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Mixed dentition space analysis for Indonesian Javanese children

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Abstract The purposes of this study were to determine the applicability of Moyers and Tanaka-Johnston prediction methods for Indonesian Javanese children, and to develop new regression equations for predicting the size of the canine-premolar segment based on the normative standard of mesio-distal crown diameters of the permanent teeth in Indonesian children. Two hundred and eighty five sets of dental casts of the permanent dentition were obtained from Indonesian Javanese children in Yogyakarta, Indonesia during 2000-2001. There were 143 males and 142 females aged 11.1 to 14.9 years. The mesio-distal crown diameters were measured with calipers to an accuracy of 0.05 mm. The statistical analyses were performed using computer software (SPSS 9.0 for Windows). This study confirmed that the use of Moyers and Tanaka-Johnston prediction methods for mixed dentition analysis among Indonesian Javanese children were unsuitable. Both methods underestimated the size of canine-premolar segments, with exception of the Tanaka-Johnston method in females. The combination of maxillary first molars and mandibular lateral incisors (Σ 6 2 2 6) showed relatively higher correlation with the actual size of Σ 3 4 5. The development of new linear regression equations with predictor Σ 6 2 2 6 for predicting the size of the canine-premolar segment was based on the normative standard of mesio-distal crown diameters of permanent teeth in Indonesian Javanese children. The newly developed regression equations are more accurate than the regression equation that uses predictor Σ 2 1 1 2 for mixed dentition analysis among Indonesian Javanese.

 Key words Indonesian Javanese, Mesio-distal crown diameter, Mixed dentition analysis, Regression equation

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