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Level of Pain and Disability at Time of TKR across the Past 10 Years: Results from Two National Cohorts

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Introduction:
A recent analysis reported a growing numbers of younger US adults with knee pain consistent with osteoarthritis (OA), although parallel analyses of knee x-rays found no increase in the classic radiographic signs of OA. The accompanying editorial evoked the need to understand if surgeons are performing surgery at an earlier stage in the condition.[1] We compared pre-operative demographic and symptom profiles of a national US cohort of OA patients undergoing primary total knee replacement (TKR) in 2011-2012 with a national US cohort of patients from 2000-2004 to evaluate change, if any, in the timing of surgery as measured by patient pain and function.

Methods:
Following informed consent, the 2011-2012 national research study collected comprehensive data including demographic, comorbidity, and patient-reported pain and physical function, from a national sample of TKR patients. Comparable data from a national sample collected by one implant manufacturer between 2000-2004 were analyzed. Descriptive statistics compared the demographic and symptom profiles of the two cohorts.

Results:
There were fewer females in the 2011-2012 cohort (n=2363) compared to the 2000-2004 cohort (n=7144) (61.62%, vs. 66.72%)
The 2011-2012 cohort was younger than the 2000-2004 cohort (66.7 years, vs. 68.12 years) and had a lower mean BMI (31.5 vs 32.3).
Pre-operative physical function scores (SF36/PCS) were 3 points higher in 2011-2012 than 2000-2004 (33.2 vs. 30.41).
When compared to the national PCS norm of 50 (SD=10), TKR patients from both time periods reported pre-operative function levels almost 2 standard deviations below the national norm.
There was no significant difference in terms of emotional health (SF36/MCS scores: 51.85 for the 2011-2012 cohort vs. 51.83 for the 2000-2004 cohort).

Conclusion: Despite the significant growth in the use of primary TKR in the last decade, especially among younger patients, TKR patients continue to report significant disability at the time of surgery.

1. Uyen-Sa D.T. Nguyen, Yuqing Zhang, Yanyan Zhu, Jingbo Niu, Bin Zhang, David T. Felson; Increasing Prevalence of Knee Pain and Symptomatic Knee Osteoarthritis: Survey and Cohort Data. Annals of Internal Medicine. 2011 Dec;155(11):725-732.