Assessing response shift in health related quality of life measures when formative indicators are employed

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Aims

In assessing the change in time of patients' perceived Health related quality of life (HRQoL), measures may be biased by the occurrence of Response Shift (RS), i.e. a change in the meaning of one's self evaluation of the target construct. RS has been typically evaluated employing HRQoL constructs measured with reflective (effect) indicators, i.e. observed variables whose scores are a manifestation of the individual score on the latent HRQoL variable.
The aim of the study is to propose a method for assessing the occurrence of RS when the construct is defined in term of formative (causal) indicators, i.e. observed variables that determine the meaning of the construct instead of reflecting it.

Method

A sample of colorectal cancer patients recruited after diagnosis fulfilled the EORTC QLQ-C30 questionnaire. Inspired by the Boehmer and Luszczynska model (2006), functional, emotional, social and quality of life scales were used to compute three reflective indicators and the Pain and Fatigue scales were used as formative indicators. Structural equation models (SEM) were at first applied to evaluate RS of the reflective indicators according to the Oort's procedure (2005), and then to evaluate RS of the formative indicators, following the procedure described by Diamantopoulos and Papadopoulos (2010).

Results

Sample was composed by 258 patients who completed the 6-month follow-up, 53.9% of them received a chemotherapy treatment. There were not RS on reflective indicators ($\chi^2(7)=12.52$, $p=.085$). Two models with and without constrains on the slopes of the formative indicators and on the residual variances of the latent variables were estimated. Both models showed good RMSEA, CFI and SRMR fit indices and Pain and Fatigue slopes were statistically significant. The difference χ^2 test was not statistically significant ($\chi^2(3)=3.71$, $p=0.295$), excluding the presence of a response shift also for the Pain and Fatigue indicators.

Conclusion

In the present sample, no RS occurred in the HRQoL formative measures defined in term of Pain and Fatigue. The reason could be the short follow-up time and the heterogeneity of the sample in term of treatment. A further analysis will assess the presence of RF splitting the sample in more homogeneous subsamples.