Resilience Reduces the Impact of Recurrent Shoulder Instability on Patient-Reported Outcomes After Arthroscopic Shoulder Stabilization Surgery

Ryan T. Lin, BS; Neel Bhardwaj, BS; Andrew T. Liu, BS; Tyler Williams, BS; Abigail Balsan, BS; Ryan Gilbert, BS; Shaquille Charles, MD; Jonathan D. Hughes, MD, PhD; Adam Popchak, DPT, PhD; Bryson P. Lesniak, MD; Pittsburgh Shoulder Institute; Albert Lin, MD
UPMC Freddie Fu Center for Sports Medicine, Department of Orthopaedic Surgery, Pittsburgh, PA.
Ryl32@pitt.edu

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INTRODUCTION: The purpose of this study was to examine whether psychological resilience, measured by the Brief Resilience Scale (BRS), is associated with patient-reported outcomes (PROs) after arthroscopic Bankart repair with or without remplissage augmentation. We hypothesized that higher BRS scores would be associated with better PROs following arthroscopic stabilization.

METHODS: We retrospectively reviewed patients with "on-track" Hill-Sachs lesions who underwent either arthroscopic Bankart repair (ABR) or ABR with remplissage (ABR+R) between 2007 and 2021 for anterior instability. Patients were excluded if they had less than 2-year follow-up, concomitant rotator cuff pathology, or underwent revision surgery. Eligible patients were contacted to obtain BRS, Western Ontario Shoulder Instability Index (WOSI), subjective shoulder value (SSV), and visual analog scale (VAS). Recurrent shoulder instability was defined as recurrent dislocation and/or subjective subluxation postoperatively. BRS scores were used to categorize patients into low (LR) and high resilience (HR) groups based on being less than or greater than the cohort mean, respectively. Correlations between BRS and outcome measures were assessed using Spearman's rho; group comparisons were made using t-tests and chi-square analyses. Multivariate logistic regression analyses were also used to analyze variables associated with PROs.

RESULTS SECTION: 85 patients were included (ABR: 67 | ABR+R: 18) with a mean age of 22.4 ± 7.9 and follow-up time of 9.7 ± 3.3 years. The average Hill-Sachs interval was significantly higher in the ABR+R group (12.8 ± 3.4 vs. 5.9 ± 5.0 mm) resulting in a significantly lower distance-to-dislocation (9.6 ± 4.5 vs. 15.9 ± 5.7 mm) compared to ABR, but no significant differences in age, sex, contact sport participation, and postoperative failure/reoperation. Comparisons between LR and HR groups revealed worse outcomes in LR patients, including higher WOSI scores (496.3 vs 293.7, p=0.03), lower SSV (72.9% vs 82.8%, p=0.04), and higher VAS (2.7 vs 1.5, p=0.03). Higher resilience was associated with lower WOSI scores (r=–0.30, p=0.008), SSV ($r = 0.31$, $p = 0.005$), and lower VAS (r=–0.36, p=0.001). HR patients with recurrent shoulder instability had similar WOSI scores compared to LR patients without recurrence (413.9 vs. 332.0, $p = 0.43$). In multivariate linear regression, recurrent shoulder instability was associated with significantly worse WOSI scores ($\beta = 873.2$, 95% CI: 552.4-1194.0, $p < 0.001$). However, the interaction between recurrent instability and BRS group was significant ($\beta = -581.7$, 95% CI: -959.8- -203.5, $p = 0.003$), indicating that the negative effect of injury recurrence was reduced in HR patients.

DISCUSSION: Higher BRS scores were associated with improved PROs following shoulder stabilization. Furthermore, injury recurrence was significantly moderated by BRS scores, suggesting patients with higher resilience were able to overcome the negative impact of recurrent instability on PROs. This highlights a potential psychosocial factor in recovery from shoulder surgery, particularly when dealing with potential complications. Overall, this data supports resilience as a relevant factor in recovery, and incorporating resilience assessments may inform perioperative care and optimize outcomes in patients undergoing shoulder stabilization.

SIGNIFICANCE/CLINICAL RELEVANCE: Resilience is a key trait that plays an important role in recovery from arthroscopic anterior shoulder stabilization surgery.

IMAGES AND TABLES:

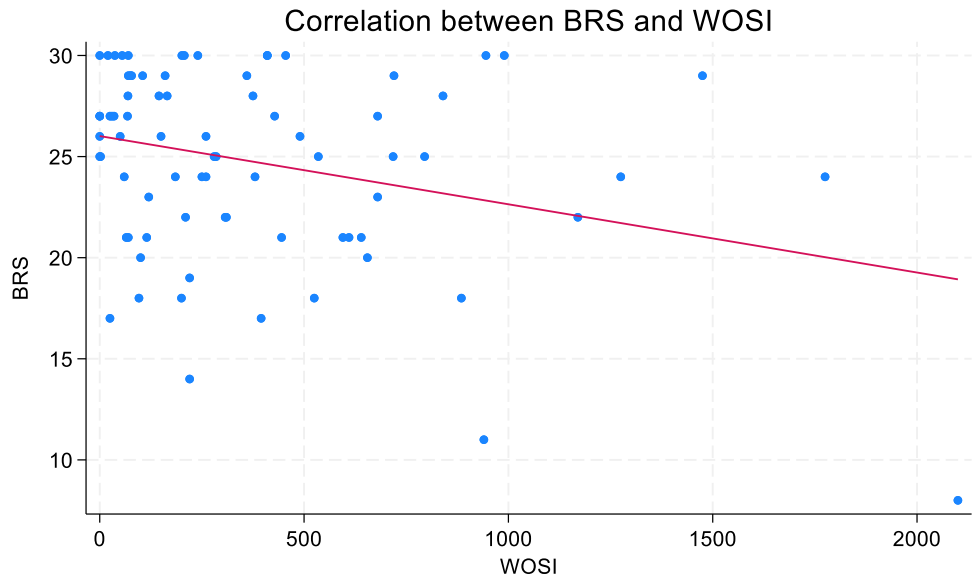

Figure 1. Correlation between BRS and WOSI