Predictors of Treatment Delays for Pediatric and Adolescent Patients Undergoing Surgery for Bankart Lesions

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INTRODUCTION: Delays in surgical care for patients with shoulder instability can contribute to a higher risk of recurrent instability events, [CN1] progressive osseous injury, and an increased likelihood of requiring more complex surgical interventions. [CN2] Minimizing care delays is therefore essential to optimizing long-term shoulder function and outcomes, particularly in populations disproportionately affected. While studies have demonstrated the influence of sociodemographic and structural factors on care delays in various pediatric sports medicine pathologies [CN3] [CN4] [CN5] [CN6], there remains a paucity of literature evaluating their impact on shoulder instability care. This study aimed to evaluate the association between insurance status and other potential predictors of care delays among patients undergoing Bankart repair. We hypothesized that public insurance status, along with other sociodemographic risk factors, would be associated with prolonged time to care from injury to surgical consultation, injury to magnetic resonance imaging (MRI), and injury to surgery.

METHODS: Patients with shoulder instability presenting for surgical consultation at a tertiary care institution were included in this retrospective cohort study. Pre-specified predictors were abstracted and included age, sex, race, ethnicity, insurance status, primary language, follow-up duration, history of instability, distance to the referral center, and record of MRI prior to consultation. Group comparisons based on insurance status were performed. The primary outcomes were the following time intervals: injury to consultation, injury to MRI, and injury to surgery. Multivariable linear regressions assessed the association between these risk factors and each time interval.

RESULTS SECTION: A total of 134 patients with MRI-confirmed Bankart lesions were included, with 29 patients being female and 105 being male. Significant group differences by insurance status were noted in race, ethnicity, and primary language, but not in any of the time-to-care events. Multivariable linear regressions adjusting for these factors did not indicate insurance status as an independent predictor of delays in any of the care events. However, Asian race was independently associated with longer duration from injury to clinic (β = 258 days, p = 0.004), and Asian race (β = 248 days, p = 0.015) and Hispanic ethnicity (β = 192 days, p = 0.026) were each independent predictors of delayed time from injury to MRI.

DISCUSSION: Treatment delays for shoulder instability do not seem to be associated with insurance status, but our results indicate that race and ethnicity are independent risk factors for delays in intervals in the care continuum for these patients. These findings highlight disparities affecting certain groups of sports medicine patients, underscoring the need for targeted, multi-level interventions to ensure equitable and timely care.

SIGNIFICANCE/CLINICAL RELEVANCE: Identification of race, insurance, and other socioeconomic-based disparities in time to care is critical for providing equitable access to timely management of Bankart lesions and prevention of progressive instability.

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Table 1: Multivariable Linear Regression Models Predicting Delay of Care Events*

	Injury to Clinic		Injury to MRI		Injury to Surgery	
	Coefficient	**P-Value**	**Coefficient**	**P-Value**	**Coefficient**	**P-Value**
Insurance						
(Private ref)						
Public	31.4	0.533	-23.1	0.692	-9.1	0.903
Race						
(White ref)						
Asian	257.7	**0.004**	247.6	**0.015**	227.7	0.076
Black/African American	-99.6	0.176	-41.6	0.621	-8.1	0.94
Other	-92.7	0.193	-93.9	0.253	-0.7	0.995
Unknown/Declined	-179.8	0.152	-143.3	0.32	-62.7	0.732
Ethnicity						
(Non-Hispanic or Latino ref)						
Hispanic or Latino	32.1	0.659	192.0	**0.026**	126.3	0.241
Language						
(English ref)						
Spanish	23.5	0.803	-95.1	0.384	-161.3	0.248
Other	-441.3	0.018	-209.4	0.318	-91.4	0.731
Model Characteristics						
P-Value	**0.014**		0.065		0.563	
R^2	0.309		0.247		0.122	
F	2.74		2.01		0.85	

* Boldface P values denote statistically significant difference between groups (P < .05).

Table 2. Multivariate Logistic Regression Models Predicting Repeat Instability*

	Odds	95% CI		P-Value
Insurance				
(Private ref)				
Public	1.196	0.419	3.409	0.738
Age at Surgery	0.941	0.805	1.100	0.445
Race				
(White ref)				
Asian	0.336	0.032	3.503	0.362
Black/African American	0.458	0.097	2.168	0.325
Other	0.793	0.174	3.609	0.764
Unknown/Declined	0.538	0.051	5.637	0.605
Ethnicity				
(Non-Hispanic or Latino ref)				
Hispanic or Latino	0.879	0.176	4.391	0.875
Language				
(English ref)				
Spanish	2.459	0.464	13.022	0.290
Other	1.654	0.145	18.882	0.400
Model Characteristics				
P-Value	0.563			
R^2	0.122			
F	0.85			

* Boldface P values denote statistically significant difference between groups (P < .05).