"ESTIMATION OF AGE IN ADULTS USING DENTAL RADIOVISIOGRAPHY."

BY

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ABSTRACT

Introduction: Teeth play an important role in age estimation in forensic contexts. Traditionally, age estimation in adults has evaluated teeth using morphological and histological methods, which require tooth extraction and sectioning. While this may be feasible for assessing age in postmortem remains, it is not viable in living adults. Hence radiographic methods for estimating age has been recommended, which can be applied in living and the deceased. One such method was proposed by Kvaal et al. who, on a Norwegian sample, developed formulas for age estimation by examining the size of pulp using a number of length and width ratios of the tooth, root and pulp in subjects of different age-groups.

Materials and Methods: The present study has applied these formulas on an Indian sample (n=100) to verify the applicability of the formulas on the local population. Radiovisiographs (RVGs) were obtained using two techniques—paralleling and bisecting angle. The former was the technique used by Kvaal et al. for obtaining ·IOPAs in their sample, while the latter is the contemporary method of exposing radiographs in India. the RVGs were imported to a commercially available software programme for measuring the various tooth, pulp and root parameters.

Results: The results revealed gross underestimation of age (averaging between 15.62 and 20.99 years) on the Indian sample using Kvaal et al.'s formulas. The length and width ratios obtained on the Indian sample were then subjected to regression analysis with a view to ascertain their correlation to age as well as develop new age estimation formulas suited for Indians. The ratios for the present sample had relatively low correlation to age, indicating that the rate of secondary dentine deposition is not as regular as it is in certain Caucasian groups; however, the correlation was statistically significant. Regression formulas were developed on the

Indian sample and tested on a control sample of 10 cases. Kvaal's formulas were also tested on the control to compare with the effectiveness of the Indian formulas.

Conclusion: The comparison revealed superior age estimation ability of the Indian formulas developed in the present study, inferring that customised formulas developed on the local population are better suited for estimating age.