Title: Investigating multi-joint pain and physical activity in runners and Nordic Walkers

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Background:

High training load, poor technique and insufficient recovery are associated with musculoskeletal injuries and joint pain in recreational runners and Nordic Walkers. Here we investigate recreational running and Nordic Walking training loads (distance and pace) and consider Non-Steroidal Anti-Inflammatory Drug (NSAID) use in people self-reporting current and chronic multi-joint pain.

Aim:

To investigate self-reported lower limb multi-joint pain and physical activity in runners and Nordic Walkers

Methods: Baseline data from 'Running Through', a prospective cohort study of community runners, joggers and Nordic walkers aged over 18 were collected via an electronic survey between February 2021–February 2022. Weekly messages were sent to participants to capture pain and injury incidence. Data collected through running smartwatches and mobile phone apps monitored total weekly running distance (kilometres per week) and running pace (minutes per kilometre). The collected baseline data included: age, sex, persistent joint pain (reported as 'pain on most days of the last month') and current joint pain in their hip or groin, knees, or ankles.

Respondents' data were analysed by the number of different joints they self-reported experiencing persistent pain in (zero, one, or more than one).

Descriptive statistics were reported as mean (standard deviation) and percentage. Odds ratios and 95% confidence intervals were calculated.

Results: The baseline survey was completed by 2,726 participants [57% female, mean age 49.78 years (SD 12.69)]. Participants were followed for a median of 9 (1, 24) weeks. 40% of participants reported a lower extremity injury during follow up.

Current lower joint pain was reported by 31.9% of respondents, specifically in their hips or groin (19.7%), knees (11.8%) and ankles (6.9%).

Runners with one painful point were 2.5 times (95% CI 1.9 to 3.4) more likely and runners with two or more painful joints were 3.2 times (95% CI 1.9 to 5.3) more likely to be taking regular NSAIDs compared to runners with no painful joints.

A total of 26.64% of participants reported persistent pain in a lower extremity joint for most days of the past month (Hip/Groin = 9.4%; Knee = 13.6%; Ankle = 9.1%). A total of 1983 reported not experiencing chronic joint point in the past month, 590 reported pain in one joint and 130 reported pain in two or more joints, with 23 did not respond to the questions.

Similar results for mean weekly running load were recorded despite the number of painful joints [zero painful joints: 22.5km per week (95% CI: 9.3 to 35.7); one painful joint: 21.4 km per week (95% CI: 9.6 to 33.3), two or more painful joints: 25.0 km per week (95% CI: 9.2 to 40.9). Similar running paces were also recorded [Zero painful joints: 6.3min/km (S.D 1.8); One painful joint 6.3min/km (S.D. 1.7); Two or more painful joints 6.5min/km (S.D. 2.1)]

Conclusion: Almost one-third of runners reported at least one currently painful lower limb joint with a quarter reporting experiencing chronic joint pain for at least a month. Recreational runners with one or multiple painful lower joints report similar weekly running distances and speed when compared to recreational runners who do not report persistent lower extremity pain. Runners maintain running pace and distance despite increasing pain which may be explained by the increasing use of NSAIDs to improve pain management. Future research should further investigate why and how exercise habits are maintained by runners despite experiencing musculoskeletal pain.

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