GNYACSM Abstract

Prognostic Validity of Professional Soccer Status by Anthropometrics and Repeated Jump Testing

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ABSTRACT

Soccer is characterized by intermittent high-intensity actions interspersed with lower intensity ones. Soccer clubs invest time and money to early identify and nurture potential professional players in the premise to maximize the return of their investment. Multidimensional talent identification models are proposed as best practice but are difficult to be implemented in the field. Explosive lower limbs strength assessment by vertical jumping (VJ) is used as a single predictor for future player status. Alternative to VJ, the repeated vertical jump test (RVJ) has been proposed, but its prognostic ability is still unexplored. **PURPOSE**: To analyze the prognostic validity of the RVJ obtained variables within professional (PRO) and under 19 years old (U19) male soccer players. It was hypothesized that anthropometric and performance related variables modeled on U19 will fail to predict the PRO status. **METHODS**: Forty-four participants (PRO=24, U19=20), after the end of the preseason, performed 15 RVJ aiming for highest jump (h_{JUMP}) with the minimum possible ground contact time. Group differences examined by *t*-test, binomial logistic regression (BLR) calculated the likelihood of each individual to be categorized as PRO or U19 and receiver operating characteristic (ROC) for prognostic validity of anthropometric and performance derivative values in predicting PRO status were used at $p < 0.05$. Statistical analyses were performed using the R-based software Jamovi version 2.3.3.0. **RESULTS:** PRO and U19 significantly differed in body height, mass, body mass index (BMI), h_{JUMP}, average jump height, and relative jump power. The prediction model was significant ($x^2(2) = 17.12$, $p < 0.001$). From the examined variables, only height and BMI were positive predictors of the PRO status ($b = 21.66$, SE = 8.20, $p = 0.008$ and $b = 0.94$, SE = 0.38, $p = 0.014$, respectively). The model was 73% accurate, 75% specific, and 71% sensitive, with acceptable area under the curve (AUC = 0.82). **CONCLUSION**: The RVJ test demonstrated acceptable discriminating prognostic validity between PRO and U19 soccer players. Until the applicability of the multidimensional models in predicting future player status is further established, field practitioners may use the simplistic and single dimensional RVJ testing to predict future status among male soccer players.