

University of British Columbia

CRANIOFACIAL MORPHOLOGY AND SLEEP DISORDERED BREATHING IN CHILDREN

Aran Reza*, Almeida Fernanda, Pliska Benjamin, Chen Hui, Lowe Alan
University of British Columbia

Purpose: The aim of this study is to understand how the craniofacial morphology and severity of malocclusion can contribute to sleep disordered breathing (SDB) symptoms in children when controlled for age, gender and body mass index (BMI).

Methods and Materials: A total of 301 subjects with complete records were included in this study. 237 were preadolescents, 97 male and 140 female, (mean age 9.9 ± 1.6); and 64 were adolescents, 24 male and 40 female, (mean age 13.8 ± 0.9). All parents were asked to complete SDB questionnaires. Lateral cephalometric images were analyzed to assess cephalometric craniofacial features. Clinical examination performed to determine the Angle classification, Mallampati, tonsil size (Brodesky), and BMI.

Results: Data from 301 children were evaluated. Subjects were divided to two groups based on their age and each group was divided into two groups based on gender. Preadolescents presented with significantly higher incidence of hyperactivity, headache in the morning, snoring more often, and bedwetting compared to adolescents. Adolescents showed significantly higher daytime sleepiness, difficulty getting up, and impaired daytime function. Frequent snoring, and morning headache are more prevalent among females, while daytime sleepiness, and hyperactivity are more common among males. Craniofacial features that have significant relationship with SDB symptoms include: lower position of hyoid bone, retruded mandible, steeper mandibular plane angle, and retroclined lower incisors.

Conclusion: This study shows that craniofacial morphology but not the severity of malocclusion could be a potential contributing factor to the severity of SDB symptoms.

Keywords: *Craniofacial Morphology. Sleep Disordered Breathing. Questionnaire. Cephalometric Analysis.*