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Applicability of Tanaka-Johnston and Moyers mixed dentition analyses in Northeast Han Chinese

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Objectives: To assess the applicability of Tanaka and Johnston equations and Moyers prediction method in Han ethnic group of Northeast China and to develop the prediction equations for the same population.

Design: This work is a cross-sectional study.

Setting: Department of Orthodontics, School of Stomatology, Jiamusi University, Heilongjiang, China.

Participants: A total of 130 subjects (65 male and 65 female) aged 16-21 years from Han ethnic group of Northeast China were recruited from dental students of Jiamusi University and patients seeking orthodontic treatment at Department of Orthodontics, School of Stomatology, Jiamusi University. Ethnicity was verified to 2 previous generations by questionnaire.

Methods: Study models were fabricated from alginate impression and mesio-distal width of teeth were measured with Digital Vernier caliper. The predicted values obtained from Tanaka-Johnston and Moyers methods in both arches were compared with the actual measured widths. Based on regression analysis, prediction equations were developed.

Results: Tanaka and Johnston equations were not precise, except for the upper arch in males. However, the Moyers 85th percentile in upper arch and 75th percentile in lower arch predicted sum precisely in males. For females, the Moyers 75th percentile predicted the sum precisely for upper arch, but none of the Moyers percentiles predicted in lower arch.

Conclusions: Both Tanaka and Johnston equations and Moyers' method may not be applied universally without question. Thus it may be safer to develop regression equation for specific population. Validating studies must be conducted to confirm the precision of the newly developed regression equations.

Biography

Jangbu Sherpa has completed his Master's degree in Orthodontics and Dentofacial Orthopedics from Jiamusi University, China. He is currently working at Kanti Children's Hospital, Nepal. He is the Director of Khumbila Dental Clinic, Kathmandu, Nepal.

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