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PARTICIPATION IN INSTRUMENTAL ACTIVITIES OF DAILY LIVING AND SOCIAL ROLES FOLLOWING TOTAL HIP AND KNEE REPLACEMENT

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Purpose: Total joint replacement (TJR), a frequently performed procedure for hip and knee osteoarthritis, results in improved pain and physical function. Our prior work also demonstrated reduced limitations in participation in instrumental activities of daily living (IADL) and social roles following TJR. Given the known health benefits of participation in IADL and social roles, we investigated whether TJR influenced the frequency of participation and the factors associated with change in frequency.

Methods: Participants (hip (THR): 437; knee (TKR): 494) completed a survey pre-surgery and at 2 weeks, 1, 3, 6 and 12 months post-surgery that included symptoms, activity limitations, sports/leisure activities as measured by the HOOS/KOOS; and, frequency and limitations in participation (IADL and social roles) as measured by the Late Life Disability questionnaire. RANOVA was used to evaluate change over time. The association of age, sex, education, living alone, and work status with change in frequency over one year was evaluated by linear regression.

Results: THR: age range 31–86 years (mean=63) with 55% female; TKR: age range 35–88 years (mean=65) with 65% female. Significant improvements were demonstrated over time for symptoms, activity limitations and limitations in IADL and social roles. However, significant improvements did not occur in frequency of participation (average change 1 point (out of 10) for those with THR and 0.8 points for those with TKR; p > 0.05). The association between frequency and limitation change scores were modest (r = 0.47 for THR and r = 0.37 for TKR). Change in frequency was not associated with age, sex, living alone or being employed for either THR or TKR (p > 0.05 for all), except for employment in TKR (beta=0.09, p = 0.02). Looking at specific aspects of participation, we observed the same lack of change in frequency for social roles (social, leisure activities, exercise etc.) as with obligatory activities (taking care of one's home, personal care needs, household business and finances, etc.).

Conclusions: Despite large improvements in symptoms and disability, frequency of participation in IADL and social roles did not change following TJR. This is concerning given the known health benefits of these activities and the young age of many having TJR. Future research needs to explore why frequency in participation does not improve following TJR.

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TOOL FOR PATIENT SELECTION TO OPTIMIZE PATIENT-REPORTED OUTCOMES FOLLOWING TOTAL JOINT ARTHROPLASTY

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Purpose: When medical management of hip or knee arthritis fails, total joint arthroplasty (TJA) is recommended. On average, TJA outcomes are good to excellent, but significant variability has been observed. We previously identified predictors of suboptimal TJA outcome, defined as insufficient improvement in arthritis pain and disability. The aim of this study was to use these data to develop a tool for use at point of care to help select patients for TJA.

Methods: The initial model was based on analyses of data from a longitudinal population cohort with hip/knee arthritis in which annual interviews, from 1996 to 2008, were linked with health administrative databases to examine receipt of primary, elective TJA. Suboptimal outcome was defined as a pre-post change in WOMAC summary score < Minimal Important Difference (MID) proposed Wyrich et al (MID = 0.5 SD change of the mean difference in scores). Pre- and post-surgery WOMAC scores were those obtained at the interview closest in date and prior to the index TJA date, and closest in date to the end of the post-operative period (i.e. 6 months post surgery), respectively. Predictors of

suboptimal outcome were modeled using logistic regression; Akaike's Information Criterion was used to determine the size of the best predictive model, and then all possible subset regression was used to identify the final model of the selected size. Using the final multivariable model predicting suboptimal outcome, graphs were created to depict likelihood of suboptimal outcome based on the four final predictor variables: WOMAC summary score (higher scores worse); SF-36 mental health score (higher scores better); OA versus inflammatory arthritis (IA); and presence of other troublesome hips/knees.

Results: Of 166 cohort members who received a primary, elective TJA following their baseline interview and completed a post-TJA assessment, 48.7% met criterion for sub-optimal outcome (reduction in WOMAC score of <9/100 points). Four graphs were created: OA *with* and *without* other troublesome hips/knees (78.9% and 13.9%, respectively) and IA *with* and *without* other troublesome hips/knees (6.0% and 1.2%, respectively). Figure 1 shows the results for the largest group, those with OA and at least one other troublesome hip/knee. For individuals with IA, the "go" region was smaller and the "no go" region was larger, while the reverse was true for those with no other troublesome hips/knees ("go" region larger and "no go" region smaller). Results using alternative definitions for suboptimal outcome were similar.
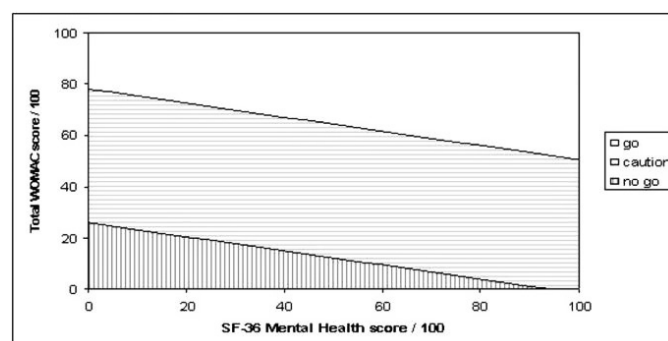

Fig. 1. Combinations of pre-TJA WOMAC summary and SF-36 mental health scores associated with probabilities of a suboptimal outcome for someone with OA and at lease one other troublesome hip/knee. The "go" area at the top of the graph represents people with <10% probability of a suboptimal outcome; the "no go" area at the bottom of the graph represents people with >90% probability of a suboptimal outcome.

Conclusions: Individuals with little pain and disability pre-surgery are likely to experience a suboptimal outcome; conversely, individuals with extreme pain and disability are likely to obtain a meaningful improvement in pain and/or function. Between the two extremes, patient mental health contributes to pain and disability in predicting the likelihood of a suboptimal outcome.

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RACIAL AND GENDER DIFFERENCES IN WILLINGNESS TO UNDERGO TOTAL JOINT REPLACEMENT: THE JOHNSTON COUNTY OSTEOARTHRITIS PROJECT

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Purpose: There are gender and racial disparities in the use of total joint replacement (TJR) in spite of similar needs, with women and African Americans (compared to Caucasians) undergoing this procedure less frequently. Studies of clinical samples report African Americans with osteoarthritis (OA) are less likely to report being willing to undergo TJR, but little is known regarding whether willingness differs according to gender. These analyses examined racial and gender differences in willingness to undergo TJR in a large, community-based cohort.

Methods: The sample included all n = 445 participants (mean age = 70±9 years, 74% female, 34% African American, 66% Caucasian) from the Johnston County Osteoarthritis Project who had symptomatic knee or hip OA and no prior arthroplasty in 2006–2010. Participants were asked, "If

your hip or knee pain were ever to get severe, how willing would you be to have surgery to replace your hip or knee if your doctor recommended it?" We compared willingness (probably or definitely willing) with those not willing (probably or definitely not willing; unsure; didn't know). We used t-tests and Chi-square tests to examine bivariate associations of demographic characteristics (race, gender, age, education, marital status, employment), health factors (Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score for the worst knee or hip, self-rated health, insurance status), and perceptions of TJR (knowledge about TJR, hospital and recovery time, residual pain and functional limitations) with willingness to have TJR. We conducted a multiple logistic regression model of willingness to have TJR, including all variables with bivariate associations at the p < 0.1 level. All analyses were unweighted.

Results: Willingness was similar for women and men (60% v 58%; p = 0.8), but only 60% as likely among African Americans compared with Caucasians (41% v 68%; p < 0.001). African Americans had worse expectations about surgical recovery (i.e., longer hospital and recovery times; less likely to expect "mild" or no pain and functional limitations after surgery) compared with Caucasians. In the adjusted model, African Americans were even less likely than Caucasians to report willingness (0.39; 95% CI = 0.22–0.61). The only other factor significantly associated with willingness in the adjusted model was having a lower WOMAC score.

Conclusions: Women in this sample did not indicate less willingness to have TJR than men, suggesting there may be some other factor(s) underlying lower utilization among women. There was a robust association of African American race with lower willingness that was not explained by adjustment for their worse expectations about surgical recovery. Other concerns about surgery or different treatment preferences may underlie these racial differences. These results underscore the importance of understanding and implementing best practices to promote informed decision-making regarding TJR.

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I DON'T KNOW WHAT TYPE OF ARTHRITIS I HAVE: A COMPARISON OF SELF-REPORTED OSTEOARTHRITIS WITH UNKNOWN TYPE OF ARTHRITIS

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Purpose: Osteoarthritis (OA) is the most common form of arthritis. Literature suggests that the prevalence of OA is often underestimated in population surveys, and people are often uncertain as to their diagnosis. The purpose of this study is to compare the characteristics of individuals reporting OA with those reporting not knowing their type of arthritis using a national population survey of people living with arthritis.

Methods: Data from the 2009 Survey on Living with Chronic Diseases in Canada (SLCDC) was used for analyses. The SLCDC is a nationally representative survey of 4,565 Canadians age >20 years, who reported having been diagnosed with arthritis by a health professional in the 2008 Canadian Community Health Survey, a general health population survey.

Results: Overall, 34.9% (5.6% of the population) of individuals with arthritis reported OA and 43.5% (6.9% of the population) reported that they did not know their type of arthritis. Comparing those who reported OA and those not knowing their type of arthritis, people reporting OA were more likely to be women (71.9% vs. 56.4% respectively), have higher education (64.2% vs. 55.3% respectively) and have slightly longer durations of symptoms. There were no other significant differences in terms of demographic characteristics or any indicators of severity of arthritis (pain, fatigue, activity limitation and impact on daily life). People reporting OA were more likely to have seen specialists (orthopaedic surgeons and rheumatologist), received information on how to manage their arthritis (62.8% of those with OA and 48.9% of those not knowing their type of arthritis) and reported receiving recommendations on management strategies for their arthritis. For instance, 56.4% of people with OA reported being recommended to engage in physical activity compared to 42.4% of those not knowing their type of arthritis.

Conclusions: A substantial proportion of the population with arthritis do not know what type of arthritis they have. The similarities between individuals reporting not knowing their type of arthritis and those with OA (particularly in terms of indicators of pain and disability), suggest at the very least the former group could benefit from OA self-management strategies and treatment as well as further education about their potential diagnosis.

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THE RELATIVE RISK OF KNEE OSTEOARTHRITIS AFTER KNEE INJURIES. RESULTS OF A METAANALYSIS

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Introduction: This metaanalysis was performed to evaluate the event rate of radiological knee osteoarthritis (ER ROA) after knee injuries (minimum 10 year follow-up). Furthermore was aimed to compare the ROA after knee injury with the ROA within the normal population.

Materials and Methods: At deadline 2010–02–28 was performed a systematic PubMed recherché by two independent investigators. The search strategy was (MeSH): [knee] and [osteoarthritis] and [special injury]. Furthermore the normal ROA was evaluated for the "normal population".

Criteria for inclusion were papers in German or English language, minimum follow-up and clear-defined radiological osteoarthritis grading accordingly to the Kellgren-Lawrence (KL) scale. A KL-grade of2+ was accepted as manifest radiological knee osteoarthritis.

The relative risk of ROA was calculated in fixed effect model and is expressed as relative risk (odd ratio OR (CI95%)).

Results: A total of 1.428 publications were found as result of the search the keywords [osteoarthritis] and [knee] and prevalence]. A total of 17 publications were included in the metaanalysis. The ROA of the "normal population" without adjustment to sex or age was 27.1 (CI95% 26.6–27.7)%.

The ROA after ACL-injury was 42.0 (CI95% 39.8–44.2)%. Compared with the normal population increases an ACL-injury the ROA significantly (OR = 2.5 (CI95% 2.3–2.7), p < 0.001). Patients after PCL-injury have a higher risk of ROA in tendency (OR = 1.3 (CI95% 0.8–1.9), p = 0.263.

Fractures near the knee joint increases the risk of ROA in tendency (OR= 1.2 (CI95% 1.0–1.3), p = 0.05). For all injury patterns (ligament injury or fractures) the associated meniscus injury increases the risk of ROA significantly.

Conclusions: Knee joint injuries are doubtless risk factors for an increased ROA. The most traumatologic outcome studies don't address the ROA. The most default of most studies is the lack of information about sex or age adjusted ROA. In future long-term follow-ups for evaluation of the age and sex adjusted ROA are needed for better understanding the progression a "posttraumatic osteoarthritis".

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STUDY ON THE PREVALENCE OF OSTEOARTHRITIS AND RELEVANT FACTORS

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Purpose: To understand the prevalence, epidemiological characteristics and risk factors of osteoarthritis in South China, a large scale investigation and analysis was conducted.

Methods: Totally 70516 residents aged 15 years and above were drawn from 6 communities under multiple stage cluster sampling. A household survey with questionnaire was carried out to differentiate both undiagnosed osteoarthritis patients and osteoarthritis patients with definite diagnosis. Those undiagnosed osteoarthritis patients were asked to carry further clinical examinations by orthopedists.

Results: The prevalence of osteoarthritis was 6. 11%. Osteoarthritis was significantly related to hypertension, diabetes mellitus. Age, gender and obesity were risk factors for osteoarthritis. Sports activities might have aggravating effects except swimming.

Conclusions: Aging and/or female seemed to be at high risk for osteoarthritis. Weight control should be encouraged to reduce the risks. For osteoarthritis patients, treatment to other chronic diseases should not be ignored.