



University of California
San Francisco

Higher Patient Expectations Predict Greater Patient Satisfaction and Patient Reported Outcomes in Total Hip Arthroplasty Patients: a Prospective Multi-Center Study

Deeptee Jain, MD¹, Ilya Bendich, MD, MBA¹, Long-Co Nguyen, BS¹, Long Nguyen, BS¹, Courtland Lewis, MD², James Huddleston, MD³, Paul J. Duwelius, MD⁴, Brian Feeley, MD¹, Kevin J. Bozic, MD, MBA^{1,5}

¹Department of Orthopaedic Surgery, University of California, San Francisco, San Francisco, CA ²Orthopaedic Associates of Hartford, Hartford, CT ³Stanford University, Palo Alto, CA ⁴Orthopaedic + Fracture Specialists, Portland, OR ⁵Dell Medical School at The University of Texas at Austin, Austin, TX

DISCLOSURES

- Deeptee Jain, MD: None
- Long-co Nguyen, BS: None
- Ilya Bendich, MD, MBA: None
- Long Nguyen, MD: None
- Courtland Lewis, MD: Biomet: research support
- James Huddleston, MD: AAOS: Board or committee member, AAHKS: Board or committee member, American Knee Society: Research support, Biomet: Paid consultant; Research support, California Joint Replacement Registry: Board or committee member; Paid consultant, Exactech, Inc: IP royalties; Paid consultant; Paid presenter or speaker, Journal of Arthroplasty: Editorial or governing board, Knee Society: Board or committee member, Porosteon: Paid consultant; Stock or stock Options, Robert Wood Johnson Foundation: Research support, Zimmer: Paid consultant; Paid presenter or speaker
- Paul Duwelius, MD: AAOS: Board or committee member, Clinical Orthopaedics and Related Research: Editorial or governing board, Journal of Bone and Joint Surgery - American: Publishing royalties, financial or material support, Operation Walk-Freedom to Move CEO: Board or committee member, Providence Orthopedic Foundation & Director of Providence Orthopedic Institute: Research support, Signature Health Care: Paid presenter or speaker, UniteOR: Stock or stock Options, Zimmer: IP royalties; Paid consultant; Research support
- Brian Feeley, MD: AAOS: Board or committee member, AOSSM: Board or committee member, Knee: Editorial or governing board
- Kevin Bozic, MD: AAOS: Board or committee member, American Joint Replacement Registry: Board or committee member, Centers for Medicare and Medicaid Services: Paid consultant, Harvard Business School: Paid consultant, Orthopaedic Research and Education Foundation: Board or committee member, Yale-New Haven Center for Outcomes Research: Paid consultant

INTRODUCTION



THEORY

1. Minimizing discord between expectations and outcome is the most important in predicting satisfaction
2. Higher expectations predict higher satisfaction – placebo, optimism

PURPOSE

1. To understand variables that impact patient expectations
2. To study the effect of patient expectations on patient reported outcomes, fulfillment of expectations, and satisfaction

METHODS

- Prospective study, 4 institutions, primary THA
- Demographics
- Preoperatively:
 - Hospital for Special Surgery Hip Replacement Expectations Survey (HSS-HRES)
 - Functional PROs: SF-12, UCLA activity score, HOOS
- Postoperatively (6 months and 1 year)
 - The same functional PROs as preoperatively
 - Hospital for Special Surgery Hip Replacement Fulfillment of Expectations Survey (HSS-HRFES)
 - A satisfaction survey
- Step-wise multivariate regression models, variables with $p < 0.20$ on univariate analysis were included

Table 1: Study Demographics

Demographic	
Total enrolled	207
Follow up rate	
6 month	91%
1 year	92%
Age	64.7 +/- 10.3
Gender	
Female	97 (47%)
Male	110 (53%)
Education	
High school degree/GED	29 (14.0%)
Some college	47 (22.7%)
College, 4 year degree	60 (29.0%)
Post graduate degree	65 (31.4%)
BMI	28.0 +/- 4.8
Work status	
Working	105 (50.7%)
Not working	97 (46.8%)

Large study, high follow up rate

Predictors of Preoperative Expectations

	B	p-value
Age	0.06	0.60
Gender	-4.4	0.057
Work Status	-7.5	0.002
UCLA activity score	-0.05	0.93
SF-12		
Physical	0.15	0.37
HOOS total	-0.27	0.002

Employment and increased hip disability predict higher preoperative expectations

Effect of Preoperative Expectations on Change in Postoperative Functional PROs

	6 months		1 year	
	B	p-value	B	p-value
UCLA Activity	0.03	0.001	0.02	0.004
SF-12 PCS	0.15	0.001	0.04	0.38
HOOS	0.2	0.008	0.07	0.257

Higher preoperative expectations predict greater improvement in 6 mo UCLA, SF-12, and HOOS and 1 yr UCLA scores postop

Predictors of Fulfillment of Expectations

	6 months		1 year	
	B	p-value	B	p-value
Expectations (preop)	0.30	<0.001	0.17	0.006
Age	-0.31	0.03	-0.36	0.001
Work	-1.6	0.52	-1.91	0.35
SF-12				
PCS	--	--	--	--
MCS	--	--	0.21	0.02

Higher preop expectations predict greater postop fulfillment of expectations

Predictors of Postoperative Patient Satisfaction

	6 months		1 year	
	B	p-value	B	p-value
Expectations (preop)	0.21	<0.001	--	--
Age	-0.13	0.20	--	--
Work	0.56	0.77	--	--
ASA	-2.1	0.20	-2.2	0.09
SF-12				
PCS	--	--	0.07	0.48
HOOS	0.075	0.19	0.06	0.24

Higher preoperative expectations predict patient satisfaction at 6 months postoperatively

CONCLUSIONS

Preoperative hip disability and being employed predict higher expectations for THA

Higher expectations predict:

```
graph TD; A[Higher expectations predict:] --> B[Greater improvement in functional outcome]; A --> C[Greater fulfillment of expectations]; A --> D[Higher patient satisfaction];
```

Greater improvement in functional outcome

Greater fulfillment of expectations

Higher patient satisfaction

DISCUSSION

1. Positively counsel patients preoperatively
2. Inclusion in payment reform discussion?

LIMITATIONS

1. Lack of ethnic and educational diversity

Thank you