

Some problems with determining the reliability of the EQ-5D-3L: commentary to “Value of EQ-5D in Mexican city older population with and without dementia (SADEMstudy)”

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Key words: EQ-5D; reliability; Cronbach’s alpha; methodology

In a paper published in the *International Journal of Geriatric Psychiatry* (Sanchez-Arenas et al. 2014), Sanchez-Arenas et al. concern themselves with the reliability of the EQ-5D-3L, which they refer to solely as the EQ-5D. They investigate both the reliability of the five single dimensions and the reliability of the whole instrument. Sanchez-Arenas et al. report that they have determined the reliability for the five single dimensions using Cronbach's alpha. This approach is mathematically impossible. Cronbach's alpha can only be computed for scales that consist of at least two items. However, each dimension of the EQ-5D-3L is measured with exactly one item. So, with the description given by the authors, it is completely unclear how the authors have actually produced the numbers they report. Therefore, in further research, these numbers should not be used as estimates for the reliability of the single dimensions of the EQ-5D-3L.

Sanchez-Arenas et al. do not report how they have determined the reliability for the whole measurement instrument. However, considering that there is obviously only one measurement point, they cannot have applied the test–retest approach. Then, the only approach that they might have applied is computing Cronbach's alpha for the five items of the instrument. As elaborated elsewhere (Konerding, 2013), this approach is not appropriate for measurement instruments such as the EQ-5D-3L. Cronbach's alpha only provides an estimate of reliability if the measurement instrument is one-dimensional. Otherwise, the estimation of the reliability is an underestimation. Each of the five items of the EQ-5D-3L, however, refers to a different dimension. So, for this instrument, Cronbach's alpha will be lower than the actual reliability. Therefore, in further research, the number reported by Sanchez-Arenas et al. should not be used as an estimate for the reliability of the EQ-5D-3L.

Conflict of interest

None declared.

References

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