36   OUTCOME PREDICTORS FOR RECOVERY OF PATELLAR TENDINOPATHY IN JUMPING ATHLETES: AN INTERNATIONAL PROSPECTIVE COHORT STUDY

[1]Abdulhamit Tayfur*, [2]Dominik Zenner, [1]Stuart Charles Miller, [3]Hazel Screen, [1]Dylan Morrissey. [1]Sports and Exercise Medicine, William Harvey Research Institute, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, UK; [2]Institute of Population Health Sciences, Barts and the London School of Medicine and Dentistry, Queen Mary University of London; [3]School of Engineering and Materials Science, Queen Mary University of London

Introduction Patellar tendinopathy (PT) has poor outcomes, and we have no robust prognostic guides to understand who gets better, when and why. We aimed to identify which combination of self-reported factors best predicts PT recovery.

Materials and Methods A previously validated, reliable online questionnaire battery yielded data from an international sample of elite and non-elite jumping athletes with a one-year follow-up. Recovery was defined by availability status for training and competition. More than 100 bio-psycho-social, demographic and sports specific factors were collected and a multivariable cox proportional-hazards model constructed.

Results 128 athletes with PT (30.9±8.9 years; 77 males; VISA-P=61.5±16.2) provided 25,284 days at risk (198±141 days) for analysis. Recovery rate was 45% occurring around 6-month. The final multivariable model partially predicted PT recovery with acceptable model performance and internal validation (optimism-corrected Harrell's C discrimination=0.77 and Calibration Slope=0.86). The model showed that PT recovery is associated with a higher KOOS-PF score (lower severity; HR=1.03, 95%CI=1.02–1.05), a shorter time-off from sport (HR=0.93, 95%CI=0.87–0.99), feeling more rested after sleep (HR=1.93, 95%CI=1.13–3.28), not having concurrent tendon problems (HR=0.23, 95%CI=0.07–0.69), higher training duration (HR=1.05, 95%CI=1.01–1.10) and symptoms that can be modified by movement (HR=2.71, 95%CI=1.21–6.09).

Conclusion This is the first study investigating outcome predictors for PT recovery. The developmental statistical causal model showed that sports specific and biomedical variables partially predicted PT recovery. Demographic or psychosocial variables did not contribute to the model. These findings could enhance professionals' understanding of PT prognosis and clinical decision making.

37   WEEKLY ADDUCTOR SQUEEZE STRENGTH MONITORING IN MALE ACADEMY FOOTBALL PLAYERS: IS IT INFLUENCED BY GROIN PAIN ONSET?

[1]Matthew DeLang*, [2]James Craig Garrison, [3]Joseph P Hannon, [4]Lasse Ishøi, [4]Kristian Thorborg. [1]Right to Dream, Right to Dream Academy, Ghana; [2]Northwestern University, USA; [3]St. Louis Children's Hospital: Young Athlete Center, USA; [4]Sports Orthopaedic Research Center – Copenhagen, Hvidovre Hospital, Kettegård Allé 30, Denmark

Introduction Groin monitoring systems are a secondary prevention tool in youth football. Symptom screenings can be supported by objective findings, such as hip adduction squeeze strength. This study examined how groin pain influenced weekly squeeze strength in youth academy football players over a 14-week period.

Materials and Methods Weekly monitoring of youth football players consisted of groin symptom check-ins and long lever squeeze strength. Players who reported groin pain were stratified into the groin pain group while players who did not report pain remained in the no groin pain group. Baseline squeeze strength was retrospectively compared between the groups. Players with groin pain were examined via repeated measures ANOVA at four timepoints: baseline, one-week-prior to pain onset, pain onset, and return to pain-free.

Results 53 players were included (age 14.4±1.6 years). Baseline squeeze strength was not different between players in the groin pain (n=29, 4.35±0.89 N/kg) versus no groin pain group (n=24, 4.33±0.90 N/kg, p=0.83). Players with no groin pain maintained similar squeeze strength throughout 14 weeks (p>0.05). Compared to baseline (4.33±0.90 N/kg), players with groin pain had decreased squeeze strength at one-week-prior to pain onset (3.91±0.85 N/kg, p=0.003) and at pain onset (3.58±0.78 N/kg, p<0.001), but squeeze strength when pain subsided (4.06±0.95 N/kg) was not different than baseline (p=0.14).

Conclusion Decreases in groin squeeze strength exist in players with groin pain onset, and even manifest one-week prior to groin pain onset, compared to players without groin pain. Weekly squeeze strength may be an early marker for groin pain.

48   USABILITY TESTING OF A MUSCULOSKELETAL DIGITAL ASSESSMENT ROUTING TOOL: AN ITERATIVE CONVERGENT MIXED METHODS STUDY

[1]Cabella Lowe*, [1]Mitchell Browne, [2]William Marsh, [1]Dylan Morrissey. [1]Sports and Exercise Medicine, William Harvey Research Institute, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, Mile End Hospital, E1 4DG,, UK; [2]Risk and Information Systems Research Group, School of Electronic Engineering and Computer Science, Queen Mary University of London, 2 Newark Street, E1 2AT,, UK

Introduction Digital technologies improving clinical outcomes and efficiency are prioritized for development. We have developed a musculoskeletal Digital Assessment Routing Tool (DART) directing users to right care, first time. DART requires usability testing prior to clinical trials.

Materials and Methods An iterative-convergent mixed-methods design was used to assess and mitigate DART usability issues. 22 participants used 50 musculoskeletal presentations across 4 DART iterations during 5 testing rounds. Recruitment quotas for age, habitual internet use and English language ability were used. Constructs of the ISO 9241-210-2019 standard defined quantitative data collection, with user satisfaction measured by the system usability scale. Study endpoints were mitigation of significant usability problems and a mean satisfaction score of 80+ across a minimum of 3 testing rounds.

Results All test assessments gave a recommendation with no system errors. Usability problems reduced from 12 to zero. Mean assessment time was 5 minutes (range 1–18), 6 minutes for non-native English speakers. Differences in satisfaction scores were present between groups, expert internet users having the highest mean score (86.5, SD 4.48, CI 90% 1.78), compared with non-native English speakers (78.1, SD 4.60, CI 90% 9.17) and less experienced internet users scoring the lowest (70.8, SD 5.44, CI 90% 3.79). The mean score across all groups was 84.3 (84.3, SD 12.73, CI 90% 4.67), with