A31   The Application of Non-Destructive Dental Age Estimation (DAE) Methods Using Root Translucency on Latin American Hispanics

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Learning Overview: After attending this presentation, attendees will recognize DAE methods based on root translucency are efficiently accurate age estimating methods in that they are non-destructive and require minimal training or equipment. Attendees will be aware of current events, such as the humanitarian crisis along the United States' southern border, and be inspired to use their anthropological skills to make an impact and change locally and globally.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by drawing attention to underutilized aging techniques that apply to a commonly used skeletal element: dentition. Additionally, this presentation will demonstrate the versatility and applicability of said methods to the underresearched Central American Hispanic population. The age data generated from this research for an unidentified migrant population will be available for future investigations.

A humanitarian crisis is occurring along the United States-Mexico border as the number of apprehended and deceased migrants increases. Rarely are any forms of identification found with the migrant remains. Operation Identification (OpID) is a humanitarian effort created to improve the identification and repatriation process of deceased migrants by means of forensic anthropological methods. Very few of these methods have been validated on a Central American Hispanic population.

The purpose of this presentation is to explore the application of four non-destructive DAE methods proposed by Bang and Ramm, Lamendin et al., González-Colmenares et al., and Ubelaker and Parra on a representative adult Central American Hispanic population to aid this effort.[1-4] Age was estimated for 40 OpID forensic cases and Mean Absolute Error (MAE) for each method was compared. The methods performed from most to least accurate as follows: Lamendin, González-Colmenares, Ubelaker and Parra, and Bang and Ramm.[1-4] The age cohort comparisons followed similar patterns to previously reported findings where accuracy increased with the older age groups. DAE methods were the least accurate when compared to macroscopic and histological age estimation methods. Lamendin's method produces the most accurate age-at-death estimates; therefore, it is a recommended method for OpID forensic cases. Individuals aged 40–49 years of age are represented among the OpID forensic cases, making said DAE methods applicable for these individuals. Although individuals younger than 40 years of age are often overestimated, this research demonstrates that the age range based on MAE included the known ages for all identified individuals (*n*=10). This suggests root translucency DAE methods are also applicable to the younger OpID cases.

In conclusion, the non-destructive DAE methods are informative when used to identify deceased individuals of Central American geographic origin.

Reference(s):
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Dental Age Estimation, Root Translucency, Hispanic