Social Support Predicts Pain and Disability Following Distal Radius Fracture

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INTRODUCTION

- The most common fracture is the distal radius fracture (DRF).
- Biomedical variables explain less than 30% of pain and disability outcomes.
- Social support has been a mediator of outcome in other health disorders.
- The Medical Outcomes Study (MOS) contributed a brief, multidimensional, self-administered, social support survey. It has 4 subscales: emotional/informational, tangible, affectionate, and positive social interaction.

PURPOSE

- To determine if baseline social support predicts post-operative pain and functional outcome after DRF.

STUDY PROCEDURES

- Prospective cohort study
- Patients were measured at baseline (within 7 days of fracture) and at 1 year post fracture
- Measures were performed by an independent evaluator
- An unacceptable reduction on the final radiograph was defined as a radial inclination of < 15 degrees, radial shortening of > 3mm, and/or > 20 degrees of volar tilt or > 10 degrees of dorsal tilt.
- Pearson correlations and backward regression were used to identify predictors of patient-rated pain and disability according to the PRWE.
- Models were built sequentially to look at the effects of social support, health status, and biomedical variables.

PARTICIPANTS

- 290 patients met the eligibility criteria
- Age: 18-84 years, mean age of 56.1 ± 15.5 years
- 68% were female
- 46% injured their dominant hand
- 24% fell on ice/snow, 57% fell from standing height
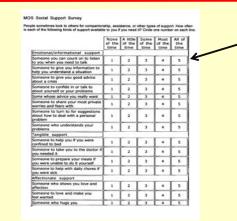- 68% were low energy,11% high energy

Figure 1: The MOS Social Support Form contains 18 items across 4 subscales. A total score can also be calculated out of 100.

Figure 1: The Patient Rated Wrist Evaluation has subscales for pain and disability. A total score can also be calculated out of 100.

MEASURES

- Social support score independent variable (1).
- Dependent variable= Pain and disability at 1-year post DRF: Patient-rated wrist evaluation (PRWE) (2).
- Health status was measured with the SF-12 (3).
- Range of motion (wrist/forearm), grip strength, and alignment on X-ray were measured impairments (4,5).

RESULTS

- 34% of patients had at least 1 unacceptable radiographic parameter; 17% of patients had 2 or more unacceptable radiographic parameters.
- Intrinsic patient characteristics, including age, baseline heart problems, diabetes, or other medical co-morbidities, smoking history, and highest level of education attained, did not predict 1-year PRWE score.
- The emotional support subscale predicted 4.7% the 1-year PRWE scores.
- The SF-12 physical and mental scores, in addition to the MOS emotional support subscale, explained 38% of the variability of the 1-year PRWE.
- Of the fracture variables, pre-reduction radial inclination (injury severity) and complications predicted 28% of the variability of the 1-year PRWE score.

DISCUSSION

- Baseline social support has a small significant impact on 1-year pain and disability outcomes. Emotional support was the most relevant type.
- Pre-injury physical and mental health status, fracture severity, and treatment complications also contribute to 1-year outcomes.
- Biopsychosocial models need further exploration.

CLINICAL RELEVANCE

- Clinicians should inquire about social support when managing patients with DRF.
- Patients should be informed that emotional support might be beneficial in their recovery and encouraged to communicate with their meaningful social contacts.
- Since recovery is difficult to predict, ongoing attention to multiple aspects of the biopsychosocial model and individualization of treatment are needed.

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