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Time of mineralization of permanent teeth in children and adolescents in Gaborone, Botswana

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Mineralization of permanent teeth can be used to assess the development and age of individuals. The most commonly used methods are based on an assessment of the developmental stages of the target group of teeth on one side of the lower jaw. When compared with children of European descent, less research of dental age from Sub Saharan Africa has been done. The aim of this study was to determine the chronology of mineralization of permanent teeth, by evaluation of development stages according to Demirjian and to evaluate the dental age, by using a self-weighted scores by Demirjian from the 1973, using the available sample of ortopantomograms of children and adolescents of African descent from the city of Gaborone, Botswana, with the aim of forming an appropriate sample to compare the development of the teeth of children and adolescents in this socio-geographic environments. The sample consisted of 661 (273 males and 388 females) analyzed panoramic radiographs of individuals aged 5-23 years. Developmental stages of the upper and lower left jaw of all permanent teeth in development were evaluated. Comparing between the sexes, an average age of each stage of development of permanent teeth, including third molars, it is evident that females generally are faster in development of permanent teeth, without statistical significance, for the most of developmental stages. Applying maturity scores of development by Demirjian in the first seven teeth in the lower jaw (167 males and 226 females aged 5 to 16 years) for calculation of dental age, dental age averaged overestimated by 0.62 years for females and 0.90 years for males.

Keywords: permanent teeth; mineralization; Botswana; Demirjian method