Abstract

Background: The adapted arcometer has been validated for use in adults. However, its suitability for use in children can be questioned given the structural differences present in these populations. Objective: To verify the concurrent validity, repeatability, and intra- and inter-reproducibility of the adapted arcometer for the measurement of the angles of thoracic kyphosis and lumbar lordosis in children. Method: Forty children were evaluated using both sagittal radiography of the spine and the adapted arcometer. The evaluations using the arcometer were carried out by two trained evaluators on two different days. In the statistical treatment, the intraclass correlation coefficient (ICC), Pearson’s product-moment correlation, Spearman’s rho, the paired t test, and Wilcoxon’s test were used (=.05). Results: A moderate and significant correlation was found between the x-ray and the adapted arcometer regarding thoracic kyphosis, but no correlation was found regarding lumbar lordosis. Repeatability and intra-evaluator reproducibility of the thoracic kyphosis and lumbar lordosis were confirmed, which was not the case of inter-evaluator reproducibility. Conclusion: The adapted arcometer can be used to accompany postural alterations in children made by the same evaluator, while its use for diagnostic purposes and continued evaluation by different evaluators cannot be recommended. Further studies with the aim of adapting this instrument for use in children are recommended.

Keywords

Physical therapy; evaluation; spine; children; validity of tests.