Factors influencing patient satisfaction after rotator cuff repair

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A number of variables are used to assess the outcome of rotator cuff repair (RCR), including patient satisfaction. The purpose of this study was to determine the factors that affect patient satisfaction after RCR. The study assessed 112 patients (118 shoulders) with chronic rotator cuff tears preoperatively and at a mean of 54 months (range, 34-85 months) after RCR by using several functional outcome questionnaires and an evaluation of patient satisfaction. Of these, 95% were satisfied with the outcome of the surgery. Satisfaction was significantly correlated with the improvement in functional outcomes and general health status and absolute postoperative functional outcomes. Married, currently working, and nondisabled patients had greater satisfaction. High preoperative and postoperative met expectations were also positively correlated with patient satisfaction. Patient satisfaction is most highly correlated with the pain, function, and general health status of the patient after RCR. We conclude that aspects of treatment that maximize the functional outcome are important in achieving patient satisfaction after RCR. (J Shoulder Elbow Surg 2007;16:752-758.)

Patient-based functional outcome analysis has increasingly become the focus of clinical orthopedic research. Previously, physician-derived outcome tools predominated, with little reference to patient self-assessed outcomes. A number of outcome tools have been specifically developed to evaluate self-assessed outcomes, including region-specific, disease-specific, and general health assessments.[1,13,19] Various aspects of the outcome of treatment, including pain, function, general health status, and satisfaction, can be evaluated. A growing body of literature reports the results of studies of the outcome of rotator cuff repair (RCR). Some elucidate factors that affect outcome; however, the factors that influence patient satisfaction have not been well studied.

Patient satisfaction after RCR is usually reported to be very high. Studies that evaluate open and arthroscopic repairs for all different tear sizes have shown patient satisfaction rates of 87% to 100% (Table I).[4,12,16,20] A variety of methods have been used to assess satisfaction, including direct questioning of the satisfaction of surgical outcome or shoulder function or the willingness to undergo the surgery again.[6,15,20] Most studies of RCR only report the percentage of patients at final follow-up who are satisfied, without attempting to determine the factors that influence satisfaction.

Studies that evaluate the factors that influence satisfaction after RCR report various and sometimes conflicting findings. Although O'Holleran et al[15] found no affect of age, sex, or workers' compensation status on patient satisfaction after RCR, other authors found that workers' compensation had a negative effect on satisfaction after open repair and that younger age (<55 years) had a negative influence.[20] In contrast, Romeo et al[16] found that older age (>66 years) had a negative affect on patient satisfaction. Several studies have found that larger tear size has a negative influence on postoperative patient satisfaction after RCR.[6,15,16] Other factors identified that affect other outcome measures after RCR include smoking, workers' compensation status, tear size, tendon healing, and rotator cuff muscle quality.

We consider patient satisfaction to be an important measure of the outcome of the surgical management of rotator cuff tears. The purpose of this study is to identify preoperative and postoperative factors that correlate with patient satisfaction after RCR and to evaluate the relationship between satisfaction and final outcomes and improvement in outcomes.

MATERIALS AND METHODS

This study was approved by the Rhode Island Hospital Investigational Review Board. The study recruited 112 patients (118 shoulders) who underwent RCR. The baseline

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Table I Review of results of studies evaluating satisfaction after rotator cuff repair

Authors	No. of patients	Type of repair	Primary vs. revision	Size of tears	Average duration of follow-up	% Satisfied
Bennett WF[4]	24	Complete arthroscopic	Primary only	Small and medium (supraspinatus only)	Minimum of 2 year follow-up	100%
Jones CK, Savoie FH[12]	50	Complete arthroscopic	Primary only	Large and massive	32 months	98%
Romeo AA et al[16]	72	Open	Primary only	Small to massive	54 months	94%
Watson EM, Sonnabend DH[20]	667	Open	Primary and revision	Small to massive	46 months	87.5%

information was retrieved from a prospectively maintained database, including all patients undergoing RCR. The patients had a chronic rotator cuff tear, defined as having symptoms of 3 months or more.

The indications for surgery included failure of nonoperative treatment with a physical therapy rehabilitation exercise program, and, in some cases, a corticosteroid injection. Patients with glenohumeral arthritis and adhesive capsulitis were excluded. Patients with a history of a workers' compensation claim were excluded because only 2 of 39 such patients agreed to participate in the study by responding to the questionnaire. Consequently, with so few subjects, it would have been meaningless to analyze workers' compensation as a factor in satisfaction. Full thickness rotator cuff tears were confirmed at the time of surgery. The mean length of follow-up after RCR was 54 months (range, 34-85 months) (Table V).

The mean age of the patients at the time of surgery was 59 years (range, 33-86 years). Sixty-five shoulders (55%) were in men and 53 (45%) in women. The mean ± standard deviation of the symptoms before the preoperative evaluation was 15 ± 20.17 months. The mean tear size was 2.3 ± 1.18 cm. Tears were classified as small (<1 cm), medium (1-3 cm), large (3-5 cm), and massive (>5 cm).[7] There were 21 small, 49 medium, 35 large, and 13 massive rotator cuff tears. Repairs were open in 25 shoulders (21%), miniopen in 62 (53%), and completely arthroscopic in 31 (26%). The patients in this study consisted of a consecutive series (Table V).

The preoperative evaluation included an inventory of demographic information, detailed medical history, a physical examination, and completion of a questionnaire with a series of sections evaluating shoulder pain, functional abilities, and general health status. Details of this evaluation are previously published.[18] Tear size, presence of associated shoulder pathology, and details of the surgical technique (open vs miniopen vs complete arthroscopic repair) were obtained from operative reports. The preoperative assessment data and information were stored in a prospectively maintained database.

The questionnaire included a Disability of the Arm, Shoulder, and Hand (DASH) section.[1] The DASH section assesses symptoms and functional status, with an emphasis on physical function, in patients with upper extremity musculoskeletal conditions. It specifically questions patients about pain, weakness, stiffness, ability to perform daily activities (eg, dressing, eating, sleeping), occupational function, family care, and self-image.[11] It uses a Likert scale, which presents a set of attitude statements and then asks the respondent to rate his or her agreement or disagreement in differing degrees of certainty by using a numeric scaling system.[9] The DASH has been validated for the assessment of shoulder disorders.[3,17] We used the DASH as a region specific tool to measure shoulder function. All patients in the study completed the DASH questionnaire.

The second section of the patient self-assessment questionnaire addressed general medical problems, which is included in the Musculoskeletal Outcomes Data Evaluation and Management System (MODEMS), an instrument for collecting musculoskeletal outcome data using several questionnaires.[2] MODEMS includes questions about comorbidities, work status, and education level. The list of questions regarding comorbidities is as follows:

"Do you have the problem? (Yes or No) 1. Heart disease, 2. High Blood Pressure, 3. Lung disease, 4. Diabetes, 5. Ulcer or stomach disease, 6. Kidney disease, 7. Liver disease, 8. Anemia or other blood disease, 9. Cancer, 10. Depression, 11.Osteoarthritis, degenerative arthritis, 12. Back pain 13. Rheumatoid arthritis, or 14. Other medical problem (please specify)."

The final inventory included the presence or absence of hypertension, coronary artery disease, other heart problems (valvular, arrhythmia), respiratory problems, pulmonary embolus, diabetes mellitus, cancer, depression/anxiety, cerebral vascular accident, headaches/migraines, liver disease, lower back pain, and arthritis. Each "yes" answer was counted as 1 comorbidity, and the number of comorbidities was totaled for each patient.

Questions about patient expectations are also included in the MODEMS. Baseline expectation data was obtained by asking the questions listed in Table II. An average score for the 6 questions was then calculated for each patient. If a question was marked "not applicable," the point value from this question was not included in the average score. The MODEMS also included the Medical Outcomes Study Short Form 36 (SF-36).[19] The SF-36 raw scores were adjusted and reported as a percentage of expected value for age and sex-matched controls. All patients enrolled in the study completed the SF-36 questionnaire.

The third section of the questionnaire included the Simple Shoulder Test (SST), which is used as a shoulder- and region-specific tool to measure shoulder function. The results of the SST are recorded as the total number of positive responses.

The fourth section of the questionnaire included Visual Analog Scales (VAS) for shoulder pain, an overall rating of shoulder function, and an overall quality-of-life assessment.

Table II Patient baseline expectation questions from MODEMS
What results do you expect from your treatment? (circle one response for each question)

	Not at all likely	Slightly likely	Somewhat likely	Very likely	Extremely likely	Not applicable
1. Relief from symptoms (pain, stiffness, swelling, numbness, weakness, instability)	1	2	3	4	5	6
2. To do more everyday household or yard activities	1	2	3	4	5	6
3. To sleep more comfortably	1	2	3	4	5	6
4. To go back to my usual job	1	2	3	4	5	6
5. To exercise and do recreational activities	1	2	3	4	5	6
6. To prevent future disability	1	2	3	4	5	6

MODEMS, Musculoskeletal Outcomes Data Evaluation and Management System.

The patients were asked to place a mark on a 10-cm line that was marked on either end from "none" to "disabling" for pain, "comfortable" to "can't use it" for function, and from "little or no problem" to "very bad" for quality of life. After the patients completed each VAS assessment, the mark was measured to the nearest millimeter and recorded as the score in centimeters.

Final follow-up evaluations were performed more than 2 years postoperatively. Interval questionnaire follow-up was also obtained at 3 months, 6 months, and 1 year from the time of surgery. We initially attempted to contact each patient who underwent RCR from 1998 to 2001 by telephone, informing them of our interest to include them in the study. The initial phone list included 252 shoulders. Each patient was sent a follow-up questionnaire. Additional attempts to recontact all of the patients who did not respond to the initial mailing were made with at least 2 additional mailings. The patients who responded were included in the final cohort.

The follow-up questionnaire included the follow-up module for the MODEMS (including the DASH, SF-36, and various demographic information including age, sex, medical comorbidities, education level, smoking status, marital status, disability status, body mass index), the SST, VAS (pain, function, and quality of life), and a separate satisfaction questionnaire. The MODEMS follow-up package also included questions about patient met-expectations (Table III). Scoring was performed in a similar fashion as described earlier for baseline preoperative expectation data.

A final section of the follow-up questionnaire assessed patient satisfaction. The patients were asked to respond to a binary, "yes/no" question: "Are you satisfied with your shoulder surgery?" We termed this *patient satisfaction*. They also completed the VAS to rate their level of satisfaction, which we termed the *VAS satisfaction score*. The patients were asked to place a mark on a 10-cm line that was marked on either end from "not satisfied at all" to "very satisfied." After the VAS assessment was completed, the mark was measured to the nearest millimeter and recorded as the score in centimeters.

The responders and nonresponders were compared using Pearson χ^2 for surgical technique and 2-sample *t* tests for age, number of comorbidities, number of previous nonshoulder surgical procedures, tear size, and duration of symptoms. Responders and nonresponders did not differ significantly in terms of surgical technique, number of comorbidities, tear size, or duration of symptoms ($P > .05$). Responders were slightly younger (55 years old) than nonresponders (59 years old; $P = .004$; Table IV).

Pearson χ^2 tests were used to compare "yes/no" surgery satisfaction with smoking, sex, education level (completion of high school), marital status, working status, preoperative disability status, presence of biceps tendon pathology, distal clavicle resection, and surgical technique. Two-sample *t* tests were used to compare "yes/no" surgery satisfaction with preoperative expectations, postoperative expectations, body mass index, age, number of comorbidities, number of previous nonshoulder surgical procedures, tear size, duration of symptoms, the improvement from baseline, and the final follow-up functional outcome and general health status scores from the DASH, SST, 8 subsections of the SF-36, and VAS pain, shoulder function, and quality of life. Values of $P < .05$ were considered statistically significant.

Two-sample *t* tests were used to compare VAS satisfaction score with smoking history, sex, education level (completion of high school), marital status, working status, preoperative disability status, presence of biceps pathology, distal clavicle resection, and repair technique. Spearman correlations were used to compare VAS satisfaction with body mass index, preoperative and postoperative patient expectations, age, comorbidities, number of previous nonshoulder surgical procedures, tear size, duration of symptoms, the improvement from baseline and the final follow-up function, and general health status scores from the DASH, SST, 8 subsections of the SF-36, and VAS pain, shoulder function, and quality of life. Values of $P < .05$ were considered statistically significant. A preoperative power analysis was not performed.

RESULTS

Satisfaction with the shoulder surgery was reported in 112 of the 118 (95%) shoulders. The mean score VAS satisfaction score was 8.76 ± 2.4.

Table III Patient follow-up expectations questions from MODEMS
Are the results of your treatment what you expected? (circle one response for each question)

	Definitely yes	Probably yes	Not sure	Probably not	Definitely not	Not applicable
1. Relief from symptoms (pain, stiffness, swelling, numbness, weakness, instability)	1	2	3	4	5	6
2. To do more everyday household or yard activities	1	2	3	4	5	6
3. To sleep more comfortably	1	2	3	4	5	6
4. To go back to my usual job	1	2	3	4	5	6
5. To exercise and do recreational activities	1	2	3	4	5	6

MODEMS, Musculoskeletal Outcomes Data Evaluation and Management System.

Several significant correlations were found between patient satisfaction and preoperative factors. Married ($P = .001$) and currently working ($P = .047$) patients were more likely to be satisfied after surgery (patient satisfaction). Those with greater preoperative expectations were also significantly more satisfied after surgery (patient satisfaction; $P < .001$). Satisfied patients (patient satisfaction) were older (average, 59 years) compared with patients who were not satisfied (average, 51 years; $P = .0131$). Those who reported that they were disabled on the preoperative assessment were less likely to be satisfied (patient satisfaction) than nondisabled patients ($P = .0001$) (Table V).

Several significant correlations were found between perioperative and demographic data and VAS satisfaction scores. Married patients ($P = .05$) and those with higher preoperative expectations ($P < .001$) of treatment had significantly higher VAS satisfaction scores. Preoperative disabled patients had significantly worse VAS satisfaction scores than nondisabled patients ($P = .013$) (Table V).

In contrast, no linear correlations existed between patient satisfaction or VAS satisfaction and smoking, sex, education level (completion of high school), presence of biceps tendon pathology, distal clavicle resection, surgical technique (open, miniopen, or complete arthroscopic), body mass index, number of comorbidities, number of previous nonshoulder surgical procedures, tear size, or duration of symptoms ($P > .05$; Table V).

Patient satisfaction and VAS satisfaction scores had significant correlations with nearly all measures of final postoperative pain, function and general health status, and met expectations (Tables V, VI, and VII). There were a number of significant correlations between patient satisfaction and VAS satisfaction scores and improvement in functional outcomes from baseline although there were some differences between patient satisfaction and VAS satisfaction scores. Patient satisfaction was not linearly correlated with the improvement in the VAS function score or DASH, whereas the VAS satisfaction score was not correlated with the improvement in the VAS pain score or DASH score. Otherwise, patient satisfaction and the VAS satisfaction score were significantly correlated, with improvement in all other functional outcome measures (Table VIII and IX).

Table IV Comparison of responders and nonresponders*

	Responders	Non-responders	*P*-value
Average age	55	59	0.004†
Number of open repairs	25	25	0.615
Number of complete arthroscopic repairs	31	48	0.104
Number of mini-open repairs	63	59	0.138
Average number of co-morbidities	2.08	1.99	0.681
Average number of previous non-shoulder surgical procedures	2.14	2.07	0.765
Average tear size (cm)	2.33	2.32	0.739
Average duration of preoperative symptoms (months)	14.54	16.9	0.485

* *P* values calculated by chi-square and t test comparing responders and nonresponders.
† Statistically significant ($P < 0.05$).

DISCUSSION

Patient satisfaction is an important aspect of the outcome of medical treatment. This is especially true when considering treatment, such as orthopedic surgery, that primarily affects quality of life. Many studies have evaluated the outcome of RCR. Most assess functional outcome with a variety of outcome assessment tools. Many also report the percentage of patients who are satisfied with the outcome of treatment. Nevertheless, very few studies have examined patient satisfaction after RCR or the correlation between functional outcomes and satisfaction in any detail. The results of this study demonstrate that strong correlations exist between functional outcomes after RCR and patient satisfaction. We believe that this confirms

Table V Comparison of patient factors (preoperative and postoperative) and yes/no satisfaction response and Visual Analog Satisfaction*

Patient factor	"Yes/No" Satisfaction Response *P*-value	VAS Satisfaction *P*-value
Preoperative		
Smoking	0.430	0.8482
Sex	0.500	0.8811
Duration of preop symptoms	0.8156	0.7283
Body Mass Index	0.8286	0.3628
Education (Completed HS)	0.433	0.2998
Marital status	0.001†	0.05†
Currently working	0.047†	0.1218
Disabled Pre-op	0.0001†	0.013†
Biceps tendon pathology	0.578	0.7694
Preop expectations	0.0001†	0.0006†
Age	0.0131†	0.8186
Co-morbidities	0.0762	0.9417
Number of previous surgeries (non-shoulder)	0.8370	0.7252
Tear size	0.1707	0.6307
Postoperative		
Distal Clavicle Resection	0.083	0.3987
Open Repair	0.246	0.1567
Mini-Open Repair	0.216	0.0909
Complete Arthroscopic repair	0.737	0.2352
Met expectations	0.0164†	0.0004†

HS, High school; *VAS*, Visual Analog Scales.
**P* values for chi-square, *t* tests, and Spearman correlations.
†Values are statistically significant ($P < 0.05$).

Table VI Comparison of patient satisfaction (yes/no) and final postoperative general health status, shoulder function, quality of life, and pain*

Outcome parameter	Mean (std) final post-operative score for satisfied patients	Mean (std) final post-operative score for unsatisfied patients	*P*-value
SF-36 physical function	101.57 (37.11)	48.7 (35.62)	0.002†
SF-36 role physical	100.71 (64.19)	6.58 (14.7)	<0.0001†
SF-36 bodily pain	93.68 (37.1)	54.54 (14.83)	0.0015†
SF-36 general health	110.56 (34.11)	35.22 (16.59)	0.0001†
SF-36 vitality	102.91 (34.4)	51.24 (34.04)	0.0013†
SF-36 social function	102.12 (30.6)	64.91 (34.86)	0.009†
SF-36 role emotional	101.35 (44.47)	49.80 (68.2)	0.167
SF-36 mental health	100.45 (21.94)	85.51 (34.92)	0.395
VAS pain	1.3 (1.9)	8.18 (1.91)	<0.001†
VAS function	1.49 (2.03)	7.53 (0.77)	0.002†
VAS quality of life	1.46 (2.22)	6.97 (3.04)	0.015†
DASH	13.8 (16.6)	51.78 (21.64)	0.0163†
SST	10.15 (2.28)	4.8 (3.7)	<0.001†

DASH, Disability of the Arm, Shoulder, and Hand; *SST*, Simple Shoulder Test; *VAS*, Visual Analog Scales.
†Statistically significant ($P < 0.05$).
*Mean (SD) final postoperative scores and *P*-values for 2-sample *t* test.

Table VII Comparison of Visual Analog Scale satisfaction and final postoperative general health status, shoulder function, quality of life, and pain*

Outcome parameter	Correlation coefficient (r_s)	*P*-value
SF-36 physical function	0.208	0.026†
SF-36 role physical	0.129	0.178
SF-36 bodily pain	0.252	0.007†
SF-36 general health	0.272	0.003†
SF-36 vitality	0.223	0.016†
SF-36 social function	0.228	0.014†
SF-36 role emotional	0.141	0.143
SF-36 mental health	0.154	0.102
VAS pain	−0.604	<0.001†
VAS function	−0.584	<0.001†
VAS quality of life	−0.621	<0.001†
DASH	−0.434	<0.001†
SST	0.400	<0.001†

DASH, Disability of the Arm, Shoulder, and Hand; *SST*, Simple Shoulder Test; *VAS*, Visual Analog Scales.
†represents significance ($P < 0.05$).
*Spearman correlation coefficients (r_s) and *P* values for Spearman correlations.

that reduction of pain, restoration of function, and enhancement of general health status are relevant goals for patients who undergo RCR.

O'Holleran et al[15] published the only study that specifically evaluates patient satisfaction after shoulder surgery. They demonstrated significant correlations between American Shoulder and Elbow Surgeons scores and patient satisfaction. We similarly found significant correlations between satisfaction and postoperative function. In contrast to O'Holleran et al and several other authors, we did not find correlations between the size of the tear and patient satisfaction.[6,15,16]

We did find significant correlations between satisfaction and working and marital status, with married and currently working patients being more satisfied than unmarried or unemployed patients. It seems reasonable to surmise that, in general, patients who are married and working or employed have a better social support network and thus a more optimistic view of their life, which, in turn, positively affects their outcome assessment. In addition, the stronger support network provided by a spouse during the prolonged postoperative rehabilitation required after rotator cuff surgery may have eased any difficulty during this time period, therefore, leaving the patient more satisfied with the outcome. Similarly, currently working patients may have been more satisfied with their result because they were able to return to work after surgery compared with patients who were unemployed or occupationally

Table VIII Comparison of patient satisfaction yes/no and improvement from baseline of general health status, shoulder function, quality of life, and pain*

Outcome parameter	Mean (std) improvement in scores for satisfied patients	Mean (std) improvement in scores for unsatisfied patients	*P*-value
SF-36 physical function	7.49 (33.39)	–13.51 (32.28)	0.171
SF-36 role physical	43.5 (66.64)	6.58 (14.7)	0.001†
SF-36 bodily pain	32.39 (38.02)	12.78 (27.18)	0.186
SF-36 general health	–3.82 (33.92)	–28.82 (21.62)	0.059
SF-36 vitality	7.34 (34.47)	–14.22 (26.68)	0.147
SF-36 social function	7.32 (35.08)	–0.464 (35.12)	0.638
SF-36 role emotional	4.93 (59.11)	–22.18 (53.11)	0.316
SF-36 mental health	0.20 (28.25)	–2.93 (18.95)	0.740
VAS pain	4.46 (2.91)	0.12 (1.95)	0.006†
VAS function	4.51 (2.94)	3.88 (3.9)	0.648
VAS quality of life	4.19 (3.1)	1.03 (3.8)	0.030†
DASH	27.24 (19.07)	6.78 (23.82)	0.127
SST	5.9 (2.67)	3.2 (3.7)	0.031†

DASH, Disability of the Arm, Shoulder, and Hand; *SST,* Simple Shoulder Test; *VAS,* Visual Analog Scales.
†Statistically significant ($P < 0.05$).
*Mean (SD) final postoperative scores and *P*-values for 2-sample *t* test.

Table IX Comparison of Visual Analog Scale satisfaction and improvement from baseline of general health status, shoulder function, quality of life, and pain*

Outcome parameter	Correlation coefficient (r_s)	*P*-value
SF-36 physical function	0.136	0.144
SF-36 role physical	0.044	0.641
SF-36 bodily pain	0.143	0.123
SF-36 general health	0.113	0.224
SF-36 vitality	0.244	0.008†
SF-36 social function	0.039	0.681
SF-36 role emotional	0.016	0.867
SF-36 mental health	−0.005	0.959
VAS pain	0.178	0.055
VAS function	0.256	0.005†
VAS quality of life	0.217	0.019†
DASH	0.151	0.104
SST	0.192	0.036†

DASH, Disability of the Arm, Shoulder, and Hand; *SST,* Simple Shoulder Test; *VAS,* Visual Analog Scales.
†represents significance ($P < 0.05$).
*Spearman correlation coefficients (r_s) and *P*-values for Spearman correlations.

disabled. We also found preoperatively disabled patients were less satisfied with their outcomes.

The effect of patient expectations on outcomes after orthopaedic surgery has not been well studied. Mancuso et al[14] evaluated patient expectations in a number of shoulder disorders preoperatively and found that 48% of patients expected complete pain relief from their surgeries. We found that preoperative and met-postoperative expectations are highly correlated with long-term patient satisfaction. As a consequence, these data suggest that preoperative counseling may play a significant role in determining final outcomes after surgery.

We find it interesting that absolute outcome, rather than improvement, is more highly correlated with satisfaction. Absolute outcome is defined as the outcome score obtained at the final postoperative follow-up visit. This suggests that patients who have greater preoperative function and less pain and, thereby, less potential for improvement, may experience greater satisfaction with their higher level of outcome despite a lesser degree of improvement.

We recognize that our study has several important limitations. We were only able to get final follow-up on 118 of 252 shoulders originally treated. The lack of complete follow-up of all patients raises the question of whether the findings are valid for the entire population of patients treated with RCR. Our results are likely to be biased from either underreporting or overreporting results. Underreporting would occur if patients who are doing poorly are more interested in participating because they may not be doing as well as they would like and may want continued treatment. Overreporting may occur if patients who have done well from surgery are only interested in helping with the study.

Our study did not assess rotator cuff healing, which some authors have found to correlate with functional outcome.[5,8,10] As a consequence, we do not know if satisfaction and functional outcomes are independent of healing and cannot make any definitive conclusions about rotator cuff healing and satisfaction. We can surmise that if function correlates with repair integrity, satisfaction might also correlate. Finally, evaluating patient satisfaction with a binary question or a single VAS may not fully represent this aspect of outcome. The correlations between the VAS assessment of satisfaction and functional outcomes were stronger than the correlations with the more simple binary response assessment, suggesting that an assessment that better distinguishes grades of satisfaction facilitates our ability to demonstrate statistically significant correlations. However, a more detailed assessment of satisfaction might provide an even better means for analysis. Finally, our failure to demonstrate correlations between satisfaction and a number of preoperative indicators might be the result of insufficient power.

The results of this study demonstrate that the final satisfaction after RCR correlates with several factors, including marital status, work status, preoperative patient expectations, and postoperative patient met-expectations. These are correlations that have not been previously reported. In this study, we were also able to demonstrate correlations between satisfaction

and both the overall final, as well as improvement in general health status. Similarly, these correlations have not been previously reported. Finally, we demonstrate correlations between satisfaction and shoulder pain and functional outcomes, both final and improvement from baseline.

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