



Physical Anthropology Section – 2009

H17 Cephalic Index of Gurung Community of Nepal: An Anthropometric Study

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After attending this presentation, attendees will understand why the Gurung community of Nepal is classified as brachycephalic.

This presentation will impact the forensic community by introducing the first study on Cephalic Index of the Nepalese Gurung community.

Morphological differences between people can be recorded by measurements and based on these measurements different indices are calculated. Cephalic Index (CI) is one such index that can be used in differentiation of racial characteristics. Comparison of CI between parents, offspring, and their siblings can give a clue towards the genetic transmission of inherited characteristics. Cephalometry is also important in forensic science for facial reconstruction of disputed identity.

Nepal is a land-locked country with China and Tibet on its north and India on its south. The people of the Gurung community are the original inhabitants of the Himalayan Republic of Nepal and maintain tradition, customs, and social order of ancient Nepalese. This is the first cephalometric study of Gurung community of Nepal. A comparison of the CI of the Nepalese Gurung community with the studies done elsewhere is made. The present cross-sectional study was conducted in Gandhruk village of Western Development Region of Nepal which is predominantly inhabited by Gurung community. Individuals with any craniofacial abnormality were excluded from the study.

All the measurements were taken with the subjects sitting on a chair with their head in the anatomical position. The measurements were taken to the nearest mm using a spreading caliper. The anatomical landmarks considered for measurement of the head length and head breadth were glabella, inion, and euryon. The head length was measured from glabella to inion. The head breadth was measured as the maximum transverse diameter between the two euryons. Data thus obtained were computed and analyzed using SPSS (Statistical Package for Social Sciences) version 10. The CI was calculated using the formula: (head breadth/head length) x 100. The differences in means of head length, head breadth, and CI between male and female were tested for statistical significance by independent sample "t" test. A total of 267 adults comprising of 157 (58.8%) males and 110 (41.2%) females in the age range 25 to 45 years were studied. The mean head length of the whole sample was 17.7 cm (SD, 0.88). The mean head breadth of the sample was 14.9 cm (SD, 0.76). The mean CI of the sample was 83.7 (SD, 5.69). For males, the mean head length was 18 cm (SD, 0.85) and the mean breadth was 14.9 cm (SD, 0.83). For females, the mean length and mean breadth were 17.4 cm (SD, 0.78) and 14.7 cm (SD, 0.6), respectively. The mean CI for males and females was 83.1 (SD, 6.08) and 84.6 (SD, 5.14) respectively.

Attendees will learn from the results that the Nepalese Gurung community can be classified as brachycephalic. In tropical zones the head form is longer (dolichocephalic), but in temperate zones the head form is round (mesocephalic or brachycephalic). Since Nepal is in the temperate zone, the present classification of the Nepalese Gurung community as brachycephalic is in accordance with the geographical variations of CI.

Cephalic Index, Gurung Community, Brachycephalic