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Factors associated with return-to-play parameters among soccer athletes after anterior cruciate ligament surgery: A systematic review and meta-analysis

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Exercise and Quality of Life 2024, **16(3)**: A9

Background

The objective of the present study was to determine the association between demographic, sport-related, surgical, and psychological factors with return-to-play (RTP) outcomes among soccer players with a history of anterior cruciate ligament (ACL) reconstruction.

Materials and methods

A comprehensive search of Web of Science, Embase, and PubMed was carried out from inception to December 2024. Observational investigations that examined the relationship between demographic, sport-related, surgical, and psychological variables with RTP outcomes, including overall RTP rate, RTP at the preinjury level of competition, and RTP time, among soccer players who were subjected to the ACL surgery were considered as eligible for inclusion.

Results

A total of 16 studies were involved in the final analysis with 3978 respondents (mean age: 22.9 ± 4.5 years; 35% females). The obtained results demonstrated that male sex (odds ratio (OR) = 1.47 [95% confidence interval (CI) 1.15 to 1.86]), younger age (OR = 3.12 [95% CI 2.36 to 4.12]), elite level of play (OR = 7.46 [95% CI 3.30 to 16.85]), patellar tendon autograft (OR = 1.76 [95% CI 1.02 to 3.04]), and absence of cartilage injury (OR = 0.34 [95% CI 0.20 to 0.57]) were associated with increased overall RTP rate among soccer players following ACL reconstruction. With regard to the RTP time, only older age correlated with shorter periods between surgery of the examined ligament and return to sports fields (standardized mean differences = 1.15 [95% CI 0.39 to 1.90]). The findings referring to the qualitative analysis unambiguously indicated that psychological

readiness to return to sport was positively associated with the overall RTP rate of the analyzed population.

Conclusions

The current study revealed that male sex, younger age, elite level of play, patellar tendon autograft, and absence of cartilage injury were positively associated with overall RTP rate, while only older age correlated with earlier RTP time.