## H25 Sexual Dimorphism in Crania and Humerus of Central Indian Population

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After attending this presentation, attendees will understand new osteometric techniques devised for fragmentary bones for central Indian population for sexual dimorphism in crania and the humerus bone. Attendees will also gain knowledge regarding the parameters useful for sexual dimorphism in the fragmentary regions of crania and humeri.

This presentation will impact the forensic science community by devising measurements for fragmentary bones, which is the form bones generally arrive to forensic experts. India is a multi-ethnic country and area-specific equations should be applied. This is the first time that equations specific to the central Indian population are reported.

Each individual has a right to retain his or her identity, even after death. In cases of mass disaster or incidents of unnatural death where only skeletal remains of an individual are found, it is a tough task for the forensic anthropologist and the medicolegal personnel to complete identification. Therefore any data set or a statistical formula based on the particular population is vital to the investigator. One of the four main attributes of biological identity that a forensic anthropologist tries to establish is sex.

In India, skeletal remains are minimal, due to cultural practices related to disposal of dead bodies. The remains that require a medicolegal opinion are usually taken back either by relatives or by law enforcement personnel following the analysis. So the collections of known bones are very few. The remains used in this study are from the collection of the Department of Anatomy and Forensic Medicine of various medical colleges in central India. They belong to cases macerated in the medical college or cases whose identity has been established by experts. All the cases are from central India. The age and sex of skeletons are documented 173 (100 male and 73 female) crania and long bones included in the study were free of any orthopedic and pathological disorder.

All the measurements included in the study were taken following the methods prescribed by Martin and Saller (1957).[1] Few measurement are devised by the authors, keeping in mind the practical need where the forensic anthropologist is frequently confronted with fragmentary bones as compared to complete bones in criminal and disaster cases.

Sixteen cranial measurements and ten humeral measurements were taken. The data were subjected to discriminant function analysis with SPSS 16. The level of accuracy achieved for this population with a single variable ranged from 67.7% to 90.3% for the cranium and 77.5% to 98.4% for the humerus. The equations where applied on a test sample to check the efficacy of the parameters and gave nearly 90.0% and 95.0% sexing accuracy for the cranium and humerus, respectively.

The formulae generated from the present study can be used by the forensic anthropologist and the law enforcement agencies to diagnose sex of unknown bone of central Indian origin.

**Reference:**

[1.] Martin R, Saller K. Lehrbuch der anthropologie. Bd 1. Stuttgart: Fischer G Verlag, 1957.

**Forensic Anthropology, Osteometric Techniques, Mass Disaster**

 ** Presenting Author*