**Reviewer’s report**

**Title:** Psychometric properties of the Geriatric Quality of Life-Dementia in older adults with dementia or mild cognitive impairment living in nursing homes

**Version:** 0  **Date:** 02 Jul 2019

**Reviewer:** Laura Hughes

**Reviewer's report:**

Overall I feel this is an interesting paper and there appears to be a need for a dementia specific QoL instrument for use in care homes in Korea. I have some queries and suggestions however.

Abstract

Please state the full name of exploratory and confirmatory factor analysis before the abbreviation. This may be confusing for people without experience of validity analyses.

Background

The background provides sufficient detail of the different types of instruments available for measuring QoL and provides some rationale for the need for sufficient assessment of the properties of instruments for different settings (e.g. care homes). However, the background would benefit by addressing the points outlined below.

I find the claim on page 5 lines 6 - 13 that there is limited data of measures from performing factor analyses, particularly for the QOL-AD, to be incorrect. There is sufficient evidence of the construct validity of most available measures, particularly for the QOL-AD, as one of the most widely used dementia specific QoL measures. I suggest the authors rewrite this with a more measured argument. Similarly, for lines 30 - 38, there is evidence in the literature of the psychometric properties of instruments when used for people with dementia living in care homes. There are two systematic reviews available on this specific topic (Hughes, Farina, Page, Tabet, & Banerjee, 2019; Aspden, Bradshaw, Playford, & Riazi, 2014).

Page 3, line 21, remove 'the' before QOL.

Page 5 line 57 - page 6 line 4. This sentence does not make sense.
Method

The participants section contains results about sample characteristics, these should be moved to the results section.

The method section should include the type of sample (e.g. care home residents) and where they were recruited from. This is currently included in the procedure section, I suggest the authors move this information to the participant section.

Could the authors provide more information about the GQOL-D instrument in the measure section, such as the factor structure and names of factors of the GQOL-D from the original development?

The first sentence of the procedures section does not make much sense, I would ask the authors to expand on this and clearly state the design of the study.

The procedure section states that cross-sectional data was collected from the Behavioural and Psychological Symptoms of Dementia Patient Project. Could the authors state more fully what this is and how it related to this study?

It is stated that the K-MMSE or MMSE-K score was obtained from patient records in the home, how have the authors ensured that the scores are up to date? Presumably the facilities do not carry out these assessments on a frequent basis. If this is the case, there is a risk that patients with a score of 10 or higher at the time of K-MMSE or MMSE-K assessment may have a lower score at the time of taking part in the study. Could the authors address this issue?

Page 8, line 40 - 'index' should be 'indices' as it is plural.

The use of Eigenvalues alone to determine the number of factors is unusual and insufficient. Normally the scree plot is also used by looking for the point of inflection in the plot to determine the potential number of factors to retain. Could the authors confirm whether or not the scree plot or another method was used for determining this? If the scree plot or alternative method was not used I would recommend the authors run the EFA again and consult the scree plot to ensure that the number of factors they have retained are appropriate.

One fundamental problem with the methods used in the study is that EFA and CFA has been performed on the same sample. Generally it is argued that that these should be performed on separate representative samples; if you try to verify the factors discovered with EFA using the same data, CFA results will most likely give good fit indices because the same data will tend to confirm to the structure of the scale which is discovered with EFA. Could the authors provide a rationale for using the same sample for both the EFA and CFA? Please also ensure that this is discussed in the discussion and limitations section of the manuscript.
Discussion

Overall the discussion attempts to discuss the findings on relation to the literature. There are however some issues such as repetition. I have highlighted some areas and suggested changes below.

I recommend that the authors move the characteristics of participants to the beginning of the results section.

Page 12, lines 13-18. This sentence needs rewritten as it does not make sense grammatically. The authors should also try to more fully explain their point here about QoL being conceptualized differently between groups.

Page 12, lines 18-23 - this is a repetition of what was stated a few sentences above (lines 1-4).

The first paragraph of page 13 seems out place and not necessarily needed. As there is a repetition of Lawton's definition of QoL (lines 1-4), there is a restating of the items in each factor (lines 10-18) that add nothing to the discussion. In addition, the statement that "QoL assessment is defined as a multidimensional evaluation of the person-environment system of the individual in terms of patient's adaptation to the perceived consequences of dementia" is only one of many definitions of how QoL is assessed. I would suggest that the author highlight this.

Some of the statements made by the authors need rewording to ensure that the meaning is conveyed correctly. An example of this is page 13, lines 21-24. The authors state that "QoL in nursing homes were affected by the environmental factors such as care provider attitude and communication with staff". The way this is written implies that the findings of the study showed this. I recommend the authors reword this to state that "it has been shown that environmental factors such as…" This clearly shows that the authors are referring to the literature and not their own results. I would recommend a rereading of the manuscript to ensure there are no other instances of this.

Typographical errors:

I would recommend a thorough re-reading of the manuscript to ensure that any grammatical inconsistencies are corrected. For example, sometimes "the QoL" is used whereas other times "QoL" is used.

Page 4: lines 8-9 patient's environment is stated twice.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
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No

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I am able to assess the statistics

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