Patient Reported Outcomes Over the Course of a Competitive Basketball Season in Participants with and without a Previous Knee Injury History

Hartman CA, Morrison KE, Curtis N, Errickson A, Cattano NM: West Chester University of Pennsylvania, West Chester, PA

Context: Athletes who participate in sports with rapid acceleration and deceleration movements, and high impact biomechanical forces are at an increased risk for developing osteoarthritis (OA). Furthermore, prior joint injury is also a recognized risk factor for knee OA. While sport participation and joint injury are separate risk factors, the combination of the two determinants may further confound OA development and progression. Patient reported outcomes (PRO) utilization can potentially identify early symptoms prior to OA development. There is limited research in the sports medicine field regarding prospective PROs, specifically in athletes who have sustained a previous joint injury and have returned to continuous high impact sports. **Objective:** To examine knee PROs over a competitive basketball season, and to compare PROs between basketball athletes with a knee injury history (INJ) versus no previous injury (CON). **Design:** Prospective Cohort Study. **Setting:** Division II University **Participants:** Twenty-nine NCAA Division II men’s and women’s basketball players between the ages of 18 to 24 participated in the study. INJ participants (n=10; M=3/F=7) self-reported a history of a significant knee injury, and CON participants (n=19; M=10/F=9) denied any significant knee injury history. **Interventions:** The independent variables were knee injury history (INJ vs CON). Participants completed the Knee Osteoarthritis Outcome Score (KOOS) on a biweekly basis throughout the season. The primary aims were analyzed using separate 2 (group) x 8 (time) analysis of variance (ANOVA) with repeated measures for time, as well as multiple independent t-tests. A priori statistical significance was defined as \(P \leq 0.05\). **Main Outcome Measures:** Dependent variables were PRO scores in the 5 KOOS subscales (pain, activities of daily living [ADL] function, symptoms, sports and recreation function, and knee related quality of life [QOL]) at 8 biweekly time points during the season. Covariates that were considered were height, weight, and participation minutes (i.e. practices and games). **Results:** Significant group-by-time interaction effects were found for KOOS sport/recreation \((F_{4,2,114.4}=3.326, P=0.011)\) and QOL \((F_{2.9,80.6}=4.767, P=0.004)\). INJ participants reported significantly poorer scores for all KOOS subscales (pain:73.1±20.2; symptoms:63.9±25.9; ADL:81.6±19.0; sport/recreation:58.0±24.9; QOL:56.9±24.8) in comparison to CON participants (pain:93.7±8.4; symptoms:90.0±11.7; ADL:96.7±4.6; sport/recreation:89.2±11.6; QOL:89.9±11.3) when competitions started \((P \leq 0.002)\). **Conclusions:** These findings indicate that athletes with a knee injury history are reporting poorer outcome scores at various points over the course of the season. These scores affect them both with basketball activity and with their overall QOL. This may be related to an increased risk for possible OA development. These findings suggest that athletes with a previous knee injury history may benefit from interventions like rest or modified activity to help prolong the health of their knees. **Word Count:** 443