

Oral presentation

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The influence of examiner experience on the reliability of surface topography measurements in patients with AIS

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Background

The Ortelius 800 is a device for measuring scoliosis curves in AIS using surface topography. Initial experience with this machine was found to be unreliable, but more recent techniques have been shown to greatly enhance the reliability and reproducibility of Cobb angle measurements. If this machine can be used to obtain consistent measurements, then in addition to its use by spinal deformity specialists, it could be employed as a screening device by school personnel or by general pediatricians. But, more widespread distribution of the Ortelius 800 would mean that less experienced examiners would be using the machine.

This study looked at the relationship between the experience of the examiner and the reliability of the Cobb angle measurements. If only very experienced examiners can obtain reliable measurements, then distribution of this tool should be more limited.

Methods

In this study, volunteer patients were measured by a clinician with more than 20 years experience, and then again by health science students with less than one year of physical examination experience. Measurements were compared to see the influence that experience had on the reliability of this screening tool.

Results and conclusion

The inexperienced examiners were able to perform measurements of leg length, thigh circumference, angle of trunk rotation and knee flexion with the same level of reliability as the experienced examiner. There were no statistically significant differences between the measurements performed by these groups.

When using the Ortelius 800 to measure scoliosis curves, the inexperienced examiners obtained measurements that were very similar to those of the experienced examiner, and both groups had standard deviations of these measurements that were between 1.2 and 3.8 degrees. Measurement of kyphosis yielded the same results, with both groups obtaining similar angular measurements for kyphosis, and having standard deviations that were between 1.2 and 4.4 degrees.

Our conclusion was that measurements from a group of inexperienced examiners did not differ significantly from those of an experienced examiner when using the Ortelius 800 device to measure scoliosis [1-4].

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