COMPARISION OF DENTAL AND CERVICAL ESTIMATES OF CHRONOLOGICAL AGE IN CHILDREN WITH VARIOUS SAGITTAL SKELETAL MALOCCLUSIONS

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Background: The purpose of this study was to estimate the chronological age of children with various skeletal sagittal malocclusions, using dental and cervical age estimation methods, and to investigate if in skeletal Class I , II and III, dental and cervical age assessment methods produce comparable estimates of chronological age. Methods: The sample consisted of panoramic dental images and lateral cephalograms of 231 orthodontic patients (127 girls and 104 boys) aged 5.9 to 15.8 years, collected at the Department for Orthodontics, School of Dental Medicine, University of Sarajevo. Dental maturation was evaluated according to Willems and Demirjian methods, while sagittal skeletal malocclusions were evaluated using ANB angle from lateral cephalograms. The skeletal age was evaluated using Baccetti's cervical maturation method. The pre-pubertal (Cervical Stage 1 and Cervical Stage 2), pubertal (Cervical Stage 3 and Cervical Stage 4) and post-pubertal (Cervical Stage 5) growth phases were calculated for girls and boys separately. MANOVA was used to evaluate the relationship between skeletal malocclusions and dental and cervical age estimates. Results: Dental age methods overestimated chronological age. The Demirjian method overestimated the age of girls by 1.24±1.03 years, and age of boys by 0.80±1.03 years. The Willems method overestimated the age of girls by 0.36±0.98 years, and that of boys by 0.44±0.98 years. No differences were found in estimates of chronological age using skeletal pattern methods. Conclusions: There is no difference between dental and cervical maturation among sagittal skeletal growth patterns. While both dental age methods overestimated chronological age of sampled children, the Willems method yielded smaller estimation errors and is therefore suggested to be more appropriate for chronological age estimation than the Demirjian method.