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Snyder B, Yang W, Porter A, Franklin PD, Ayers DC. (2013). Pre-operative Emotional Health Affects Post-operative Patient Function but not Patient Satisfaction Following Primary Total Hip Arthroplasty. UMass Center for Clinical and Translational Science Research Retreat. Retrieved from https://escholarship.umassmed.edu/cts_retreat/2013/posters/9

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Title: Pre-operative emotional health affects post-operative patient function but not patient satisfaction following primary total hip arthroplasty.

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Introduction: Total hip (THA) and knee (TKA) arthroplasty are highly successful treatments for end-stage arthritis. However, a subset of patients experience suboptimal post-operative gain in function.^{1, 2} Previous studies have shown that pre-operative emotional health influences outcomes after TKA,³ but there is limited evidence on THA patients. We hypothesized that pre-operative emotional health does not affect patient satisfaction in THA patients.

Methods: A secondary analysis of an existing registry at UMass of primary THA patients between 2008 and 2011 was conducted. Baseline demographic, clinical, emotional health (SF-36 MCS), and physical health (SF-36 PCS) data were collected electronically at the pre-operative visit. Post-operative SF-36 MCS, SF-36 PCS, and satisfaction scores were collected electronically between 6 months through 2 years follow-up. Bivariate analyses and multivariate logistic regression models were used.

Results: The analysis included 316 primary THA patients with mean age 62±11 years, 55% female, mean BMI 30±5, mean PCS 31±8, and mean MCS 51±11. Patients with lower baseline emotional health scores reported significantly reduced mean post-operative physical function and emotional health ($p<0.001$), but no significant difference in satisfaction with their surgical decision, pain, function, or expectations. Multivariate regression revealed that decreased age and increased baseline MCS and PCS were significantly correlated with higher post-operative outcome measures, but patient satisfaction was independent of all baseline variables ($p<0.05$). Patients with baseline MCS<50 (national norm = 50) had a mean 13±9 point increase in post-operative PCS, with 46% of these patients reporting PCS>45 (indicating excellent function, national norm = 50); whereas patients with baseline MCS≥50 had a mean 17±11 point increase in post-operative PCS with 71% of these patients reporting PCS>45 ($p<0.001$).

Conclusion: In THA patients, post-operative emotional health and physical health are positively correlated with baseline emotional health, however post-operative patient satisfaction remains independent of baseline emotional health.

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