

## Pain catastrophizing, depression, and anxiety in THA patients with differing radiographic severity

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## Abstract

**Title:** Preoperative Pain Catastrophizing, Depression, and Anxiety in THA Patients with Differing Radiographic Severity

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**Background:** Comorbid mood disorders and pain catastrophizing behavior in patients with hip osteoarthritis have been associated with worse pain scores and more functional limitations before and after undergoing a total hip arthroplasty (THA). There remain questions regarding the relationship between severity of hip disease and mental health factors on preoperative measures in patients with differing radiographic disease. The purpose of this study was to assess preoperative pain catastrophizing, depression, and anxiety scores in THA patients with less severe radiographic hip arthritis compared to those with more severe radiographic disease.

**Methods:** A total of 785 patients were enrolled in a prospective cohort of THA patients at a tertiary hip program over a 5-year period. Study participation consisted of preoperative and postoperative survey completion with a minimum of 1-year postoperative follow-up. The Pain Catastrophizing Scale (PCS) was used to assess for pain catastrophizing. The Hospital Anxiety and Depression Scale (HADS-A, HADS-D) was used to assess for anxiety and depression. Radiographic severity was assessed using preoperative radiographs and was graded with the Tönnis classification of osteoarthritis and joint space width.

**Results:** Preoperative and postoperative surveys were completed for 411 patients. Preoperatively, 58 patients (14.11%) had a clinically relevant PCS score, 72 patients (17.52%) had an abnormal HADS-D score, and 69 patients (16.79%) had an abnormal HADS-A score. Tönnis Grade 0/1 patients had more abnormal preoperative HADS-A scores than Tönnis Grade 2/3 patients (20.51% vs 11.11%,  $p = 0.036$ ). There were no statistically significant differences in the preoperative PCS ( $p = 0.104$ ) and HADS-D ( $p = 0.188$ ) scores between Tönnis Grade 0/1 patients and Tönnis Grade 2/3 patients.

**Conclusions:** Our study demonstrates that patients with less severe radiographic disease had greater anxiety scores. This suggests that patients with clinically relevant anxiety were more likely to undergo a THA earlier in the course of their hip pathology rather than continuing with conservative management until they progress to end-stage disease. There was no difference in pain catastrophizing and depression scores between groups of less and more severe hip disease.