Mixed dentition analysis for Hong Kong Chinese

Keith Kwok-wah Yuen, BSc (Hon.), BDS, MDS;[b] Endarra Lai-king Tang, BDS, MDS, FHKAM (Dental Surgery);[a, c] Lisa Lai-ying So, BDS, MDS, FHKAM (Dental Surgery), FRCD (Canada), FRACDS (Orth)[d]

[a]Dr. Endarra L. K. Tang, 1002 Chuang's Tower, 30-32, Connaught Road Central, Hong Kong

[b]Dr. Keith Kwok-wah Yuen, dental officer, Department of Health, Government of Hong Kong Special Administrative Region, China.

[c]Dr. Endarra Lai-king Tang is in private practice in Hong Kong.

[d]Dr. Lisa Lai-ying So is in private practice in Hong Kong.

ABSTRACT

Using simple linear regression analyses, prediction equations for the combined mesiodistal crown diameters of canines and premolars based on lower incisor size were generated from 97 Hong Kong Chinese (51 males and 46 females, average age 12.31 years) out of a sample of 112. The mesiodistal crown diameters of the permanent teeth were measured using calipers and recorded to the nearest 0.01 mm. Significant sex differences were found for the combined diameters of the canine-premolar segments. The coefficients of correlation between combined diameters of canines and premolars and lower incisors ranged from 0.65 to 0.79. Significant sex differences of the regression equations were found and thus four simple linear regression equations were generated. Coefficients for the slope ranged from 0.58 to 0.66, and coefficients for the intercept ranged from 6.66 to 8.82. The R^2 values, standard errors of estimate, and absolute mean errors revealed that prediction models for females were less precise than those for males. Probability tables were constructed from the results of the present study. The prediction equations were found to differ from those of Tanaka and Johnston.[7] Accuracy in the mixed dentition analysis for southern Chinese would be improved by applying the prediction equations or probability tables generated from the present study.

KEY WORDS: Mixed dentition analysis, Prediction equations, Probability tables.