Author’s response to reviews

Title: Psychometric properties of the Chinese version of the Spiritual Care-Giving Scale (CSCGS) in nursing practice

Authors:

Yanli Hu (huyanli1212@126.com)
Lay Hwa Tiew (nurtlh@nus.edu.sg)
Fan Li (lifan@jlu.edu.cn;870813123@qq.com)

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Author’s response to reviews:

BMRM-D-18-00274R1, entitled "Psychometric properties of the Chinese version of the Spiritual Care-Giving Scale (C-SCGS) in nursing practice"

Dear Alden Gross and Katerina Marcoulides,

Thank you very much for your precious comments and suggestions.

According to the comments and suggestions, we have revised the relevant part in the manuscript to be submitted once more. We also responded point-by-point to the comments of the editor and reviewers as listed below, all changes are marked in red in the revised version of the manuscript.

Thank you very much for your considering our manuscript for publication. We are looking forward to hearing from you soon.

With kindest regards,

Yanli Hu, Lay Hwa Tiew, Fan Li

Technical Comments:

Editor Comments:
Reviewer reports:
Katerina Marcoulides (Reviewer 1): The authors have clearly worked hard to address the concerns raised with the previous version of this manuscript. Just a few issues that need to be addressed in a revision remain. Specifically, the following need attention:

1. On page 5, lines 89-91, it is indicated that the sample size was adequate according to the guidelines of 5-10 participants per item. This is in fact only a very crude guideline that cannot be relied on as it does not take into account the complexity of the model, the distributional characteristics of the data, missing data, or the reliability of the scales. For this purpose, the methods introduced by Muthen and Muthen (2002) need to be used to assess the adequacy of the sample claimed in this study.

2. On page 8, line 158, it is indicated that an item with a CVI (content validity of item) above .8 can be considered valid. While this index may be popular in nursing research, it is not commonly accepted in the general psychometric literature as it provides little validity information. Content validity refers to the degree to which instrument's components adequately represent a construct of interest. Content validity in just a conceptual test or a qualitative type of validity declaration that cannot really be quantified (Crocker & Algina, 1986). The commonly reported CVI is based on ratings of item relevance by content experts. It is generally computed by dividing the number of expert judges issuing a rating of 3 or 4 on the corresponding Likert scale by the total number of judges. However, if other content experts are used, if a different number of experts are used, or if a different rating is used, then these reported values may change significantly. As this study was intended to validate the factor structure of an existing and well-established scale, these controversial details are not really informative or needed.

3. On page 11, line 207, it is indicated that the "...scale's internal consistency and homogeneity were assessed by Cronbach's alpha". This statement should be referring to the internal consistency of the subscales, given that as indicated in my previous review, "reporting a total Cronbach's alpha does not make sense when the scale is multidimensional".

4. On page 13, line 260, it is indicated that "the internal consistency analysis of the 35 items showed that the mean values range from 4.47 ... to 5.25". What does this mean? Internal consistency is a measure that ranges from 0 to 1, so it is not clear what exactly these reported values are referring to in the study. Also, Table 2 provides the factor loadings, so I'm not sure why it is being referenced here.

5. On page 15, lines 302-305, the goodness of fit criteria that are reported are suggesting poor model fit (GFI = .83, TLI = .80). Only the CFI = .93 is suggesting adequate fit and this reported value does not actually make sense. All fit criteria commonly reported in CFA and SEM type analyses are based on an evaluation of a discrepancy function (i.e., the difference between the sample implied covariance matrix and the model implied covariance matrix). While all fit criteria are not expected to provide identical fit values, as each considers the discrepancy function from a slightly different perspective, computed fit
values would not normally fluctuate to the same degree as those reported in this study.

6. (Minor issue) On page 18, line 350, the name of the reviewer is given in the main body of the manuscript. This is not common in scholarly articles and should either be removed or given in a footnote.

References


Response to Katerina Marcoulides (Reviewer 1):

1. On page 5, lines 89-91, it is indicated that the sample size was adequate according to the guidelines of 5-10 participants per item. This is in fact only a very crude guideline that cannot be relied on as it does not take into account the complexity of the model, the distributional characteristics of the data, missing data, or the reliability of the scales. For this purpose, the methods introduced by Muthén and Muthen (2002) need to be used to assess the adequacy of the sample claimed in this study.

Response to Dr. Katerina Marcoulides comment No.1: First, thank you very much for your encouragement. Second, thanks for your precious suggestions. As you say, "the guidelines of 5-10 participants per item is in fact only a very crude guideline that cannot be relied on" although we're used to using it to calculate the sample size. Thank you for pointing out this for us, and we will pay more attention to this problem in future studies. Taking into account the complexity of the five-factor model, the normal distributional characteristics of the data, the high reliability of the scale, and there will be no missing data because we set all questions as required in the data collection tool of SO JUMP in advance, otherwise the questionnaire cannot be submitted, the sample size required for this study was re-calculated by formula and it was approximately 197 (U1-a, 1.96; S, 0.98; d, 0.15; taking into account the 20 percent loss rate.). So the number of 400 participants in the current study was adequate according to Muthén L K and Muthén B Os.


We made revisions in our manuscript (Method section, line 99, page 5) as following (marked in red):

Methods

Study design and participants

Nurses were recruited from three university-affiliated comprehensive hospitals, two cancer centers, one psychiatric hospital, and two traditional Chinese medicine hospitals to complete this cross-sectional study. Nurses who were reluctant to participate in the study were excluded. A convenience sample of 400 nurses was recruited, which was adequate for exploratory factor analysis (EFA) according to the guideline of Monte Carlo study decision on sample size[23].

2. On page 8, line 158, it is indicated that an item with a CVI (content validity of item) above .8 can be considered valid. While this index may be popular in nursing research, it is not commonly accepted in the general psychometric literature as it provides little validity information. Content validity refers to the degree to which instrument's components adequately represent a construct of interest. Content validity in just a conceptual test or a qualitative type of validity declaration that cannot really be quantified (Crocker & Algina, 1986). The commonly reported CVI is based on ratings of item relevance by content experts. It is generally computed by dividing the number of expert judges issuing a rating of 3 or 4 on the corresponding Likert scale by the total number of judges. However, if other content experts are used, if a different number of experts are used, or if a different rating is used, then these reported values may change significantly. As this study was intended to validate the factor structure of an existing and well-established scale, these controversial details are not really informative or needed.

Response to Dr. Katerina Marcoulides comment No.2: Thanks for your valuable questions. We have deleted this part of unnecessary content in the original manuscript according to your suggestions (Method section, line 164, page 9).

3. On page 11, line 207, it is indicated that the "...scale's internal consistency and homogeneity were assessed by Cronbach's alpha". This statement should be referring to the internal consistency of the subscales, given that as indicated in my previous review, "reporting a total Cronbach's alpha does not make sense when the scale is multidimensional".

Response to Dr. Katerina Marcoulides comment No.3: Thank you for your kind reminding. This mistake is due to our negligence. We have modified it to as "every subscale's internal consistency and homogeneity was assessed by Cronbach's alpha" (Methods section, line 210, page 11) as following (marked in red).

Methods

Statistical analysis

Statistical analyses were performed using SPSS 17.0 for Windows. Categorical variables were expressed as frequencies and percentages. Continuous variables were presented as the mean ± standard
deviation (SD) if the distribution was normal. Every subscale's internal consistency and homogeneity was assessed by Cronbach's alpha. Concurrent validity was assessed by the Pearson correlation coefficient between SCGS and SCCS. Item analysis was performed using the following analyses: (a) item analysis, (b) corrected item-total correlation, (c) factor loading, (d) Cronbach’s alpha if an item was deleted, (e) extreme group comparison, and (f) communities. Items that had a criterial value (CR) < 3.0, a corrected item-total correlation < 0.30, factor loading < 0.40, community < 0.20 and whose deletion caused an increase of 0.5 or more in the alpha coefficient for the overall scale were excluded.

4. On page 13, line 260, it is indicated that "the internal consistency analysis of the 35 items showed that the mean values range from 4.47 … to 5.25". What does this mean? Internal consistency is a measure that ranges from 0 to 1, so it is not clear what exactly these reported values are referring to in the study. Also, Table 2 provides the factor loadings, so I'm not sure why it is being referenced here.

Response to Dr. Katerina Marcoulides comment No.4: Thanks for your questions. Sorry, we misstated this sentence. What we meant “the values range from 4.47 … to 5.25” was the average item mean value on the SCGS. However, as you say, this was not related to the internal consistency analysis of the SCGS and it was not necessary. So we we deleted this sentence from the manuscript (Results section, line 263, page 14)

5. On page 15, lines 302-305, the goodness of fit criteria that are reported are suggesting poor model fit (GFI = .83, TLI = .80). Only the CFI = .93 is suggesting adequate fit and this reported value does not actually make sense. All fit criteria commonly reported in CFA and SEM type analyses are based on an evaluation of a discrepancy function (i.e., the difference between the sample implied covariance matrix and the model implied covariance matrix). While all fit criteria are not expected to provide identical fit values, as each considers the discrepancy function from a slightly different perspective, computed fit values would not normally fluctuate to the same degree as those reported in this study.

Response to Dr. Katerina Marcoulides comment No.5: Thanks for your valuable questions. We redid the CFA and found that we did make a mistake when we copied the data to the manuscript and did not check it carefully. We have modified this important part in our original manuscript (Results section, line 305, page16) as following (marked in red) according to your suggestion.

Results

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Psychometric analyses
The four-factor model was also chosen to conduct confirmatory factor analysis using another data set from a sample of 351 nurses. The present model provides an acceptable fit to the data (CMIN/DF = 2.14; root mean square error of approximation, RMSEA = 0.06; goodness-of-fit index, GFI = 0.88; incremental fit index, IFI = 0.92; adjusted goodness-of-fit index, TLI = 0.91; comparative fit index, CFI = 0.92; An additional figure file shows this in more detail [see Additional file 4 ].)

6. (Minor issue) On page 18, line 350, the name of the reviewer is given in the main body of the manuscript. This is not common in scholarly articles and should either be removed or given in a footnote.

Response to Dr. Katerina Marcoulides comment No.5: Thanks for your kind advice. We have removed the name of the reviewer in the main body of the manuscript (Results section, line 352, page18).
Finally, thanks again for your precious comments. We tried our best to improve the manuscript and made some changes in the manuscript. And here we have list some changes and marked in red in revised paper. We appreciate for Editors/Reviews’ warm work earnestly, and hope that the correction will meet with approval.

Thank you again for the possibility of accepting and publishing our manuscript, which is very important to us. Because we're going to use scales C-SCGS and C-SCCS (the translated scale mentioned in another manuscript we have submitted) in the next couple of studies. Thank you for your earnest and careful review, from which we have a better grasp of similar research methods and matters needing attention. This is very meaningful for our research.

Best regards,

Yanli Hu, Lay Hwa Tiew, Fan Li