practical implications of these findings. Given that there is a different factorial structure to the CES-D in this population, it is still okay to use? What are the caveats to doing so and/or authors’ suggestions?</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

This paper measures the validity of CES-D 20 in Eritrean Refugees who live in Ethiopia. The sample size is larger than 500, and a few measures of PTSD, stress, and social support have been used for validity measure. Application of CFI is appropriate. The results are also interesting. Here are my concerns:

Comment-1

1- The CFI is showing identical statistics for two factors with and without second order common factor, which does not make sense. Even chi square is identical.

2- So, the authors need to make adjustments to their table, and show us if fit is really better for two factor with second order common factor, compared to two factor without second order common factor.

Response to comment-1 and 2

The findings show the same statistics for the uncorrelated error terms. But modifications of the two correlated model of CES-D and two factors with second-order common factor model vary in fit indices with the latter showing superior fit. We have now revised the table and clearly showed the comparison in fit indices for each computing models of CES-D.

Comment-3

3- There is still a need to report each of the fit statistics for males

Response to comment-3

Thank you for the comments. We have now made additional analysis on the fit indices for males and females separately.

Comment-4

4- Does the sample include one or multiple ethnic groups? If individuals differ in that regard, please describe and discuss. Ethnic groups vary in the performance of CES-D.

Response to comment-4

Yes, there are about four ethnic groups in the sample. But the majority (92%) comes from Tigriya ethnic group, which reflects the composition of ethnic groups in Eritrea. It is statistically not sounding to compare this 92% with other ethnic groups that constitute only 8% altogether.

Comment-5

5- There is a U.S. and European literature on CES-D factor structure that has not been included in this study. What is the result of U.S. based and European studies that have used CFI to compare performance of CES-D across ethnic or gender groups. How that maps to the results of this study.

Response to comment-5

Thank you for the comments. We have now made additional review of the literature on the psychometric properties and factor structure of CES-D in United States and Europe and have presented our comparative analysis with previous studies based on samples from Western Europe and America.

Comment-6

Authors need to compare correlations between factors between males and females.

Response to comment-6

Thank you again for your comments. Based on your suggestion we ran analysis on the correlation of the latent factors for males and females on a sub-sample separately, and we have presented comparison of these correlations in the revised version.

Reviewer: 2

Comment-1

- There is too many writing mistake. For example, reference 12 and 27 are same.

Response to comment-1

Thank you for your constructive comments. We have now made corrections to the repeated references.

Reviewer: 3

General comment

This is an interesting study that will add to our understanding of how the expression of mental illnesses can vary across cultures which has practical implications for how it is assessed and addressed in novel settings. The study has two aims: 1) to explore the factorial structure of the CES-D in a new and vulnerable population (Eritrean refugees living in Ethiopia) and 2) assess the divergent, convergent and discriminant validity of the CES-D compared to several related instruments assessing PTSD, migration difficulties, social support, sense of coherence, coping, and alcohol use. Whereas the CES-D was originally developed with a 4-factor structure, the authors find that this structure does not fit the data from their sample, which is consistent with other studies conducted among vulnerable non-Western populations. This adds to the literature that suggests that variation in the manifestation of mental illness symptoms must be a consideration when using assessment tools across diverse cultural settings.

Whereas I am not qualified to comment on the specific statistical methods employed by the authors, I can comment more generally about the value of this paper, its contribution to the literature, and some weaknesses that would need to be addressed before being suitable for publication. While understandable, the manuscript still requires significant grammatical and stylistic editing to improve its clarity. Below are some more specific comments/suggestions:

Response to general comment

Thank you for your encouraging words and comments.

Comment-1

1. Introduction [page 4/line 13 to page 5/line 10]: the paper identifies a number of previous studies that found a different factor structure for the CES-D in diverse vulnerable populations including prisoners, genocide victims, etc, however this could be presented more clearly. That is, the original 4 factor structure appears to have been adequate in some samples, whereas others found a 2-factor structure to be a better fit. In addition to describing these studies, what are some of the theories to account for this variation across populations? Why is it important to study further?

Response to Comment-1

Thank you for this comment. Now we have added our justification what theory best stands to explain the variation in factor structure of CES-D as a measure of depression construct across populations and cultures. We have included our major aim why we wanted to conduct this study in an Eritrean refugee community living in Ethiopia in a more concrete manner.

Comment-2

2. Methods: There are several places in which the authors include the internal consistency of instruments in the methods section. Each time, the sentences begin with “in the present study...”. These are findings and should be reported in the Results section. There are 5 instances: page 8/line 31; page 8/line 50; page 9/line 8; page 9/line 15; and page 9/line 29.

Response to Comment-2

As per the suggestion, we have moved the description regarding the psychometric properties of measures to the results section.

Comment-3

3. Page 9, line 44: Explain what is meant by “to generate ‘etic’ knowledge”

Response to Comment-3

Now we have given explanation what we mean by “to generate ‘etic’ knowledge” .

Comment-4

4. Page 11, line 48: “(Radloff)” – this reference needs to be reformatted and added

Response to comment-4

We have considered your suggestion and formatted it with the proper citation.

Comment-5

5. Results: the order of findings as reported is somewhat confusing. Specifically:

a. Page 14/lines 4-51. After describing the divergent and convergent validity of the CES-D compared to related instruments, there is an entire section (“In addition, the first-order...”) seems to be referring to the factorial structure CES-D, and nothing to do with the secondary instruments. This should be reported before the divergent and convergent validity (page 13/line 29).

b. Similarly, page 14/Line 54 “divergent validity” section should also precede the divergent and convergent validity sections (page 13/line 29).

Response to comment-5

Thank you so much for the comments. Now we have restructured our presentations following the suggestion on sections of our result in a consistent manner, arranged the sequence in a way the reviewer has advised us to do.

Comment-6

6. Discussion: this section could be much clearer once the above is addressed. It would be important to include more specifics about the practical implications of these findings. Given that there is a different factorial structure to the CES-D in this population, it is still okay to use? What are the caveats to doing so and/or authors’ suggestions?

Response to comment-6

Thank you for these comments again. The factorial structure of CES-D in the Eritrean refugee population in United States is different from that of Eritrean refugee population in Ethiopia. Although both groups of refugees belonged to Eritrean ethnic group, they differ in exposure variables and traumatizing events, current way of life, cognitive beliefs and practical life and coping styles which could have possibly influenced the way they reacted to psychological distress and symptom expressions. That signifies these two populations are different in some respects. CES-D in this study has demonstrated sufficient psychometric properties including acceptable internal consistency, item loadings, divergent and convergent validity, and acceptable content validity. However, it differs in factor structure as an indicator of its symptom presentation because CES-D fitted well onto a two higher order factor structure, unlike the study in United States, which is consistent with reports of symptom presentation of depression as measured by this tool in most non-western populations. The present findings suggested that depression can be measured sufficiently by CES-D, but symptom manifestation of the depression construct vary as measured by this tool and presented it in the form of two dimensions ( i.e. depression affect and positive affect) instead of the four factor structures (i.e. depressive affect, somatic vegetative, interpersonal problem, and positive affect) measure for Eritrean refugees living in the United States.

#### VERSION 2 – REVIEW

<b>REVIEWER</b>	Shervin Assari University of Michigan, US
<b>REVIEW RETURNED</b>	02-Mar-2019

<b>GENERAL COMMENTS</b>	I think the revision is satisfactory. This includes the responses to my concerns and changes in the body of the paper.
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