

The Impact of Psychosocial Factors on the Outcome of Surgical Repair for Rotator Cuff Tears - A Prospective Cohort (IMPROVE Study)

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INTRODUCTION: Rotator cuff tears are common musculoskeletal injuries affecting more than 30% of the population over the age of 60 with an increasing incidence. Recently, there has been significant interest in examining the impact of various psychosocial factors on outcomes after orthopaedic surgery, with many studies suggesting a substantial link between these factors and patient outcomes. However, there is a lack of high-quality evidence investigating the impact of psychosocial factors on outcomes following rotator cuff repair surgery. We sought to address this with a multi-centre, prospective cohort study.

METHODS: Patients with a full-thickness rotator cuff tear, who had symptoms for 3 or more months and were scheduled to undergo a primary rotator cuff repair, were enrolled prospectively prior to surgery. Patients completed multiple validated questionnaires at baseline to measure psychosocial functioning (symptoms of depression, anxiety, pain catastrophizing, treatment expectations and social support). Surgeons were also asked to rate patient's psychological functioning (blinded to the questionnaire results). The primary outcome was the patient-reported Western Ontario Rotator Cuff Index (WORC) completed at one-year. Secondary outcomes included the Constant Murley Score (Constant) and the EQ-5D-5L. A multi variable regression analysis was performed to examine the impact of psychosocial factors on outcome. The change in psychosocial scores from baseline to one-year was assessed using Wilcoxon ranked sum test. Using validated cut-off points for the psychological questionnaires, the answers from the patient questionnaires were compared to surgeons' assessment of psychological functioning.

RESULTS:

A total of 267 patients were enrolled in the study, 29 patients elected to not undergo surgery, and 193 patients had a complete baseline and one-year follow-up. The median age was 60 (IQR = 54 – 66) and 65% of the patients were males (125/193). Overall, the severity of symptoms of depression, anxiety, and pain catastrophizing reported by patients was low in this cohort (Table 1).

Median WORC scores improved from 36.7 points (IQR = 23.5 – 52.1) at baseline to 87.2 points (IQR = 68.1 – 95.4) at one-year, with 91% of patients achieving the MCID. The results of the regression analysis revealed that none of the psychosocial factors measured at baseline were independently associated with WORC scores at one year ($p > 0.05$). All scores on the psychosocial questionnaires improved significantly by one-year ($p < 0.01$) (Table 1). Overall, surgeons' ratings of patients' psychological function did not correlate well with patient scores from the questionnaires. Specifically, the surgeons were unable to identify patients with moderate to severe symptoms of depression and anxiety and high levels of pain catastrophizing.

DISCUSSION AND CONCLUSION: Although psychosocial factors are an important component of overall health and patient function, in our study they did not significantly impact outcomes following rotator cuff surgery. While surgeons should continue to work at identifying and treating psychosocial factors in their patients, our results suggest that the prevalence of psychological symptoms is fairly low in patients undergoing rotator cuff surgery. In addition, for patients that do present with higher levels of psychological symptoms pre-operatively, our results indicate that this is unlikely to impact their outcome following surgery and that their psychological symptoms are likely to improve post-operatively. Finally, our study showed that predicting psychosocial dysfunction is unreliable on the basis of surgeon-patient interaction and validated questionnaires should be used to screen for psychological factors when necessary.