LONGITUDINAL ARCH HEIGHT AND LONGITUDINAL ARCH ANGLE AS RISK FACTORS FOR PLANTAR FASCIITIS: A MATCHED CASE-CONTROL STUDY

ABSTRACT (Limited to 300 Words):

The St. Catherine University IRB reviewed and approved this study. No funding was received and there are no conflicts of interest.

Background and Purpose: Previous literature consistently indicates that limited dorsiflexion and an elevated body mass index (BMI) are primary contributors to plantar fasciitis. However, there has been a lack of consensus regarding other factors such as measures of foot structure and arch height. Recent studies indicate that longitudinal arch height (LAH) and longitudinal arch angle (LAA) are highly reliable measures that correlate strongly with arch structure at mid-stance. The purpose of this study was to examine LAH, LAA, and other risk factors that may predispose an individual to plantar fasciitis.

Subjects: 22 (11 cases with plantar fasciitis, 11 healthy controls)

Methods and Materials: Eleven people with plantar fasciitis from local physical therapy clinics and the community (age range 26-61) were recruited for this study. A case was defined as a person with a diagnosis of plantar fasciitis, localized heel tenderness, and worse pain upon standing in the morning. From a sample of convenience, eleven controls were matched on age (± 5 years) and gender to each case. Ankle dorsiflexion, LAH, and LAA were measured along with a questionnaire to assess demographics, occupation, and activity variables. Analyses: Two sample t-tests were used to examine differences in continuous variables between cases and controls. Chi square was used to examine relationships between categorical variables.

Results: There were statistically significant differences in passive dorsiflexion (p=0.00004) and BMI (p=0.01) between cases and controls. Differences in participation in impact activities approached significance (p=0.07). However, no statistically significant differences were found between groups in LAA, LAH, arch height ratio, lunge test, or percentage of time spent on feet per day.

Conclusions: This study confirmed that elevated BMI and limited dorsiflexion are risk factors for plantar fasciitis. However, LAH and LAA were not significantly different between cases with plantar fasciitis and healthy controls.

Clinical Implications: Health care professionals may want to consider these risk factors when developing a rehabilitation program. This knowledge may be beneficial in preventing onset or recurrence of plantar fasciitis.