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Author(s)

Bliekendaal, S.; Fokker, Y.M.; Plomp, S.; Stubbe, J.H.

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PREVALENCE AND RISK FACTORS OF MTSS IN PETE STUDENTS

BLIEKENDAAL, S., FOKKER, Y.M., PLOMP, S., STUBBE, J.H.

AMSTERDAM UNIVERSITY OF APPLIED SCIENCES

Introduction

Medial Tibial Stress Syndrome (MTSS) is one of the most common overuse injuries in the lower extremities. MTSS often leads to long lasting complaints and reduced ability to participate in sport activities. This study aims to investigate the prevalence of MTSS and risk factors associated with MTSS in Physical Education Teacher Education (PETE) students.

Methods

A prospective study design was used. All subjects were first year PETE students and were followed from September to December 2016. Prior to the start all students underwent a physical screening which consisted of the following tests: the navicular drop test, hip external and internal range of motion (ROM), hip adduction and abduction strength, shin palpation for edema and pain, 3000 meter run test, and measurement of body height and weight. During the follow-up period students filled out a MTSS score questionnaire (scale: 0-10, with 0

as the lowest and 10 as the highest severity score) every 5 curricular weeks. The association between risk factors and MTSS injury risk was assessed using univariate logistic regression analysis for dichotomous variables (gender, MTSS history, shin pain, shin edema) and an independent samples t-test for continuous variables (navicular drop, height, weight, fat percentage, running performance, hip ROM, hip strength).

Results

A total of 257 subjects with a mean age of 19.6 (SD=2.2) for men (N=219) and 18.8 (SD=1.5) for woman (N=70) participated in this study. Preliminary results demonstrated a prevalence of MTSS of 7.2% prior to the start of the year. During the follow-up period prevalence increased to 15.7%. The average severity score was 2.4 (SD=2.1). At the end of the follow-up period 23.3% (N=60) of the PETE student suffered from MTSS.

The following factors were associated with MTSS: gender (women; OR=3.1, CI=1.6-5.7, $p<.01$), a history of MTSS (OR=8.6, CI=3.9-18.9, $p<.01$), pain at shin palpation (OR=2.7, CI=1.4-5.1, $p<.01$), and shin edema (OR=2.6, CI=1.3-5.9, $p<.01$). Significant differences between the MTSS and non-MTSS groups were found in the navicular drop ($p<.01$) and body height in men ($p<.05$). No significant differences were found for age, BMI, body length for women, body weight, fat percentage, 3000 meter running performance, hip exorotation ROM, hip endorotation ROM, hip abduction strength, and hip adduction strength.

Discussion

The prevalence of MTSS in PETE students is relatively high. Relevant risk factors are gender (women), a history of MTSS, shin pain at palpation, shin edema, navicular drop, and body length in men. These factors can be used to improve screening methods for identifying PETE students at risk for MTSS.