Development of a Survey Instrument for Quantification of Sprain and Strain Injury Risk Among College Athletes
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BACKGROUND AND PURPOSE
- Self-ratings of joint function and disability have primarily been used for documentation of treatment outcomes. 1
- The reliability and validity of survey responses have been clearly established for each of the following:
  - International Knee Documentation Committee (IKDC) subjective knee form: knee function (18 items)
  - Disability-Obesity Index (ODI): low back dysfunction (10 items)
  - Foot and Ankle Ability Measure – Sport subscale (FAAM-S): foot and ankle function (6 items)
  - Kerlan-Jobe Orthopaedic Clinic (KJOC) shoulder and elbow survey: shoulder/ elbow function (10 items)
- Modified versions of these instruments can be used to quantify sports injury risk. 2
- The 46 separate items of the 4 surveys present a substantial time burden that may affect response accuracy.
- The purpose of this study was to reduce the set of 46 survey items to a smaller set of strongest injury risk predictors for development of a concise screening instrument that will discriminate high-risk from low-risk athletes.

PARTICIPANTS AND PROCEDURES
- Participants were 188 NCAA Division I athletes in basketball, football, soccer, volleyball, and wrestling.
  - 139 Males (basketball, football, wrestling) and 49 Females (basketball, soccer, volleyball)
- Surveys that quantify joint function and disability have been shown to have value for categorization of injury risk.
- Participants were 188 NCAA Division I athletes in basketball, football, soccer, volleyball, and wrestling.
  - Males  (basketball, football, wrestling) and Females (basketball, soccer, volleyball)

RESULTS
- Survey item PAFS survey was developed from analysis of 46 FAAM-S, ODI, IKDC, and KJOC items.
- Surveys were recorded to create a 0-100 overall function or disability score.
- Occurrence of sprains and strains documented from PPE to 7 months afterward.
- Each survey score and each individual survey item demonstrated much greater specificity than sensitivity.
- Risk screening instrument designed to generate 0-100 total score for respective survey
- Receiver operating characteristic (ROC) analysis performed for total scores (0-100) and individual survey items
- Risk screening instrument designed to generate 0-100 total score for respective survey

CLINICAL RELEVANCE
- Surveys that quantify joint function and disability have been shown to have value for categorization of injury risk.
- Assessment of internal consistency of PAFS survey items and validation of prediction accuracy is needed.

REFERENCES