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Difference of vertical mandibular and trunk symmetry in north sumatera orthodontic patients between 11 and 25 year old: a cross-sectional study

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Objective: Developmental facial asymmetry is idiopathic and gradually develops over the years after birth and might become prominent during the adolescent period. Some studies reported that the skeletal basis of the postural disorders is developed at the same age as well as early detection of the mandibular asymmetries. The purpose of this study is to analyze the difference of vertical mandibular and trunk symmetry in subjects between 11 to 25 years old that sought orthodontic treatment at the Dental Hospital of Universitas Sumatera Utara, Medan, Indonesia.

Design: This is a cross-sectional study of 129 orthodontic patients that came to the Department of Orthodontics between June 2016 to March 2017. Exclusion criteria were subjects with history of congenital disease and previous orthodontics treatment or occlusal adjustment. Analyzing mandibular symmetry index based on Kjellberg's technique using the pre-treatment panoramic radiograph and trunk symmetry based on Adam's forward bend test. The vertical mandibular symmetry using Chi-square at 95% confidence level ($p < 0.05$). A chi-square test with p level 0.05 was used to evaluate the null hypothesis stating that there was a correlation of vertical mandibular and trunk symmetry in orthodontic patients.

Result: There was a significant difference between vertical mandibular and trunk symmetry ($p = 0.047$)

Conclusion: The bilateral symmetry of mandibular might influence the body equilibrium and vice versa in treatment malocclusion with mandibular asymmetry for growing patients. The necessity of examining the potentially present joint deviations with advanced malocclusion research in stomatognathic system should be considered as an interdisciplinary approach in the future.

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