Trunk asymmetry is associated with dominance preference: results from a cross-sectional study of 1029 children.


Abstract

BACKGROUND: In some studies, an association has been reported between laterality of the curve in scoliotic adolescents and hand dominance; however, additional studies have to be performed to confirm these findings.

OBJECTIVE: The objective of this study is to evaluate the prevalence between trunk asymmetry and side dominance in hand, foot and visual laterality in adolescents.

METHODS: This was a cross-sectional study secondary analysis. In total, 1029 children (491 females) were enrolled from the Secondary School of Brescia, Italy, with a mean age of 12 (SD=0.9 years). All subjects underwent a screening program divided into three phases: Phase 1, collection of demographic and clinical characteristics; Phase 2, spine evaluation with a plumb line and Bunnell Scoliometer; and Phase 3, evaluation of side dominance of the eye, hand and foot with a 4-item survey.

RESULTS: Our data showed a prevalence of 0.43%, 1.01% and 0.87% for thoracic, thoracolumbar and lumbar curves, respectively, with a right-side dominance and a prevalence of 2.72%, 2.54% and 0.65% for thoracic, thoracolumbar and lumbar curves, respectively, with a left-side dominance.

CONCLUSION: The left-side dominance could have a prevalence on trunk asymmetry in thoracic and thoraco-lumbar curves. Our study suggests that the clinical evaluation of trunk asymmetry should be associated with the evaluation of laterality.

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KEYWORDS: Laterality; Scoliosis; Spinal assessment; Spinal posture

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