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Relationship between Static Foot Posture and Ankle Range of Motion among the Physiotherapy Undergraduates of Faculty of Allied Health Sciences, General Sir John Kotelawala Defense University

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Foot biomechanics play a significant role in the quality of standing and ambulation. Different types of foot posture and foot's loading characteristics can lead for alterations of foot structure which may cause long term debilitating effects that impair quality of life. Kinematics of the ankle joint complex is essential in human locomotion and as a result variations in the ankle range of motion (AROM) with static foot posture is a significant factor. The aim of this study was to determine the association between static foot posture and AROM among the physiotherapy undergraduates of FAHS, KDU. Ethical clearance was obtained from the Ethical Review committee of the FOM, KDU (PST/009 /IRSM C21). In this descriptive cross-sectional study, we evaluated 96 female and 29 male Physiotherapy undergraduates who completed the inclusion criteria during the study period of 2021 using nonprobability convenience sampling method with respect to static foot posture and AROM. Static foot posture was evaluated by Foot Posture Index (FPI) and Arch Index (AI). Modified Harris Mat and AutoCAD version 22 were used in calculating AI. A standard Goniometer was used to measure AROM. For the study analysis SPSS version 25 was used. The results, of our study revealed a positive correlation between plantar flexion and static foot posture. In AI left and right foot ($p=0.031$, $r=0.193$), ($p=0.030$, $r=0.195$) and FPI in left and right foot ($p=0.009$, $r=0.234$), ($p=0.024$, $r=0.201$) respectively were obtained. Accordingly, we concluded that early detection, self-awareness about the foot postures and how foot kinematics have been altered is essential in preventing future musculoskeletal disorders and improving quality of life.

Keywords: *static foot posture, ankle range of motion, foot posture index, arch index*