Eight-Year Trends in Patient-Reported Outcomes Following Primary Total Hip Arthroplasty: Analysis of Nearly 10,000 Patients (2016-2023)

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INTRODUCTION: Contemporary assessment of total hip arthroplasty (THA) success increasingly emphasizes patient-centered metrics rather than traditional surgeon-defined endpoints. The Hip Disability and Osteoarthritis Outcome Score (HOOS) family of instruments has emerged as the gold standard for evaluating subjective outcomes post-THA. With evolving surgical techniques, enhanced recovery pathways, and shifting patient demographics toward younger, more demanding populations, understanding temporal patterns in functional recovery becomes paramount. Modern outcome evaluation incorporates validated benchmarks including minimum clinically important difference (MCID), patient acceptable symptom state (PASS), and substantial clinical benefit (SCB) to determine clinical meaningfulness beyond statistical significance. This study aims to investigate chronological trends in one-year HOOS-based patient-reported outcomes following primary THA, specifically examining pain relief (HOOS Pain), physical function (HOOS PS), and global hip function (HOOS Jr) across an eight-year period while analyzing achievement rates of established clinical significance thresholds.

METHODS: A cohort analysis utilizing the Orthopaedic Minimal Data Set Episode of Care (OME) database, a prospectively maintained registry system designed for cost-effective, scientifically valid, and scalable PROM data capture. The OME database employs standardized follow-up mechanisms and electronic capture systems (tablets/smartphones) for point-of-care data collection. Patients undergoing primary THA between 2016-2023 were included, with validated HOOS questionnaires administered preoperatively and at 12-month follow-up. Primary endpoints included absolute score changes and proportional achievement of MCID (Pain: 8.35, PS: 9.47, Jr: 7.76), PASS thresholds (Pain: 80.6, PS: 83.6, Jr: 76.8), and SCB (Pain: 40, PS: 29.3, Jr: 32.3).

RESULTS:

One-year HOOS Pain scores remained stable from 2016 to 2023 (median 95.0, IQR 80.6-100; p=0.249). MCID achievement rates for Pain were high and stable (96.5% in 2016 to 96.3% in 2023, p=0.326). The proportion of patients achieving PASS for Pain was also high (88.3% in 2016 to 90.9% in 2023) and did not significantly change over time (p=0.133). However, the percentage of patients surpassing SCB thresholds for Pain did not significantly improve (73.7% in 2016 to 77.5% in 2023, p=0.116). HOOS PS scores significantly improved from a median of 91.2 (IQR 80.0-100) in 2016 to 95.4 (IQR 87.3-100) in 2023 (p=0.003). MCID achievement rates for PS remained high (92.7% in 2016 to 90.4% in 2023, p=0.100). The proportion of patients achieving PASS for PS significantly increased over time (74.1% in 2016 to 81.5% in 2023, p<0.001), as did the percentage surpassing SCB thresholds (74.1% in 2016 to 81.5% in 2023, p<0.001). HOOS JR scores were stable from 2016 to 2023 (median 92.3 to 85.3, p=0.234), with high MCID achievement rates (94.6% in 2016 to 95.2% in 2023, p=0.401). The proportion of patients achieving PASS for JR significantly increased (67.8% in 2016 to 70.9% in 2023, p=0.042), as did the percentage surpassing SCB thresholds (67.8% in 2016 to 70.9% in 2023, p=0.042).

DISCUSSION AND CONCLUSION: This study, encompassing nearly 10,000 THA patients over an 8-year period, demonstrates that modern THA consistently delivers exceptional one-year outcomes. Remarkably, over 95% of patients achieved MCID, and nearly 90% reached PASS for pain relief. Moreover, significant improvements were observed in physical function scores, with up to 81.5% of patients surpassing PASS and SCB thresholds in recent years. These findings underscore the effectiveness of THA in providing sustained, high-quality results and emphasize the importance of ongoing PROM monitoring to optimize outcomes for the rapidly growing THA population.