# Response Shift in People Awaiting Spine Surgery: Investigating Quality of Life Using Mixed Methods

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## AIMS

- Aristotle recognized that people in similar health states may report very different levels of quality-of-life (QOL) if they appraise differently.
- Currently used QOL measures assume that people use similar criteria for assessing QOL, however a growing evidence base suggests individual differences in appraisal, affect our ability to predict/explain individual differences in QOL.

### THE QOL APPRAISAL PROFILE

- Uses open-ended (qualitative) and close-ended items to assess the following cognitive processes underlying individual answers to QOL questionnaires:

(1) frame of reference
(2) experience sampling
(3) standards of comparison
(4) combinatory algorithm

From Rapkin & Schwartz, 2004

- This study investigates the structure of the QOL Appraisal Profile and its relationship with standard patient-reported outcome (PRO) scales used in spinal surgery.

## STUDY SAMPLE

- N = 199
- Mean age = 54.7
- Gender: 60% females
- 67% married
- 33% employed
- 6% on worker's compensation

## METHODS

**Design:** Cross-sectional study using (baseline) pre-operative data

**Sample and Measures:** People awaiting lumbar spine surgery completed the following patient-reported outcome scales:

-Rand Short-Form-36
-Oswestry Disability Index (ODI)
-PROMIS Pain Impact Short-Form
-The QOL Appraisal Profile

**Analysis:**

- Correlations among PRO scales ascertained and construct overlap.
- Open-ended text from the QOL Appraisal Profile were coded by at least 2 raters (mean Kappa=0.62).
- Data reduction was done using Principal Components Analysis with 1000 Monte Carlo replications to avoid capitalizing on random error (Watkins, 2010). This yielded an eigenvalue threshold for retention.
- Computed inter-correlations among outcome measures to ascertain construct overlap.

## DATA REDUCTION

- **QOL Contingent True Score at time $t = F(\{FR\}_t, E_t, S_t, C_t)$**
- **$\{FR\}_t$ – Frame of Reference**
  - 4 codes on the meaning of QOL:
    - *Problems/ Circumstances;*
    - *Contribution/Family/Friends;*
    - *Positive Attitude/Contentment;*
    - *Independence/Health*
  - 4 goal codes:
    - *Interpersonal Goals;*
    - *Health- and Orthopedic-related Problem resolution;*
    - *Leisure/Independence/Travel/Living Situation;*
    - *Accomplishment/Altruism/Acceptance/*
- **$E_t$ – Experience Sampling**
  - 3 principal components:
    - *Challenging experiences*
    - *1st reaction / Doctor Told / Not Complaining / Future*
    - *Recent Concerns / Relevant / Balanced*
- **$S_t$ - Standards of Comparison**
  - 1 principal component
- **$C_t$ – Combinatory Algorithm**
  - 4 principal components
    - *Positive*
    - *Big Problems/Outside of Control*
    - *Difficulties*
    - *Self*
- **Components were orthogonal, and explained ~50% of the variance.**

## RESULTS

- The inter-correlations between QOLAP and outcome scores were generally low (r =0.10-0.20), with notable exceptions.
- The Rand-36 Physical and Mental Composite Scores and the ODI were moderately correlated with **Experience Sampling focused on challenging experiences** (r = -0.24, -0.55, and 0.31, respectively), and **Combinatory Algorithm focused on difficulties** (r = -0.20, -0.37, and 0.29, respectively).

## CONCLUSIONS

- Appraisal assessment taps constructs that are distinct from QOL.
- Only appraisal processes that were focused on negative or burdensome challenges were moderately associated with QOL measures, representing only 2 of 4 appraisal parameters.
- Many appraisal components tapped more positive content and domains relevant to patients' cognitive processes.
- Future analyses will evaluate whether QOL Appraisal Profile variables moderate the relationship of treatment measures to QOL.

## BIBLIOGRAPHY

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