

https://dspace.org/

Screening tools as predictors of lower back and lower extremity injuries in ballet dancers: a scoping review

Kirby-Smith, Samantha

2024
https://hdl.handle.net/10539/37807

Downloaded from a DSpace repository. https://dspace.org/

ABSTRACT

Background:

Ballet dancers, as athletes, subject their joints to excessive ranges of motion under high load due to the specific choreography of this dance genre. Consensus within the literature is that ballet dancers experience high injury rates, specifically those which are chronic and over-use in nature. The locations most frequently affected by injury are the lower extremity and lumbar spine. There is a lack of consensus regarding valid and reliable screening tools or tests which have injury predictive capabilities.

Objectives:

To review the scope of literature on screening tools and their reliability in predicting lower back and lower extremity injuries in ballet dancers.

Method:

The methodology of this scoping review followed the recommendations of the PRISMA guidelines and the JBI reviewer's manual. This review utilised the PCC (population, concept, and context) framework. A systematic search of literature was conducted on CINAHL, Pubmed and the Cochrane Database of Systematic reviews. The search strategy, study selection, and data extraction processes were carried out by two reviewers. The PRISMA-ScR was used to ensure all advised requirements of the methodology were met.

Results:

Seven studies were found to meet the inclusion criteria and their selection process is illustrated in a PRISMA flow chart. The analysis of each study's results is presented in both tabular and narrative formats. Additionally, a table format was used to present the assessment of the methodological quality of each study. Screening tools identified which were predictive of lower extremity injury include: change in right foot length, ankle plantar flexion ROM, passive ankle inversion ROM, lower extremity muscle strength, right foot pronation, BMI, balance on demi-pointe, right modified knee valgus angle during fondu and temps leve, pelvic angle during right leg fondu, patellar grind test, patellar inhibition test, MCS and DAFT. There were no screening tools identified which were investigated in terms of their lower back injury predictive ability. Three screening tools were investigated for their reliability which include: Beighton's hypermobility score (excellent), right foot length change (moderate) and the MCS (excellent).

Conclusion:

There are few studies which are prospective in design which investigate lower extremity injury prediction and no studies were identified in this scoping review which investigate lower back injury prediction. Future researchers should ensure that a clear definition of injury and diagnosis of injury by an experienced healthcare profession is provided in prospective research on this topic. A change in right foot length of 0.5cm and right foot pronation demonstrated the greatest ability to predict lower extremity injury. Insufficient right ankle plantar flexion ROM, reduced lower extremity strength, modified right knee valgus angle during fondu, pelvic angle during temps leve, grind test, patellar inhibition test, MCS and DAFT show promise in injury prediction. Of these tests, right foot length change demonstrated moderate reliability and the MCS demonstrated excellent reliability.

Keywords:

Ballet, injury, prediction, lower extremity, lower back, screening tool, screening test