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IS THE FREQUENCY OF NON-METRIC DENTAL TRAITS DISTINCT IN INDIANS? A PRELIMINARY ANALYSIS BASED ON TOOTH ROOT NUMBER

Mahantesh M. Yeli, Ashith B. Acharya*

**Associate Professor and Head, Department of Forensic Odontology, S.D.M. College of Dental Sciences & Hospital, Sattur, Dharwad, Karnataka, INDIA*

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A The objective of the study was to generate preliminary frequency distribution of root number(s) of select teeth in Indians with a three-fold view—(1) compare the data to that of major population groups (or 'races'), (2) determine if a trend exists in allocating Indians to one of the major population groups based on root traits' occurrence, and (3) ascertain the necessity and use of population-specific data in categorising Indians. These have the potential for physical profiling of skeletonised remains of Indians in forensic and anthropological scenarios. Periapical radiographs of 211 adult Indian subjects were evaluated for the incidence of two-rooted maxillary and mandibular first premolar, three-rooted first and single-rooted second mandibular molars. In addition to population comparison of the root trait frequencies, Bayesian analysis was performed to assess the probability of assigning Indians to the various population groups. Two such analyses were undertaken — the first which excluded Indians and the second that included them. In both, the frequency of the highest probability (in %) categorising an Indian subject to the population groups was noted.

Two out of four root traits compared were outside the range available for different racial groups while one was on the fringes of existing world data. One was within the range available for different racial groups. The root trait frequencies were not similar to any specific geographic subdivision and each approximated a different race. Furthermore, Bayesian analysis which did not include Indian data in the cross-tabulation, showed no predilection of Indians to be allocated to one particular race, with probabilities of group prediction to the different races being similar, in particular Sub-Saharan Africa and Western Eurasia. On the other hand, Bayesian analysis which included Indian data in the cross-tabulation, showed a predilection to categorise Indians to the Indian group. The constellation of root trait frequencies in Indians appears to be relatively distinct from the major human races. This 'uniqueness' precludes grouping of Indians to any particular geographic subdivision and warrants the generation of exclusive Indian database for use in anthropological and forensic identification.

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