A STUDY OF POPULATION AND GENDER DIFFERENCES IN BODY SIZE, BODY SHAPE, BODY PHYSIQUE AND PHYSIOLOGICAL MEASUREMENTS IN MALAYALI AND MALAKKURAVAN TRIBES OF TAMIL NADU

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A Study of Population and Gender differences in Body Size, Body Shape, Body Physique and Physiological Measurements in Malayali and Malakkuravan Tribes of Tamil Nadu

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Abstract

The present study focuses on population and gender differences in Body Size, Body Shape, Body Physique and Physiological Measurements of two endogamous tribal groups of Tamil Nadu, namely, Malayali and Malakkuravan. In the present study an attempt has been made to delineate biological variability by means of noninvasive scientific techniques of anthropometric, skinfolds and physiological measurements in Malayali and Malakkuravan tribes of Tamil Nadu. A cross-sectional sample of 327 adult individual members with 204 adult Malayali comprising of 111 adult Malayali males and 93 adult Malayali females and 123 Malakkuravan consists of 65 adult Malakkuravan males and 68 adult Malakkuravan females were collected from the Eastern Ghats of Tamil Nadu. Mean, standard error and coefficient of variation were calculated for 24 body size variables, seven body segment and body proportion variables, one body shape ratio variable, four somatotype and four physiological variables using descriptive statistics in computerized statistical analysis software (SPSS 10.0 and MS Excel). Further population and gender differences in Malayali and Malakkuravan tribes were assessed by analysis of variance (ANOVA). Whereas, ten body shape categories were examined by chi - square test of goodness of fit.

The result depicted that barring Malayali males, all Malayali and Malakkuravan have short statures. Malayali males have medium stature and tall. In general Malayali and Malakkuravan have lighter body weight, but Malakkuravan females have slightly fattier body. Malayali and Malakkuravan males have broader shoulder, narrow pelvic region. Malakkuravan females have narrow to medium pelvic region and wider hip. In Malayali
males, barring narrow pelvic category, all the body shape ratios are significantly different from the Malayali females. It purports that sexual dimorphism is more evident in Malayali than Malakkuravan. A general body physique of Malayali and Malakkuravan tribes reveals that both Malayali males and females are Ecto-Mesomorph (2.3 – 5.0 – 3.6 and 2.3 – 3.4 – 2.7), which means they have predominantly linear physique and muscular. Malakkuravan males are Ecto-Mesomorph (2.7 – 4.2 – 3.0), whereas females are Endo-Mesomorph (3.7 – 4.3 – 1.5). Generally, Malayali and Malakkuravan males have higher systolic blood pressure than their females. Malayali females have higher pulse rate, while Malakkuravan females have higher breath holding time than their males. Comparatively Malakkuravan tribes have higher diastolic blood pressure and pulse rate than Malayali. The present study concludes that longer appendages of Malayali and Malakkuravan tribes have well adapted to the dry sub-humid climate of Tamil Nadu.