Correlation between Cervical Vertebral Maturation and Hand-Wrist Maturity Indicators in a sample of Lebanese population (Radiographical, Cross-sectional, comparative study)

By
Moammar Kamel Al-Rifai
(B.D.S 2011 Beirut Arab University)

Thesis
Submitted In Partial Fulfillment of the Requirements for the Degree of Master of Orthodontics

Department of Developmental Sciences, Division of Orthodontics
Faculty of Dentistry

Supervised by:

Prof. Essam Osman
Professor of Dental Materials
Faculty of Dentistry,
Beirut Arab University

Prof. Nadia El Harouni
Professor of Orthodontics
Faculty of Dentistry,
Alexandria

2017
Abstract:

The purpose of this study was to correlate radiographically the reliability of the use of cervical vertebrae maturation versus the conventional Hand Wrist Maturation in assessing the skeletal maturation stage in a sample of Lebanese adolescent population.

Material and methods: This study was carried out as a non-experimental, cross-sectional design. Forty patients between the age range of 9 to 15 years, were selected conveniently, fulfilling a specific inclusion and exclusion criteria from the outpatient clinic of Orthodontic Division, Faculty of Dentistry, Beirut Arab University. Participants were either undergoing orthodontic treatment or seeking orthodontic consultation. Correlation of cervical vertebrae stage (CS) and the conventional hand wrist maturation indicator (SMI) was tested using the spearman (r) test.

Results: It was found that there was a statistically significant positive correlation between cervical stage (CS) and skeletal maturity indicator (SMI) where $r=0.918 (p<0.001)$ for both genders. Higher coefficient of correlation in females than that of males was found.

Conclusion: In evaluating skeletal maturity, cervical vertebral maturation (CVM) method has a high correlation with the hand-wrist maturation (HWM) method. Thus CVM method can be a reliable alternative to the HWM method in assessing skeletal maturity.

Key Words: Cervical vertebrae, hand-wrist, skeletal maturity.