### H88    Postcranial Sex Estimation of Individuals Considered Hispanic

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After attending this presentation, attendees will learn which elements of the postcranial skeleton and specific measurements are the most accurate in estimating the sex of individuals considered Hispanic in the United States.

This presentation will impact the forensic science community by discussing the rapidly growing Hispanic population within the United States and why it is important to provide population specific methods for sex estimation.

According to the U.S. Census Bureau in 2005, the Hispanic population in the United States represented the largest minority, totaling

42.7 million individuals. This number continues to grow every year. It is critically important that forensic anthropologists are able to identify deceased individuals considered Hispanic, although currently, the field of forensic anthropology lacks the data needed to effectively do so. Today, the majority of identification methods currently used in the United States by forensic anthropologists were developed using American Black and White individuals.

When unidentified skeletal remains are found, estimating sex is one of the primary aspects of the biological profile. To estimate sex, when bones of the pelvis are not present, the initial observations are typically aimed at the skull and the overall size of the skeleton. According to Spradley et al (2008), these observations cause Hispanic males to frequently be misclassified as female. Hispanic individuals have been described as smaller and more gracile than the groups to which they are compared, including American Whites, Blacks, and (sometimes) Native Americans (Spradley et al 2008).

To help the forensic anthropological community more accurately estimate the sex of individuals considered Hispanic, this study used Hispanic individuals from the Forensic Anthropology Data Bank. Only positively identified individuals or individuals with known sex and ancestry were used, which consisted of a sample of 17 females and 70 males. Further, only standard postcranial metrics were used in the analysis (Buikstra and Ubelaker 1994). First, a stepwise discriminant function was run in Statistical Analysis Software (SAS) 9.1.2 on each postcranial element to determine the best subset of variables for sex estimation, followed by a discriminant function analysis (DFA) on the stepwise selected variables. A comparison of the cross-validated classification rates, from the DFA, for each post-cranial element revealed that the radius and ulna are the best elements for sex estimation for individuals considered Hispanic. Cross-validated classification rates using the radius are 87.5% for females and 85.7% for males. Cross- validated classification rates using the ulna are 88.9% for females and 85.3% for males.

Sex estimation rates from the radius and ulna are higher than when using metric methods derived from American Black and White individuals (Spradley 2008). The results from this study are considered preliminary due to the fact that the individuals used in the present analysis are not all from known geographic origins and the small female sample size. However, the results highlight that individuals considered Hispanic exhibit sexual dimorphism differently than American Blacks and Whites and require different methods of sex estimation. Forensic anthropologists are impacted by the growing Hispanic population in the United States, and studies, such as this one, are important to the growing field of forensic anthropology, as well as the changing dynamics of the United States.

**Forensic Anthropology, Sex Estimation, Hispanics**