subsequent intra-articular knee injuries, and body mass index were included as covariates.
Results: Data from 126 participants were included. KOALA participants (n=76) were a median [range] 5.4 [4.9-9.6] years after ACL injury, while PrE-OA participants (n=50) were 6.6 [4.1-11.6] years after ACL injury. All participants underwent ACLR, but there was a greater proportion of concomitant meniscal injuries and meniscal surgery in the PrE-OA cohort (70%) compared to the KOALA cohort (46%). Participant characteristics, exposure and outcomes variables are summarized in Table 1. MRI cartilage lesions were not associated with ACL-QOL or EQ-5D scores (Table 2). For every 1-point improvement in KOOS-Function, the ACL-QOL improved by 0.37 (95% CI: 0.17, 0.57) points. For every 1-point improvement in KOOS-Pain, the EQ-5D improved by 0.38 (95% CI: 0.08, 0.69).
Conclusions: The results of this study suggest self-reported pain and function are more relevant for determining knee-related and health-related QOL than structural features of joint degeneration after ACLR. Knee-related QOL appears to be influenced by knee function and pain, while health-related QOL was not associated with knee function but was associated with knee pain. Future secondary prevention interventions which address knee function and pain should be developed and evaluated to determine the effect on QOL outcomes.

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THE RELATIONSHIP OF LOWER EXTREMITY PERSISTENT PAIN AND OSTEOARTHRITIS ON RUNNING AND PHYSICAL ACTIVITY IN RECREATIONAL RUNNERS: LARGE PROSPECTIVE COHORT STUDY (RUNNING THROUGH).

G.S. Bullock [1,2], J. Stocks [3,4], B. Feakins [5], T. Bestwick-Stevenson [3], S. Kluzek [3,4]. [1] *Wake Forest Sch. of Med., Winston-Salem, NC;* [2] *Ctr. for Sport, Exercise and Osteoarthritis Res. Versus Arthritis, Univ. of Oxford, Oxford, United Kingdom;* [3] *Univ. of Nottingham, Nottingham, United Kingdom;* [4] *Ctr. for Sport, Exercise and Osteoarthritis Res. Versus Arthritis, Univ. of Nottingham, Nottingham, United Kingdom;* [5] *Univ. of Oxford, Oxford, United Kingdom*

Purpose: Over the past forty years, running has become one of the most popular physical leisure activities. An estimated 50 million people in Europe participate in running to stay healthy. However, despite the popularity and potential health benefits, the injury incidence associated with running is significant. Furthermore, in a systematic review, runners reported increased prevalence of osteoarthritis compared to sedentary controls. Thus, there is a need to quantify symptomatic osteoarthritis and running habits in this population. The purpose of this study was to 1) Describe physical activity and running habits of recreational runners in the United Kingdom; 2) Investigate the association between lower extremity persistent pain on walking and running training load.
Methods: Baseline data from 'Running Through', a prospective cohort study of community runners, joggers and Nordic walkers were collected via electronic survey between February - October 2021. Weekly messages were sent to participants to capture weekly injury incidence. Garmin and Strava technology monitored total weekly running distance and running pace. Inclusion criteria were: 1) Age ≥18 years; 2) Participation in running activities. Exclusion criteria were: 1) Not able or willing to access the internet regularly; 2) Diagnosed immunocompromised disorder; 3) Diagnosed memory impairment; 4) Neurogenerative disorders; 5) Inflammatory arthritis; 6) Current pregnancy; 7) Postpartum of less than 6 months, 8) Trunk or lower extremity orthopedic surgery in the last six months. The collected baseline data included: age, body mass index, sex, running history, injury history, diagnosed lower extremity osteoarthritis, persistent lower extremity persistent pain reported as 'pain on most days of the last month.' Descriptive statistics were reported as mean (standard deviation), median (interquartile range), and percentage. Analyses of covariance (ANCOVA's) with 95% confidence intervals were performed to assess potential differences in weekly running training load and running pace between recreational runners who suffered from lower extremity persistent pain and those who did not. Confounders controlled for included age, body mass index, sex, years of running, and previous lower extremity injury history. Sensitivity analyses were performed stratifying by hip, knee, and ankle persistent pain.
Results: A total of 5,304 people clicked on the link and 2,606 participants [57% female, mean age 49.78 years (SD 12.69); Table 1] completed the survey. A total of 26.3% of participants reported persistent pain in a lower extremity joint (Hip = 9.4%; Knee = 13.7%; Ankle = 8.6%). Participants were followed for a median of 9 (1, 24) weeks. 40% of participants reported a lower extremity injury during follow up. Recreational runners that suffered from lower extremity persistent pain, reported running 3% less on roads, 3% more on trails, and 2% more on treadmills. There was no unadjusted or adjusted difference in weekly running training load between recreational runners that reported persistent lower extremity pain and those that did not [Unadjusted: -0.9 km per week (95% CI: -3.0, 1.3), p = 0.414; Adjusted: -0.1 km per week (95% CI: -2.1, 2.0), p = 0.957)]. There was an unadjusted and adjusted increase in running pace between recreational runners that reported persistent lower extremity pain and those that did not [Unadjusted: 12.9 seconds (95% CI: 4.3, 21.6), p = 0.003; Adjusted: 7.3 seconds per km (95% CI: 1.0, 14.4), p = 0.044)]. Sensitivity analyses demonstrated similar results for weekly running load [Hip: 1.3 km per week (95% CI: -1.9, 4.5), p = 0.426; Knee: 0.1 km per week (95% CI: -2.5, 2.7), p = 0.947; Ankle: 1.2 km per week (95% CI: -2.1, 4.4), p = 0.476] and running pace for the hip and knee [Hip: 11.4 seconds per km (95% CI: 0.5, 22.4), p = 0.043; Knee: 15.8 seconds per km (95% CI: 6.9, 24.7), p< 0.001]. No differences in running pace were observed for runners with persistent ankle pain [1.4 seconds per km (95% CI: -9.9, 12.8), p = 0.805] and those who did not report persistent ankle pain.
Conclusions: Lower limb pain is common amongst runners but they maintain high levels of physical activity. Recreational runners with persistent lower extremity pain report running similar weekly running distance when compared to recreational runners who do not report persistent lower extremity pain. However, these runners may run at a slower pace and choose softer running surfaces. Understanding the relationship between joint pain, running pace and surface could inform better strategy engagement for those who suffer from joint pain in regular running activities. These findings may be influenced by selection bias. Further research is required to understand the generalizability of these results to runners outside of the United Kingdom and people who opt for alternative exercise activities.

Table 1. Descriptive Statistics

Variable	All Participants (n = 2,603)	Lower Extremity Persistent Pain* (n = 685)	No Lower Extremity Persistent Pain (n = 1,918)
Age (years) §	49.8 (12.7)	50.6 (12.4)	49.5 (12.7)
Body Mass Index §	24.3 (4.3)	24.5 (4.2)	24.0 (3.7)
% Female	42%	41%	44%
Smoker			
Current	2%	1%	2%
Former	13%	14%	13%
Cigarettes/Day†	5 (1, 10)	12 (4, 21)	5 (1, 9)
Diabetes	1%	1%	1%
Asthma	14%	18%	12%
Taking Blood Pressure Medication	8%	9%	6%
Lower Extremity Osteoarthritis	1.5%	1.5%	0%
Medical Problems Affecting Running	19%	33%	15%
Days of Exercise/Week †	5 (4, 6)	5 (4, 6)	5 (4, 6)
Terrain Run on			
Track	4%	5%	4%
Road	72%	70%	73%
Trail	19%	21%	18%
Treadmill	1%	2%	<1%
Distances Ran			
One Mile	17%	19%	16%
5km	78%	77%	79%
10km	59%	55%	61%
Half Marathon	22%	21%	23%
Marathon	3%	4%	3%
Km per week †	22.5 (9.7, 35.3)	22.5 (9.6, 35.5)	22.4 (9.7, 35.1)
Running Pace (sec/km) †	6.2 (5.5, 6.9)	6.2 (5.6, 6.9)	6.0 (5.4, 6.7)

*Persistent pain was defined as reporting pain on most days of the last month
§mean (standard deviation); †median (interquartile range)

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LOWER-LIMB FUNCTIONAL PERFORMANCE IS PROGNOSTIC FOR OUTCOMES FOLLOWING ANTERIOR CRUCIATE LIGAMENT INJURY: A SYSTEMATIC REVIEW AND META-ANALYSIS

T. West, A. Bruder, K. Crossley, A. Culvenor. *La Trobe Univ., Bundoora, Australia*