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Title: Validity and accuracy of three radiographic dental age estimation methods in Brazilians

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**Highlights**

- Application of three methods of age estimation by mineralization stages in Brazilians
- Liliequist and Lundberg method is more suitable to the Brazilian population
- Experts can use the equations for faster age estimation in Brazilians

**ABSTRACT**

**Objective:** To validate, analyse accuracy, and construct multiple regression formulae of three age estimation methods— Liliequist and Lundberg, Haavikko, and Mornstad—using mineralization stages of permanent teeth in Brazilians.

**Methods:** Panoramic radiographs of 1009 Brazilian children and adolescents (387 males and 622 females) aged 8-15.99 years were analysed using the aforementioned methodologies.

**Results:** The overall accuracy (Absolute Difference = AD and Dental Age-Chronological Age = DA-CA) of the methods was as follows: Liliequist and Lundberg, AD = 0.97 and DA-CA = -0.58; Haavikko, AD = 1.42 and DA-CA = -1.35; and Mornstad, AD = 2.48 and DA-CA = 0.78. After sex-based stratification, the values for males were as follows: Liliequist and Lundberg, AD = 0.91 and DA-CA = -0.45; Haavikko, AD = 1.80 and DA-CA = -1.75; and Mornstad, AD = 2.74 and DA-CA = 1.17. In females, the values were as follows: Liliequist and Lundberg, DA = 1.01 and DA-CA = -0.67; Haavikko, AD = 1.17 and DA-CA = -1.09; and Mornstad, AD = 2.31 and DA-CA = 0.53. The Liliequist and Lundberg technique predominated, followed by Haavikko and Mornstad when distinction was present between sex and age. Multiple

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