

A Case-Control Study on Knee and Lumbar-Spine Characteristics of Individuals with Knee Osteoarthritis

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Individuals with knee osteoarthritis (KOA) often present with lower back pain (LBP). However, the characteristics of knee and lumbar-spine in this cohort are less investigated. The objective of this study is to investigate knee and lumbar-spine characteristics of individuals with KOA compared to healthy individuals, and to examine differences in KOA patients with and without LBP. We assessed common clinical characteristics of knee and back namely pain intensity (measured by visual analogue scale), knee function (measured by Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)), LBP disability (measured by Oswestry Disability Index (ODI), and knee and back range of motion (measured by goniometer) of KOA and healthy people. We also compared the subgroups of KOA with LBP vs without LBP. Independent t and Mann-Whitney U tests were performed to compare characteristics. Twenty eight individuals (KOA, n=14; healthy, n=14) were analyzed. The mean age of participants was 53.6±10.6 years, and 92.9% were females. Knee pain (mean difference, MD=-7.1), LBP (MD=-3.0), knee functional disability (MD=-51.7) and LBP related disability (MD=-12.1) were significantly higher in individuals with KOA compared to healthy individuals. Further, knee flexion (MD=21.9⁰), lumbar side-flexion (MD=7.4cm), lumbar flexion (MD=3.1cm) and lumbar rotation (MD=2.5cm) were significantly lower in individuals with KOA compared to healthy individuals. With regards to KOA subgroups, mean age, back pain and ODI of KOA individuals with LBP were significantly higher ((p<0.05) than individuals without LBP, however none of other characteristics were statistically significant. A higher degree of disability in relation to both knee and back and a higher degree of knee pain and LBP intensity were observed in individuals with KOA compared to healthy individuals. Knee and lumbar spine movements were decreased in individuals with KOA than healthy individuals. LBP and disability of individuals with KOA were higher when they are presented with LBP to without LBP.

Keywords: Low Back Pain; Knee Osteoarthritis; Knee Pain; Back Pain; LBP