H45 Craniometric and Non-Metric Assessment of Skulls of Hispanic Descent

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The goal of this presentation is to provide attendees with some initial guidelines for determining the ancestry of skulls of Hispanic descent. After attending this presentation, attendees can also expect to gain a greater awareness of the difficulties associated with conducting ancestry assessments on skulls of this type.

This presentation will impact the forensic science community by demonstrating the need for and potential application of further research in ancestry assessment of individuals of Hispanic descent, encompassing individuals from a wide range of geographic and genetic backgrounds.

The common methods of estimating ancestry are through visual assessment and osteometric analysis. However, these methods become less accurate when dealing with individuals of Hispanic descent.[1] In the United States, the term 'Hispanic' is usually associated with Spanish-speaking people of North, Central, and South America who genetically are an admixture of European, African, and Native American ancestry.[2-6] The discrepancies between actual genetic background and perceived genetic background can make definitively assigning Hispanic origin to skeletal remains more difficult, as well as creating incongruities between the ancestry determined by a forensic anthropologist and the ancestry listed on official documents such as a missing person's report.

The goal of this project is to provide methodology for accurate and reliable determination of ancestry for skulls of Hispanic descent by identifying traits that are consistent and unique to skulls from this ancestral group. This study examines the metric and non-metric features seen in a sample of 40 Hispanic skulls from the William M. Bass Donated Skeletal Collection, located in the Forensic Anthropology Center in the Department of Anthropology at the University of Tennessee, Knoxville (UTK) and the Pima County Office of the Medical Examiner (PCOME) in Tucson, Arizona. Non-metric data were collected and scored numerically. Craniometric data were obtained and analyzed using FORDISC 3.0.[7] Following the FORDISC 3.0 analyzes, the ranges and averages for each measurement across the 40 skulls were compiled and compared to similar datasets of African, European, and Native American individuals.

The results of the study indicate some significant metric differences exist between Hispanic skulls and skulls of other populations. Out of 24 cranial measurements, fourteen were found to show significant differences between Hispanics and Europeans, ten were found to show significant differences between Hispanics and Africans, and four were found show significant differences between Hispanics and Native Americans. Only one measurement (Biauricular Breadth) was shown to significantly separate the Hispanic sample from all three of the other populations.

In addition, several combinations of non-metric traits were observed more often in the Hispanic skulls than in other ancestral groups. The most common traits observed were absent post-bregmatic depressions (observed in 88.9% of the sample), prominent anterior nasal spines (observed in 83.3% of the sample), closed but visible supranasal suture (observed in 72.2% of the sample) and intermediate nasal aperture widths (observed in 66.7% of the sample). Due to the diversity of individuals from Hispanic backgrounds, future research is needed to determine the applicability of these findings to all Hispanic groups. In addition, future studies should include a larger sample size of Hispanic individuals, encompassing individuals from multiple geographic locations and including both sexes.

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