

The comparison of Demirjian and Kohler third molar classification for Indian ethnicity in Malaysia

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ABSTRACT

Malaysia has continuous influx of illegal worker and refugees without legal documents from various part of Indian continents (e.g. Bangladesh, Sri Lanka & Nepal) which many cases been referred to the Forensic Odontology Unit of Kuala Lumpur hospital for age assessment. In assessing the refugees, the chosen method for the assessment should be efficiently and accurately assess children with minimum risk of wrong diagnosis a minor as an adult. Also, a great number of unknown bodies without legal documents presumed to be of those coming from the Indian continents were referred to the Forensic Odontology Unit of Hospital Kuala Lumpur for age assessment as part of the identification process. This retrospective cross-sectional study aims to test the Kohler (1994) and Demirjian (1973) third molar classification system on the Malaysian Indian ethnicity for the attainment of the age of majority which is 18 years old. A number of digital and conventional orthopantomograms (OPG) of Malaysian patients from the Indian ethnicity aged 13 to 23 when the OPG was taken for diagnostic purposes were collected by convenience sampling from multiple oral surgery, orthodontic and paediatric dental clinics across the peninsular of Malaysia. Date of birth, nationality and ethnicity were checked from identification card of patients and their parents (for the paediatric patient). The inclusion criteria included those with at least one non-impacted, non-pathological third molar with no medical history to indicate any disturbance in dental development. A modified Kohler (1994) classification is proposed for guidelines. The OPGs are anonymised, blinded and randomised. The OPGs are being examined and scored by the first examiner for all the present third molars using the Kohler (1994) classification system followed by the Demirjian (1973) system. After some period, a number of OPGs will be randomly selected for inter-observer and intra-observer reliability for both methodologies. Data will be statistically analysed for the difference in discriminative capability of attaining the age of majority for the Indian ethnicity in Malaysia. Hypothetically, if the outcome is comparable to the two system and with other studies in the discriminative capability of the legal age, using both systems may increase clarity and accuracy in providing a legal opinion for the attainment of adult status to minimise the risk of overestimating the age of a child. Also, the result of this study can be used both on the living person and dead bodies.