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## Greater Co-morbidity Burden is Associated with Greater Pain and Disability at Time of Total Knee Replacement Among African American Patients

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**Title:** Greater co-morbidity burden is associated with greater pain and disability at time of total knee replacement among African American patients

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**Introduction:** The existence of racial disparities in total joint replacement (TJR) care is well established based on Medicare and VA data.<sup>1,3</sup> As compared to white patients, African American TJR patients have lower utilization rates, more pain, poorer function at the time of surgery, and higher post-operative complication rates.<sup>2,3</sup> We analyzed a national prospective total knee replacement (TKR) cohort to further investigate patterns of medical and musculoskeletal co-morbidities among African American and white TKR patients.

**Methods:** Descriptive analyses were performed on a national database (FORCE-TJR) of 3,313 TKR patients from 107 orthopedic surgeons. Data collected include patient sociodemographics (age, gender, race, education, insurance, household income, smoking status), modified Charlson co-morbidity scores, and pre-operative and post-operative pain and function scores (SF-36 PCS and MCS, WOMAC, KOOS/HOOS ADL score). To assess the total musculoskeletal pain burden, WOMAC pain scores were recorded for non-operative weight bearing joints as well as Oswestry low back pain scores. Multivariate models are in progress.

**Results:** Preliminary descriptive analyses demonstrate a higher medical co-morbidity burden in African American TKR patients as compared to whites (COPD, DM, smoking), as well as worse baseline pain (mean WOMAC pain score = 43.46 vs. 52.92,  $p < 0.001$ ) and function scores (mean PCS score = 31.43 vs. 33.17,  $p < 0.003$ ). After adjusting for age, sex, and BMI, stepwise linear regression models demonstrated that 39% of the variance in baseline WOMAC function scores is explained by co-morbidities, with pain in the non-operative joints as the principle explanatory factor.

**Conclusion:** Preliminary results demonstrate significant differences in medical and musculoskeletal co-morbidities that correlate with poorer pain and function scores in African American patients at the time of TKR.

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