Reviewer's report

Title: Validation of a modified version of the Spanish Geriatric Oral Health Assessment Index (GOHAI-SP) for adults and elder people

Version: 0 Date: 15 Dec 2019

Reviewer: Mariana Seoane

Reviewer's report:

General comments

Evaluating OHRQoL with validated and cultural adapted instruments is an issue of interest.

It could be very useful to include the Spanish version in the manuscript. This is a study which have very good implication for Latin-American research, includes linguistic modification and "colloquial" terms, this is why it is necessary to read it in the Spanish version. If it possible, with the two versions, the original and the new one.

Some specifications are included in the following.

Background

1. Paragraph one could introduce some clarification (in red) to be more precise as Atshinson and Dolan proposed: "with 3 dimensions, physical *function*, psychosocial *function* and pain *or discomfort*". … I recommend to use the same criteria for chapter: "The GOHAI questionnaire"

2. Target population is "older people", nevertheless, the study includes subjects of 55-70 years old. Is it correct to say they are "older people"?

3. The argumentation that justify the study include that psychometric validation has not been performed since 1999. Further, authors mention only one study that validates the measure into Spanish language (reference 5). Pinzón-Pulido SA, Gil-Montoja JA. Validación del Índice de Valoración de Salud Oral en Geriatría en una población geriátrica institucionalizada de Granada. Rev Esp Geriatría Gerontol. 199916:34:273-82. Nonetheless, Sánchez-García S. et al, did validate the psychometric properties of GOHAI in Mexican population, and authors include this reference later. For this reason, it is not accurate to establish that "the psychometric properties of the index have not been reviewed" I think, authors wanted to say that no revision of the original version in terms of linguistic adaptation have been performed. Even more, results of Sánchez-García et al (2010) could have been used in this manuscript for discussion, since internal consistency was better (0.61 for Sánchez-García, authors 0.87)
Methods. In general methods are well presented. Nevertheless, some aspects should be addressed for better understanding and more accurate analysis.

1. Why did the authors establish this eligible criterion?

   a. "at least 3 of the diagnostic criteria for metabolic syndrome [21] were eligible to participate in the study"

   b. Authors used three different population: 1) for an initial focal study; 2) for a second focal study "to be performed after modifications of the GOHAI-SP" and 3) a sample for psychometric analyses of the 'new instrument' "In addition, a sample of participants was selected for the validation of the modified GOHAI-SP.". The first two, were voluntaries. Later, the authors explain that the third group was established by a random process. Nonetheless, they incorporated the subjects of the other two. Why the authors made that decision? If randomization was possible, why authors decided to include people who were part of the discussion of the instrument, and they knew it in depth? All voluntaries participated in this process of validation (40?) they were 40 of 96 or, they were 96 + 40?

For focus group,

1. There is no mention of the criteria used for selection of participant. Only voluntaries? Was there any exclusion? Women and men together? Only one FG could reduce variability which is necessary for saturation.

2. Second FG were performed "to evaluate the linguistic modifications to the questionnaire". Were they the same population?

Results

1. Authors mention at results Qualitative focus group study. But, essentially, it is not a qualitative study, it is a verification of comprehension using focus group. If this is a qualitative FG study, method should be reviewed, incorporating bibliographic references, techniques used, and saturation and variability concerns, among others.

2. Assessment of the GOHAI-SPM. Authors mention that "Explanations by the administrator were not necessary for the participants to understand the questionnaire and answer it correctly". What do you mean by "correctly"? Is it with no problem of comprehension? When a subjective measure is correctly answered?

3. "Participants with 13 or more teeth had better ADD-GOHAI scores than those with fewer than 12 teeth. The differences were significant". Why the authors decided this cutting point? For functional occlusion, 20 teeth are frequently used.
Discussion

1. In this chapter, authors should include an explanation or justification for sample selection, for example, the inclusion of participant of FG into the random sample, the mention of older people when the age range is wider.

2. There were minor modification which doesn’t seem to be culturally influenced. Could be mostly a problem of colloquial expression than a cultural-linguistic adaptation?

3. "Although the GOHAI questionnaire was validated decades ago, few studies have considered revisiting it before applying it to studying a population". In this part of discussion, the study of Sánchez-García et al should be incorporated since some psychometric results are different and other are the same and, because of some originality in this manuscript that Sánchez-García et al didn’t have. Later, in paragraph 5 of discussion, an allusion of "other study" is presented, but considering the justification incorporated in the discussion, more analyses could be done from both studies. Otherwise, originality of this study could not be seen.

4. "The participants in this study stated that the questions of the questionnaire after their revision and linguistic update were easier to understand." Did the authors show to the same subjects, the new version of the instrument (FG1 and FG2)? In methods, it seems that two different group pf subjects participated in FG.

Conclusion

"The new version of the GOHAI-SP has adequate psychometric properties and can be used as a useful tool for evaluating OHQoL in the elderly population. The use of this more modern version has advantages in the clinical application of the questionnaire". Is it correct to stablish this is a new version? Table 1 called it a "modified version" which seems to be a more appropriated term.

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?
If not, please explain in your comments to the authors.

Yes
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review? If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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