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Correlation between Clinical Measurements of Static Foot Posture in Young Adults

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Abstract : Identifying abnormal foot posture is important for prescribing appropriate management in patients with lower limb disorders and chronic non-specific low back pain. The normalized navicular height truncated (NNHt) and the foot posture index-6 (FPI-6) have been recommended as the common, simple, valid, and reliable static measures for clinical application. The NNHt is a single plane measure while the FPI-6 is a triple plane measure. At present, there is inadequate information about the correlation between the NNHt and the FPI-6 for categorizing foot posture that leads to a difficulty of choosing the appropriate assessment. Therefore, the present study aimed to determine the correlation between the NNHt and the FPI-6 measures in adult participants with asymptomatic feet. Methods: A cross-sectional descriptive study was conducted in 47 asymptomatic individuals (23 males and 24 females) aged 28.89 ± 7.67 years with body mass index 21.73 ± 1.76 kg/m^2. The right foot was measured twice by the experienced rater using the NNHt and the FPI-6. A sequence of the measures was randomly arranged for each participant with a 10-minute rest between the tests. The Pearson's correlation coefficient (r) was used to determine the relationship between the measures. Results: The mean NNHt score was 0.23 ± 0.04 (ranged from 0.15 to 0.36) and the mean FPI-6 score was 4.42 ± 4.36 (ranged from -6 to +11). The Pearson's correlation coefficient among the NNHt score and the FPI-6 score was -0.872 ($p < 0.01$). Conclusion: The present finding demonstrates the strong correlation between the NNHt and FPI-6 in adult feet and implies that both measures could be substituted for each other in identifying foot posture.

Keywords : foot posture index, foot type, measurement of foot posture, navicular height
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