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COMMENTARY

Is the Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) a unidimensional or bidimensional instrument?

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The Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) is among the most frequently used outcome measures in psychiatry research [1]. It is a generic, self-reported QOL measure assessing the physical health, subjective feelings, leisure activities, social relationships, general activities, satisfaction with medications and life-satisfaction domains. The Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF) was developed as an index from the original, long form, fully representing its concept [1, 2]. In the most recent psychometric study, the Chinese version of the Q-LES-Q-SF was evaluated [3]. The authors approached its validity in one new way—studying factorial structure using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). This approach resulted in one interesting finding that the measure has psychosocial and physical dimensions. However, this finding could be biased.

First, it is not clear why the authors decided to study the factorial structure of this index measure. Although not clearly stated, they were looking for possible underlying dimensions. However, the authors used principal component analysis (PCA) with varimax rotation for EFA, which is wrong, because PCA is not the method of choice if one wants to discover underlying factors or dimensions [4]. The right method is principal axis factoring, for example, which is essentially factor analysis (FA) [4]. If the goal is data reduction, PCA is more appropriate. In PCA, all variance of observed variables (shared; unique; and error) is analyzed, while in FA only shared variance is analyzed. Thus, PCA yields components and FA gives factors. Nevertheless, it is generally accepted that the difference between FA and PCA decreases when the number of variables and the magnitude of the factor loadings increase [5]. To consider this notion in this particular situation, the authors need to show all item loadings and not only those above 0.4 for the two factors, because some items might cross-load on two factors. Finally, two components were extracted together accounting for 46.47 % of the variance, with the "psychosocial dimension" explaining 37.41 % and the "physical dimension" explaining 9.07 %. The literature varies on how much variance should be explained before the number of components is sufficient, but the majority suggest that the proportion of variance for each extracted component should be 5–10 % as long as the cumulative proportion of variance explained is 70–90 %, although some indicate as little as 50 % of the variance explained is acceptable [6, 7].

Second, the authors used CFA to confirm the bidirectional model they found in the PCA step. It is not clear why the original unidimensional model of 14 items was not tested. The original model might be similar to the bidimensional in terms of data fit, and a statistical approach needs to be taken to decide which one is better. Additionally, these fit indexes were included: included goodness-of-fit index (GFI), adjusted GFI, and the root of the mean square residual. The Tucker Lewis index, Comparative Fit index and root mean square error of approximation were not given, but they are standard nowadays [8].

I advise authors to share with us additional data in order to justify that the Q-LES-Q-SF is a bidimensional instrument.

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