



# The Bone & Joint Journal

**Journal Club: 26 October 2016**

**Chairman:** Mr Harish Kapoor (Consultant; Trauma and Orthopaedic Surgery)

**Presenter:** Miss Karen Shepherd (ST8 Registrar, Yorkshire Rotation)

**Attendees:** Paul Andrzejowski, Vivek Balachandar, Christel Charpail, Mamoun Elmamoun, Osman Riaz, Sandy Wood

**Leeds General Infirmary, Leeds, UK**

**Theme:** Measuring health-related quality of life in trauma – ‘what is the truth’?

### *Format*

A brief presentation was given outlining the methodological considerations regarding measurement of quality of life (QoL) in healthcare, and more specifically trauma within orthopaedic surgery. This included the review of definitions of quality of life, understanding research theory within this context, and finally appreciating the difficulties associated with the measurement of these concepts within our field. Following this, the traditional Journal Club format of reviewing three papers ensued.

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**Hoffman K, Cole E, Playford ED, Grill E, Soberg HL, Brohi K.** Health outcomes after major trauma: what are we measuring? *PLOS One* 2014; 9:1-11.

### **Summary:**

A systematic review of the use of outcome measures in trauma. Few such measures are used frequently in the literature, and only report a small proportion of results overall. There is no inclusive classification system for trauma.

**Purpose:**

To evaluate the assessment of specific domains, understood to contribute to health impacts and outcomes in trauma, specifically evaluating function and disability.

**Methods:**

- ICF was used as a framework; involving 1400 health concepts based on the functional model of methodology.
- This evaluated body functions, activities and participation and environmental facilitators.
- 34 of 755 studies, including three RCTs, 26 cohort and five retrospective.

**Results:**

- Outcome measures were identified
- SF-36 (14 studies; concepts per measure: 53)
- EQ5D (21 studies, concepts 10)
- FIM (15 studies, concepts 37)
- GOS (15 studies, concepts 9)
- Content density, bandwidth and content diversity noted for each measure
- EQ-5D best concise measure

**CRITIQUE****Strengths of the study**

- Attempt at quantifying the effectiveness of the tools available
- Indicated the inconsistent approach to research in this area
- Identified obstacles to this data collection (heterogeneous group)

**Methodological concerns**

- Already dictated that outcomes were functional and disability-based
- Unclear as to which outcomes were deemed important
- Only concentrated on three main aspects of outcomes

**Larsen P, Goethgen CB, Rasmussen S, Iyer AB, Elsoe R.** One-year development of QOL following orthopaedic polytrauma: a prospective observational cohort study of 53 patients. (2016), *Archives of Orthopaedic and Trauma Surgery*, 2016;136:1539-1546.

**Summary:**

Prospective evaluation of patient-reported QoL in a musculoskeletal polytrauma population, measured using SF-36 and EQ5D-5L.

**Purpose:**

Given survival has improved in polytrauma groups, long-term functional outcomes, QoL and socioeconomic consequences need to receive more attention. The study assessed QoL to 12 months post-injury.

**Methods:**

At discharge, Three-, six- and 12 month follow-up questionnaires completed. Other demographic data, employment and ISS/NISS/GCS also collected.

**Results:**

- Over a two-year period, 53 patients admitted with MSK polytrauma.
- 87% completed the full study.
- No correlation was reported between QoL and ISS or NISS.
- Age-matched comparison QoL was less than the population norm.
- Return to work affected, but not significant.
- QoL improves in first six months, then plateaus.

**CRITIQUE**

**Strengths of the study**

- Prospective
- Economic and social functioning is an important goal in T&O and this paper reports failings, given poor return to work
- Acknowledgement of the issue and attempt to quantify using reasonable tools

## **Methodological concerns**

- Sample size & generalisability
- SF-36 is a generic measure of health status, not QoL
- EQ5D assesses health outcome and aspects of HRQoL
- Observational, therefore unable to attribute causality
- Perfect opportunity to reinforce this data with qualitative information

**O'Toole RV, Castilli RC, Pollack AN, MacKenzie EJ, Bosse MJ.** Determinants of patient satisfaction after severe lower-extremity injuries. *J Bone Joint Surg [Am]* 2008;90-A:1206-1211.

## **Summary:**

- Evaluation and comparison of patient satisfaction of outcome in patients with severe lower limb trauma, with other measures of outcome.
- Further paper in the LEAP trial series, Lower Extremity Assessment Project: Reconstruction Vs Amputation.

## **Purpose:**

Patient satisfaction is an accepted health outcome. The determinants of satisfaction and whether they relate to other more traditional outcome measures was investigated in this level 1 trial.

## **Methods:**

- Secondary analysis of LEAP study data.
- Eight level 1 trauma centre data for patients admitted with severe lower limb injuries (G&A IIIB &C).
- Self-designed, structured interview/scale. ISS scoring. SIP tool.
- Review at admission, 3-,6-,12- and 24-months.
- Interview performed at 24 months only.

## **Results:**

- 601 patients recruited
- 463 had patient satisfaction outcome scores measured at two years.
- 66% of participants reported being satisfied, 34% unsatisfied.

- Multivariate analysis performed of outcome *versus* satisfaction.
- Not significant: severity and classification of injury and demographics.
- Significant: association with outcome and satisfaction; return to work; no depression; physical functioning; lower pain; absence of major complication; less anxiety

## CRITIQUE

### **Strengths of the study**

- Large patient group
- Trial standard
- Did not identify any pre-op or injury-specific outcomes to influence satisfaction

### **Methodological concerns and unanswered questions**

- Secondary data analysis
- No obvious validation process of the satisfaction tool
- What happened at 0-18 months?
- What is 'patient satisfaction'? How is it defined? How is it measured in this study?
- An obvious question could have been posed, were interviews used: 'Why are you not satisfied?'
- Psychosocial influences not measured
- Is satisfaction related to expectation and patient personality, and therefore pre-determined?