

Predicting the anthropometric properties of cranial structures using big data

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Abstract

The objective of this study was to generate predictive statistical models of the anthropometric dimensions of craniofacial structures, from medical images obtained by Computed Tomography (CT). The study consisted of two-dimensional measurement of the distances between the anthropometric points Glabella, Vertex, Eurion, Nasion and Opisthocranium to achieve the dimensions: skull length (G-Op), head width (Eu-Eu) and head height (V-N). The iQ-VIEW/ iQ-Lite software was used for measurement. A total of 30 adult skulls between the ages of 50 and 70 were measured, all inhabitants of the city of Medellin, Colombia. The mean and standard deviation values were calculated. A predictive model was developed using multiple linear regression, which predicts the distance corresponding to head height (V-N) relative to G-Op and Eu-Eu regressors, obtaining a square R value of 0.375. Positive correlations were observed between the three craniofacial dimensions.

Palabras clave

ANOVA, Anthropometry, Medical Imaging, Computed Tomography.