Do Older Hospital Patients Consider Anchor Points on the EQ-5D Health Thermometer Visual Analogue Scale?

Introduction

The use of health-related quality of life (HRQoL) as an outcome measure has become increasingly popular in clinical practice and health research. It has been utilised as a way to holistically assess the benefit of health interventions and conduct economic analyses.1-4

This is typically done with comparisons of longitudinal repeated measures obtained using a standardised health-related quality of life instrument such as the Euroqol-5D (EQ-5D5). However, the response shift phenomenon threatens to invalidate comparison of HRQoL scores taken at different time-points.6-8

Response shift has been defined as a change in ones internal values relating to the construct of HRQoL and is comprised of three components; reconceptualisation, reprioritisation and recalibration.6,7,9

Reconceptualisation is a change in the domains or components of which a person considers HRQoL to be comprised of. Reprioritisation is a change in ones preferences regarding the relative importance of each domain or component of HRQoL.

Recalibration is a change in the internal scale a person uses to rate their HRQoL.

Response shift is generally believed to occur over time, and as such may invalidate comparisons of HRQoL scores taken at different time points because each measure may not be measuring the same concept with the same priorities using the same internal scaling.6-8

We hypothesise that a substantial contributor to response shift occurring between measurements taken at two or more time points may be variability in the consideration given to the broad scope of possible health states and what it would really be like to experience extremely good or bad health when completing HRQoL instruments.

From the example in Figure 1 it can be seen that the variability in the consideration given to a HRQoL evaluation may unnecessarily add to the problem of response shift due to a combination of new health domains considered (reconceptualisation) and a change in priorities (reprioritisation).
Though not explicit, it is likely some recalibration would have also occurred. In this example it can be seen that a 30 point improvement in HRQoL score resulted.

This is not a true representation of the absence of change in the patients underlying health state or the effectiveness of the intervention.

To test the hypothesis that substantial variability exists in the consideration of extreme health states during evaluation of HRQoL, this paper reports on elderly patients’ consideration of the anchor points on the EQ-5D VAS and the number of elderly patients who changed their HRQoL score after being provided with broad descriptors of a very good and bad health state.

**Method**

**Participants, setting and procedure**

Sub-acute older hospital patients in Brisbane, Australia, undergoing rehabilitation (n=151) who had Mini-Mental State Examination (MMSE)\(^5\) scores greater than 23/30 were invited to take part in the study.

Consenting patients completed survey interviews which included the EQ-5D then a series of questions investigating whether they had considered the best or worst health states (VAS anchors) before responding.

Details of any good or bad health states they had considered relating to the anchors on the VAS were recorded verbatim.

All participants were then provided with broad descriptors (read aloud by the interviewer) of a very good and bad health state (in random order); after the descriptors of one health state were given patients were advised they could either keep their original health state VAS response or change their answer, the same was repeated after the remaining health state descriptors were given.

The good and bad health state descriptors were those from the Assessment of Quality of Life (AQoL)\(^{10}\) instrument.

**Analysis**

Components of the verbatim descriptions of the health states people considered when initially evaluating their HRQoL were separated into categories which they related to, such as pain, physical mobility, ability to communicate etc.

For consistency with the health descriptors provided, the categories used were the same as each question in the AQoL.\(^{10}\) The number of patients who had not considered the anchor health states were also counted. The number of patients who changed their HRQoL scores after the broad descriptors were given was calculated by subtracting their final VAS score from their initial VAS score.
Results
The mean (standard deviation) age for participants was 79 (8.5) years and 89 (59%) were female. The mean (standard deviation) MMSE score was 27 (2) out of 30. Overall 96 (64%) of participants reported they had not specifically considered the anchor points on the EQ-5D VAS.

The descriptions given by participants who did consider a very good or very bad health state most commonly contained aspects of physical mobility (45 participants), pain (35 participants) and household tasks (22 participants).

Being provided with broad health state descriptors caused most patients to change their response. After receiving a description of bad and good health states most patients moved their VAS response higher and lower respectively, however some patients did also move their responses in the opposite direction.

After both anchor descriptions were completed 107/151 (71%) of patients VAS report of their current health state differed from their initial report.

Conclusion
Many elderly hospital patients did not give much thought to the variety of components which can make up health-related quality of life. This study has demonstrated that patient perceived health-related quality of life measurement can be acutely influenced by provision of detailed health descriptors for patients to consider.

This finding may have implications for reducing the effect of response shift on measurements taken at different time points by causing patients to give more consideration to their responses on each occasion when HRQoL is reported.

Wide extrapolation of these findings is limited by all participants being hospitalized older adults. The effect of providing detailed extreme health state descriptors to younger populations is worthy of investigation along with investigations of alternative descriptors.

However, the most important future research direction would be the examination of the direct effect of the provision of broad HRQoL descriptors on response shift over time.
References


Figure 1. An example of how variable consideration of health states can contribute to response shift

*Pre-intervention assessment*

- Osteoarthritis makes recreation activities difficult
- I’m able to complete all home duties independently

**EQ-5D VAS**

- 40 / 100

*1 week post-intervention assessment*

- I’m able to complete all home duties independently
- I have no problem with vision and hearing
- I have no problems with washing, dressing and toileting
- Osteoarthritis makes recreation activities difficult
- I have good psychological well being

**EQ-5D VAS**

- 70 / 100

Receives health intervention at a hospital where he comes into contact with patients who are in very poor health states. There is no significant change in underlying condition 1 week later.