

Older Adults with Osteoarthritis: Higher Mental Toughness Associated with Greater Improvement in Knee Pain/Functionality

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ABSTRACT

Older adults (the least physically active of all age groups) have a high prevalence of knee pathologies, such as osteoarthritis (OA). Physical activity (PA) is essential for managing OA through its anabolic, lipolytic, and anti-inflammatory effects. Pain and functional limitations can present challenges when performing PA. *Mental toughness* (MT) is associated with higher success when pursuing exercise/PA goals, but little is known about its role in rehabilitation settings. MT has been primarily researched cross sectionally. MT can be developed. **PURPOSE:** To examine the relationship between MT and knee pain/functionality via a longitudinal design in older adults with OA who underwent knee surgery. **METHODS:** The sample ($n = 52$; $M_{age} = 71.5$, $SD = 8.5$; females = 39) consisted of active patients who had a diagnosis of OA and underwent surgery. The Oxford Knee Score (OKS) was administered to assess knee function/pain and the Mental Toughness Index (MTI) to assess MT levels. We chose a multilevel growth model to examine the change in the OKS one day before surgery (T1) and one month (T2) and six months (T3) after surgery. We also used MTI scores as a time-varying covariate. First, we examined the proportion of variability in the three sets of variables due to between-individual differences via the intraclass correlation coefficient. Next, we estimated the growth model for the OKS. **RESULTS:** On average, the OKS increased from 11.3 (T1) to 23.1 (T2) to 37.0 (T3). The MTI scores did not change across time: the average scores were 39.0, 40.1, and 39.6, respectively. The growth model indicated that about 64% of the variability in OKS was due to between-patient differences. Of the variability that was attributable to differences within patient across time, MT accounted for about 39% of the variability. That is, there was a significant interaction between time and mental toughness: those with higher mental toughness scores had greater improvement in OKS ($\beta_{O \times MT} = 0.18$, $SE = 0.04$, $p < .001$). **CONCLUSION:** Overwhelming evidence exists that supports the benefits of PA in older adults. The disability burden of arthritis is rapidly escalating globally. Our results indicate that MT interventions might help fight the barriers of knee pain and functionality. Therefore, our findings may possibly inform rehabilitation psychology practices in that age group.