

Assessing quality of life using structural equation modeling

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In many studies, quality of life (QOL) of a patient is calculated as the (weighted) sum of items without assessment of the relationships between items and the derived latent QOL. Then, multiple regressions analysis are usually applied to evaluate the effects of various factors on the latent QOL.

The aim of this study was to describe how structural equation modeling should be applied to analyse appropriately such common QOL issue.

As an illustration, those methods were applied to data from 4155 subjects participated in 2012 in a community based sample study in the French speaking part of Belgium. Volunteer participants were invited to complete a web-based questionnaire on their weight-related experience. The latent QOL was derived and direct and indirect effects of body mass index (BMI), body image discrepancy (BID), latent socio-economic (SOCIO) and latent subjective-norm (SN) variables were tested. Modeling was performed using the weighted least squares means and variance (WLSMV) estimator due to the presence of ordinal endogenous variables. The fit of models was analysed by χ^2 test, root mean square error of approximation (RMSEA), comparative fit index (CFI), standardized root mean square residual (SRMR) and Tucker-Lewis index (TLI).

Results showed that physical dimension of QOL could be measured by 7 ordinal items and psychosocial dimension by 6 ordinal items (CFI = 0.98; TLI = 0.97; RMSEA = 0.051; SRMR = 0.050). Significant direct and indirect effects on each dimension of QOL were found for BMI and SOCIO, significant direct effects for BID and SN ($p < 0.0001$).