



G14 Establishing the Necessity for Ethnic Markers in Forensic Odontology: A Literature Review

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After attending this presentation, attendees will understand the use of radiographic markers, in addition to skeletal markers that are unique to African Americans, as a benchmark to improve the outcome for the identification and resolution of cases in which forensic odontology is applied, as well as broader forensic applications, if appropriate.

This presentation will impact the forensic science community by determining if the need exists for, or improving the efficacy of, an already-existing protocol for ethnic markers for African Americans in forensic odontology.

The subject to be evaluated is the necessity for ethnic standards and/or protocols for skeletal and radiographic markers or the combination thereof. The specific application for African Americans, as well as other ethnic groups, is an effort to systematize and improve accuracy and focus in forensic odontology.

Radiographs, as well as skeletal and odontogenic markers, in forensics have the objective of identifying subjects via dental records for criminal investigations, missing persons, and antemortem and postmortem comparisons for identification. This challenge has been primarily addressed by using radiographs.^{1,2} These systems can be applied to a closed and small population, which would be ideal, for example, in a plane crash with known passengers, but not-so-ideal in a missing persons cold case in which only skeletal remains are available at best. Hence, in the case of one study, small experimental databases are encouraged.¹ In multiple forensic scenarios, dental records may or may not be available.

There are other challenges encountered when depending primarily on radiographs, including, but are not limited to, poor-quality radiographs and the length of time between antemortem and postmortem images. This does not account for developmental and/or restorative changes that may have taken place as well.³ Some non-radiographic considerations exist, including the analysis of morphology, while others evaluate different aspects of third molars with respect to eruption and mineralization.^{4,5}

Following a review of the literature on this subject, we should be able to determine if a comprehensive system exists and, if so, the efficacy of that system. The implications of this existence or non-existence have far-reaching implications in the potential for improvement of the delivery of forensic “service,” as forensics is a unique combination of law enforcement, health care, and the legal system, which locally, nationally, and internationally has the potential to improve the quality of life for mankind on a multitiered level when applied with academic vigor, logistical efficiency, and social compassion and ecumenicity in service of “we the people.”

Reference(s):

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Odontology, African American, Markers