

Distressed Communities Index Does Not Correlate to Goutallier Grade or Rate of Surgery for Rotator Cuff Tears

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INTRODUCTION: Health care in the United States is affected disproportionately by differences in race, ethnicity, sex, socioeconomic status, education, and overall access to health. Racial minorities have lower rates of knee, hip, and shoulder arthroplasty as well as lumbar spine decompression. The Distressed Community Index (DCI) is a measure of comparative economic well-being based off zip code. The relationship between rotator disease and DCI is currently unknown. We sought to determine 1) if the DCI correlated with fatty infiltration for rotator cuff pathology and 2) if DCI correlated with surgical treatment.

METHODS: This study included adult patients with MRI diagnosed rotator cuff tears from a single academic medical center. Demographic (including DCI), medical, and surgical data were collected. MRI was reviewed by a single fellowship-trained shoulder surgeon and quantified using the Goutallier classification system. Univariate logistic regression was performed to determine the relationship between DCI, rotator cuff disease, and rate of surgery.

RESULTS: A total of 190 (83 male, 107 female) patients were included with a mean age of 61 (range 37-83). DCI distribution was: 53 “prosperous”; 47 “comfortable”; 13 “mid-tier”; 26 “at-risk”; and 51 “distressed.” In total, 98 patients had either a Goutallier score of 3 or 4 with Tangent sign present in 72 patients. Compared with patients in the prosperous group, distressed patients had higher odds of having Goutallier 3 or 4, although this was not significant (OR 1.7 [95% CI 0.8 to 3.7], $p = 0.17$). Compared to prosperous patients, distressed patients had similar odds of having a tangent sign (OR 1.2 [95% CI 0.6 to 2.8], $p = 0.56$). Distressed patients underwent surgery at a similar rate compared with patients in all other DCI categories (40% vs. 38%, $p = 0.73$).

DISCUSSION AND CONCLUSION: In this cohort of patients, DCI did not correlate with either degree of fatty infiltration or rate of surgery. Socioeconomic factors other than the DCI may contribute to degenerative rotator cuff changes and surgical intervention.

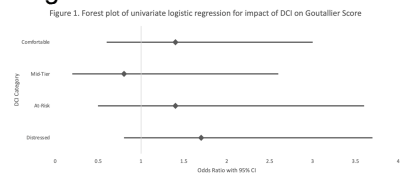


Figure 1. Forest plot of univariate logistic regression for impact of DCI on Goutallier Score

Table 1

Patient demographics

Variable	n (190)
Female	107
Age in years	61 ± 11
DCI category	
Prosperous	53
Comfortable	47
Mid-Tier	13
At-Risk	26
Distressed	51
Goutallier Score	
0	8
1	34
2	50
3	50
4	48
Tangent	
no	118
yes	72
Not distressed	
no surgery	62%
had surgery	38%
Distressed	
no surgery	59%
had surgery	41%

Table 2

Univariate logistic regression for impact of DCI on Goutallier Score and Tangent Sign

Variable	OR (95% CI)	p value
<i>Goutallier Score</i>		
DCI Category		
Prosperous	reference	
Comfortable	1.4 (0.6 - 3.0)	0.43
Mid-Tier	0.8 (0.2 - 2.6)	0.66
At-Risk	1.4 (0.5 - 3.6)	0.48
Distressed	1.7 (0.8 - 3.7)	0.17
<i>Tangent Sign</i>		
DCI Category		
Prosperous	reference	
Comfortable	1.0 (0.4 - 2.3)	0.97
Mid-Tier	0.3 (0.1 - 1.6)	0.17
At-Risk	1.8 (0.7 - 4.6)	0.23
Distressed	1.3 (0.6 - 2.8)	0.58