

Black Patients are Less Satisfied with the Process of Care following Primary Hip and Knee Arthroplasty: A Retrospective Study

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INTRODUCTION: Patients' postoperative satisfaction related to their hospital experience is important to patient care, hospital reimbursement, and comparison between hospitals. The Press Ganey (PG) inpatient survey is commonly administered to assess patient satisfaction with the process of care. However, whether patient PG survey scores following primary unilateral hip and knee arthroplasty are associated with a patient's race and socioeconomic status (SES) is unknown. Our aim was to determine whether patient PG survey overall assessment scores differ by race and SES.

METHODS:

We linked data for patients in our hospital's hip and knee arthroplasty registries having surgery from July 2010–February 2012 to their PG survey responses. Patients having primary unilateral surgery of Black or White race who resided in 3 states in the northeast at the time of surgery were included in the analysis. Those having bilateral surgery or multiple procedures during the arthroplasty admission were excluded. The primary outcome variable was PG overall assessment score, calculated as the mean of a patient's ratings for the three questions in the Overall Assessment section of the PG survey and dichotomized as either completely satisfied (score of 100) or not completely satisfied (score <100). Primary payer was used as a proxy for patient SES. Multivariable logistic regression was performed for the hip and knee cohorts separately to determine if patient race and primary payer were associated with not being completely satisfied, adjusting for other patient factors (age, sex, and American Society of Anesthesiology (ASA) score).

RESULTS:

There were 2,516 hip patients and 2,113 knee patients with PG overall assessment scores included in the analyses. Black patients were more likely to be not completely satisfied compared to White patients in both cohorts [hip (odds ratio (OR) 1.64; 95% confidence interval (CI) 1.03-2.61, p=0.04)]; [knee (OR 1.83; 95% CI 1.16-2.88, p=0.01). In the hip cohort, patients between 70-79 years old (OR 1.71; 95% CI 1.09-2.67, p= 0.02) and older than 80 years (OR 2.00; 95% CI 1.20-3.32, p<0.01) were more likely to be not completely satisfied. In the knee cohort, patients 50-59 years old (OR 0.56; 95% CI 0.33-0.97, p=0.04) and 60-69 years old (OR 0.57; 95% CI 0.33-0.96, p=0.03) were less likely to be not completely satisfied compared to patients <50 years old. Patient sex, ASA status, and primary payer were not associated with complete satisfaction in either cohort.

DISCUSSION AND CONCLUSION:

In both cohorts, Black patients were less likely to be completely satisfied compared to White patients. Patient SES, measured as primary payer, was not associated with complete satisfaction. More research is needed to investigate other factors such as perceived staff courtesy and baseline pain and function to understand why these disparities exist.

Table 1 Press Ganey Inpatient Survey Overall Assessment Questions and Values Assigned

Questions	Survey response	Likert Scale Score	Value Assigned
How well staff worked together to care for you	Very poor	1	0
Usefulness of your recommendation to the hospital to others	Poor	2	25
Overall rating of care given at hospital	Fair	3	50
	Good	4	75
	Very good	5	100

Note: Press Ganey inpatient survey uses a 1-5 point Likert scale which we converted into a percentile based on the literature (100 = completely satisfied and 0 = not completely satisfied).

Table 2 Hip Cohort Logistic regression results: Likelihood of not being completely satisfied with the process of care (*PG <100% score)

Variable	Reference	Level	Odds Ratio	95% Confidence Interval	p-value
Age Group	<50	50-59	1.02	(0.69-1.50)	0.939
	<50	60-69	1.04	(0.70-1.54)	0.858
	<50	70-79	1.71	(1.09-2.67)	0.019
	<50	80+	2.00	(1.20-3.32)	0.006
Sex	Female	Male	0.84	(0.69-1.02)	0.082
	White	Black	1.64	(1.03-2.61)	0.038
**ASA status	1	2	1.04	(0.70-1.55)	0.832
	1	3	1.45	(0.91-2.29)	0.116
	1	4	<0.001	(0.00-***)	0.968
	1	5	<0.001	(0.00-***)	0.968
Primary Payer	Medicare	Medicaid	1.35	(0.26-7.01)	0.738
	Medicare	Other/Unknown	1.24	(0.94-1.64)	0.126
	Medicare	Private	1.13	(0.61-2.10)	0.688

*PG, Press Ganey

**ASA, American Society of Anesthesiologist (ASA) physical status classification

***>0.001

Table shows that Black patients in the hip cohort were more likely to be not completely satisfied with the process of care as measured by Press Ganey overall assessment scores compared to White patients.

Table 3 Knee Cohort Logistic regression results: Likelihood of not being completely satisfied with the process of care (*PG <100% score)

Variable	Reference	Level	Odds Ratio	95% Confidence Interval	p-value
Age Group	<50	50-59	0.56	(0.33-0.97)	0.039
	<50	60-69	0.57	(0.33-0.96)	0.034
	<50	70-79	0.63	(0.36-1.11)	0.133
	<50	80+	0.97	(0.53-1.77)	0.912
Sex	Female	Male	1.03	(0.83-1.26)	0.816
	White	Black	1.83	(1.16-2.88)	0.010
**ASA status	1	2	1.23	(0.60-2.51)	0.580
	1	3	1.36	(0.66-2.82)	0.419
	1	4	<0.001	(0.00-***)	0.977
	1	5	<0.001	(0.00-***)	0.983
Primary Payer	Medicare	Medicaid	<0.001	(0.00-***)	0.983
	Medicare	Other/Unknown	0.87	(0.65-1.17)	0.362
	Medicare	Private	1.01	(0.57-1.78)	0.983

*PG, Press Ganey

**ASA, American Society of Anesthesiologist (ASA) physical status classification

***>0.001

Table shows that Black patients in the knee cohort were more likely to be not completely satisfied with the process of care as measured by Press Ganey overall assessment scores compared to White patients.