
Sexual Dimorphism Of Foot Index

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Abstract

We read with interest a recently published article by Agnihotri et al on sex determination from the foot measurements [1] and wish to congratulate the authors for their work on this important issue. However we have some reservations about the conclusions drawn and thus would like to seek few clarifications and contribute on this all important issue.

Identification of victims from dismembered human remains has always been a challenge for Forensic scientists. This problem is encountered in cases of mass disasters, explosion, and assault cases where body is dismembered to conceal the identity of the victim. Accurate sexing of human remains is a vital part of any medicolegal investigation. When an individual foot is recovered and brought for examination, somatometry of the foot, osteological and radiological examination can help in the determination of primary indicators of identification such as sex, age and stature.

Authors have derived foot index value of 37 as the deviation point for sex determination. Foot index values were however derived from mean foot dimensions for different age groups. We understand that calculating foot index from mean foot length and foot breadth values in different age groups does not show accurate results and hence it would have been more appropriate if mean foot index for each age group was analysed separately. Information on the number of subjects included in each age group can give a better understanding of the results. Besides, descriptive statistics for foot index

for whole sample was desired to find if statistically significant differences occur between sexes. Authors conclude that sex can be determined by foot index with fair accuracy. In the study however neither the statistical significance of foot index as a sex determinant nor percentage accuracy and distribution of foot index is shown. The authors have utilised the means of the foot dimensions and not the raw data. It remains unclear as to why authors classified the study group into different age groups of one year each from 18- 22 years while those above 22 years were not classified likewise. In addition information on the study population is desirable as the standards of morphological and morphometric sex differences in the skeleton may differ with the population sample involved especially with reference to dimensions and indices and thus cannot be applied universally [2].

We seek clarification on the statistical significance of foot index as a sex determinant between the males and the females in the study. It will be beneficial for future researches if authors can also elaborate on the percentage accuracy of foot index as a sex determinant and the population group studied.

References

1. Agnihotri AK, Shukla S, Purwar B. Determination of sex from foot measurements. The Internet J of Forensic Science. 2007; 2.
2. Krogman WM, Iscan MY. Determination of Sex and Parturition. In: The Human Skeleton in Forensic Medicine. Springfield: Charles C Thomas publishers, 1986; 208-259.

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