Analysis of dental casts of 6-8- and 12-year-old Kenyan children.

Abstract:

Dental plaster casts of 97 6-8-year-old and 173 12-year-old Maasai, Kikuyu, and Kalenjin children were studied. The Kikuyu are Bantu, while Maasai and Kalenjin are Nilo-Hamitic subjects. The variables measured were palatal depth (PD) and length (PL); maxillary and mandibular anterior arc circumferences (AC1) and (AC2), respectively; posterior arc circumferences (PC1) and (PC2), inter-canine (CC1), and (CC2); inter-molar (MM1) and (MM2) distances, and mandibular length (ML). The data were analysed using SPSS package. The mean values of all the variables were generally higher in the males compared with the females and significant sex differences in the means (P < 0.01) were found in AC1, PC1, PC2, CC1, CC2, MM1, and MM2 in the 12-year-old subjects. The means of all variables, except PL, ML, PC2, and CC2, increased from 6 to 12 years of age and significant differences in the means for age were found in ML, AC1, PC2, PD, MM1, MM2, and CC1. Mean maxillary inter-molar distance increased with age by 0.17-0.34 mm in the three groups. Mean values of mandibular variables were highest in the Kikuyu, while maxillary variables were highest in the Maasai. The Maasai casts showed a marked decrease in CC2, PC2, AC2, and ML compared with the Kikuyu and Kalenjin. Ethnic and sex differences in the dental arches may be masked by anterior tooth positions that are influenced by the dento-alveolar complex and soft tissues. Corresponding mandibular and maxillary variables were strongly correlated and anterior and posterior arc circumferences were correlated with inter-canine and intermolar distances. Details of the norms for dental arch dimensions and changes with age may allow for appropriate assessment of dental occlusion and treatment planning for Kenyan children.