Digital Panoramic Estimation of Chronological Age and Gender Differentiation among Iraqi Adult Population in Relation to Morphological Variables of Canine Teeth

A thesis

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Submitted by

Hiba Abdul- Redha Habeeb

B.D.S

Supervised by

Assistant Prof. Dr. Ahlam A. Fattah
B.D.S, M.Sc in Oral Radiology

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Abstract

Background: Gender and age determination of skeletal remains is apart of many medico-legal as well as anthropological examination. Many anatomical structures have been studied, but the teeth and their measurements seem to be the most reliable method since teeth represent the most durable and resilient part of the skeleton.

Aim of the study: This study undertaken for estimating the chronological age and gender differentiation among Iraqi adults subjects based on various morphological variables of canine teeth using digital panoramic radiograph.

Material and methods: The sample in the current study consisted of 240 Iraqi patients attending to the dental radiological clinic at College of dentistry/ Babylon University taking panoramic radiographs for different diagnostic purposes, the study sample included both sexes with age ranged 20-60 years old, the following measurements of maxillary right canine have been taken with the aid of computer program (2008): Maximum tooth length, root length measured from midpoint of cemento-enamel junction to the root apex, pulp length, root width at cemento-enamel junction, root width at mid-root level, root width at mid-point between cemento-enamel junction and mid-root level, pulp width at cemento-enamel junction, pulp width at mid-root level, pulp width at mid-point between cemento-enamel junction and mid-root level, tooth area, pulp area. The data were subjected to statistical analysis using Statistical Package for Social Sciences version 13.

Result: the result of the current study showed that from the various parameters measured, the differences between real age and estimated age of subjects were not statistically significant except for root length and

pulp area which show significant difference between real age and estimated age with p-value 0.004 and 0.002 respectively. Gender has no influence on age estimation. All parameters measured for males and females show statistically significant difference for gender determination. **Conclusion**: there is a linear relationship of all morphological variables being measured of the right maxillary canine with the gender in Iraqi population. Age of the subjects can be estimated using regression equations including root length and pulp area for the examined tooth.