THE ANALYSIS OF METHODS OF GENDER DIMORPHISM ASSESSMENT BY EXAMPLE OF ADULT BELARUSSIAN POPULATION

Zimina Sofya, Goncharova Natalia

Department of Anthropology, Biological Faculty, Lomonosov Moscow State University, Moscow, Russia

According to the hypothesis widely spread in the scientific literature, the male sex is more sensitive to unfavorable influences of exogenous and endogenous factors. For confirmation of this hypothesis, a lot of works is devoted to the analysis of the degree of gender dimorphism. Parameters used for the assessment of the degree of gender dimorphism are often interchangeable and demonstrate certain limitations in practice. Thus, it is important to compare different methods of assessment in order to reveal the most convenient/informative parameters. We chose four different indices from the most frequently used ones in the studies aimed at the investigation of gender dimorphism. Namely: coefficient of gender dimorphism (GDC), t-criterion, D-index and Kolmogorov-Smirnov criterion (K-S). A sample from a native Belorussian population described in the 1970's served as a study material. The data were accumulated in accordance with the complex anthropometric program. We distributed all examined subjects in three age groups. All four indices were calculated for separated parameters in each age-specific category. All assessment methods have demonstrated age-dependent increase of the degree of gender dimorphism in case of circumferential parameters. The most prominent differences in the degree of gender dimorphism between age-specific cohorts have been revealed for signs connected with fat development. The degree of gender dimorphism on these parameters increases significantly in the senior age group. Based on the results of the our study, the following conclusions can be made: 1. The t-criterion is different from the GDC criterion by the multiplication factor connected with the sample size, and it is not suitable for comparison of groups differing in the number of subjects; 2. In case the curve of theoretical distribution is incorrect, a calculated value of D-criterion does not correspond to empirical data. 3. Among all the studied methods, the most universal parameters of gender dimorphism are the GDC and K-S.

Key words: *anthropometry, gender dimorphism, coefficient of gender dimorphism, D-index*

Contact information: Zimina Sofya, e-mail: sonishat@yandex.ru,
Goncharova Natalia, e-mail: 1455008@gmail.com.