

Who should have total hip replacement?

*Use of patient-reported outcome measures in identifying
the indications for and assessment of total hip replacement*

AKADEMISK AVHANDLING

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien vid Göteborgs Universitet
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av

MERIDITH E GREENE

Fakultetsopponent:
Professor David G Lewallen
The Department of Orthopaedic Surgery, Mayo Clinic
Rochester, Minnesota, USA

AVHANDLINGEN BASERAS PÅ FÖLJANDE DELARBETEN:

- I. **Standard comorbidity measures do not predict patient-reported outcomes 1 year after total hip arthroplasty: Charnley class better predictor of outcomes.**
Meridith E. Greene, Ola Rolfson, Max Gordon, Göran Garellick, Szilárd Nemes
Clin Orthop Relat Res. 2015 Feb 21; Epub
- II. **Education Attainment is Associated With Patient-reported Outcomes: Findings from the Swedish Hip Arthroplasty Register.**
Meridith E Greene, Ola Rolfson, Szilárd Nemes, Max Gordon, Henrik Malchau, Göran Garellick
Clin Orthop Relat Res. 2014 Jun; 472(6):1868-76
- III. **Does the Use of Antidepressants Predict Patient Reported Outcomes Following Total Hip Replacement Surgery?**
Meridith E Greene, Ola Rolfson, Max Gordon, Kristina Annerbrink, Henrik Malchau, Göran Garellick
Manuscript
- IV. **Improved statistical analysis of pre- and post-treatment patient-reported outcome measures (PROMs): the applicability of piecewise linear regression splines.**
Meridith E Greene, Ola Rolfson, Göran Garellick, Max Gordon, Szilárd Nemes
Qual Life Res. 2015 Mar; 24(3):567-73
- V. **The EQ-5D-5L Improves on the EQ-5D-3L for Health-related Quality-of-life Assessment in Patients Undergoing Total Hip Arthroplasty.**
Meridith E Greene, Kevin A Rader, Göran Garellick, Henrik Malchau, Andrew A Freiberg, Ola Rolfson
Clin Orthop Relat Res. 2014 Dec 9; Epub
- VI. **Predicting who will be recommended for total hip replacement and those who will proceed: A tool for surgical recommendations.**
Meridith E Greene, Szilárd Nemes, Kirill Gromov, Andrew A Freiberg, Henrik Malchau, Ola Rolfson
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MERIDITH EMILIE GREENE

Department of Orthopaedics, Institute of Clinical Sciences,
Sahlgrenska Academy at University of Gothenburg
Gothenburg, Sweden 2015

Abstract

Background: Total hip replacement (THR) is a successful treatment for end-stage hip osteoarthritis (OA). Patients commonly seek this treatment to improve physical function, diminish pain, and ultimately to increase health-related quality of life (HRQoL). In recent years, patients have been asked to self-assess these areas using patient-reported outcomes measures (PROMs) both before and after treatment. Combining PROMs with national registers allows identification of factors that may influence how a patient will do after treatment. Detection of factors influencing poor outcomes after elective THR is important for understanding how to improve the effectiveness of this treatment.

Objectives: These works aimed to identify patient factors that contribute to better or worse patient-reported outcomes (PROs) after THR and to identify the most influential patient factors on surgical recommendation. In doing so, new PROMs were explored, as were various methodologies for investigating these types of data.

Patients and methods: The first four papers utilized patients from the national Swedish Hip Arthroplasty Register (SHAR) while the last two papers include patients from the Harris Joint Registry (HJR). The influence of comorbid conditions, education, marital status, mental health, OA severity, and preoperative health states on

surgical recommendations and patient-reported HRQoL, pain, and satisfaction after THR was explored. A new version of the EQ-5D survey was investigated as was how best to treat the relationship between the preoperative and postoperative EQ-5D index scores.

Results: On average, PROs improved after THR. Those who started with worse scores tended to improve similar amounts to those with better preoperative scores; however, due to their starting point, they did not achieve scores that were as high after surgery. Individuals with greater musculoskeletal comorbidities, with low or medium levels of education, and a history of preoperative antidepressant use, were identified as being patients who began and ended with worse PROs. The patient's joint space width had the greatest influence on THR recommendations. The new version of the EQ-5D survey appeared to better measure HRQoL in both preoperative and postoperative patients. Less ceiling effects were seen and substantial utilization of the new answer options occurred particularly before THR surgery.

Conclusions: Patients at risk for poor outcomes can be identified through preoperative reporting of musculoskeletal comorbidities and their medical record. Clinicians are not discouraged from treating these patients, but rather are encouraged to discuss individual risk factors to aid in the decision-making process for the patient.

Key words: Patient-reported outcome measures, Swedish Hip Arthroplasty Register, Harris Joint Registry, total hip replacement, health-related quality of life, EQ-5D, surgical recommendations

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Correspondence to mgreene@mgh.harvard.edu, meridithemilie@gmail.com

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