STUDY OF DIGIT RATIO AS A POINTER TO HEALTH AMONG ADULT FEMALE

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Abstract

Purpose of the present study was to study the relationship of digit ratio (2D:4D) with health variable-BMI and PBF among young adult female. A total of 50 female college students having the age of 21 to 30 years were selected randomly as subjects for the present study. Height and Weight, Length of index finger (2D) and ring finger (4D), Body Mass Index (BMI) and Body fat percentage (PBF) were the criterion in this study. Standard tools and test were used for the measurement. Mean and standard deviation (SD) have been considered for descriptive statistics and correlation coefficient (r) was calculated by Person Product Moment method. Only 0.05 levels has considered for the present study. All statistical calculations have been done by using standard statistical software. Results reported that mean value of 2D:4Dfor adult female was 0.99. Result also revealed that coefficient of correlation between 2D:4D with BMI (r=0.104) and PBF (r=0.052) were not significant statistically (p<0.05). From findings it was concluded that the 2D:4D was not sufficient to be used as a good pointer of health status in adult female.

Key words: Digit Ratio 2D:4D, Pointer, Health, Adult female.

Introduction

The digit ratio is the ratio of the lengths of different digits or fingers typically measured from the midpoint of bottom crease where the finger joins the hand to the tip of the finger.The 2D:4D ratio is calculated by dividing the length of the index finger of the right hand by the length of the ring finger of the right hand. A longer index finger will result in a ratio higher than 1, while a longer ring finger will result in a ratio of less than 1. Study reported that for males, the index finger is generally about 96 percent of the length of the ring finger, which gives an average digit ratio for males of 0.96. Males generally have a digit ratio below 1.00 and they have what is termed a "low digit ratio." Women generally have a digit ratio of about 1.00 (the index and ring fingers are of about equal length) which is termed a "high digit ratio." It was noted in the scientific literature several times through the late 1800s that the men have lower digit ratio (shorter index fingers than ring fingers) than do women. In 1930 it was proved with the statistically significant sex difference in a sample of 201 men and 109 women. In 1983 Wilson conducted a study to examine the correlation between assertiveness in women and their digit ratio and that was the first study which conducted to reveal the correlation between digit ratio and a psychological trait within members of the same sex. Some authors suggest that digit ratio correlates with health, behavior, and even sexuality in later life. Males with high digit ratio have higher risk of early heart disease, Increased risk for depression, schizophrenia Anxiety and reduced performance in sports. Female with high digit

ratio have higher lifetime reproductive success and higher risk of breast cancer and female with low digit ratio are more aggressive and assertive in nature. Several study reported that Personality traits are correlated with digit ratio, higher being more feminized. Purpose of the present study was to study the relationship of digit ratio (2D:4D) with health among young adult female.

Materials and Methods
Subjects
A total of 50 female college students having the age of 21 to 30 years and atleast graduates in educational qualification were selected randomly as subjects for the present study. All of them were engaged in physical activities regularly.

Criterion Measure
Criterion measures in this study were as follows:
   Height and Weight
   Length of index finger (2D) and ring finger (4D)
   Body Mass Index (BMI)
   Body fat percentage (PBF)

Instruments and Tools Used
Following Instruments and tools will be used to collect data in this study:
Stadiometer, Weight machine, Small sliding breadth caliper, Skin fold caliper

Design of the study and statistical procedure
Anthropometric data have been collected directly by measuring the subjects. Mean and standard deviation (SD) have been considered for descriptive statistics and correlation coefficient was calculated by Person Product Moment method. Only 0.05 levels has considered for the present study. All statistical calculations have been done by using standard statistical software.

Results and Findings
The mean values and SD of 2D:4D, BMI and PBF the subject have presented in Table-1 and the coefficient of correlation between digit ratio with BMI and PBF were calculated by Pearson Product-Moment method and the results have presented in Table-2.

TABLE-1
DESCRIPTIVE STATISTICS OF 2D:4D, BMI
AND PBF OF THE SUBJECTS

Statistical parameters	2D:4D	BMI (Kg/m²)	PBF (%)
Maximum	1.25	28.57	31.39
Minimum	0.91	15.82	11.96
Mean	0.99	20.97	19.52
SD	0.06	2.77	4.69
N	50	50	50

TABLE-2
COEFFICIENT OF CORRELATION (R-VALUE) BETWEEN
INDEPENDENT AND DEPENDENT VARIABLES

Variables	BMI	PBF
2D:4D	r= 0.151	r = 0.166

*Significant at 0.05 levels of significance.

Table-2 indicated that coefficient of correlation between 2D:4D with BMI (r=0.151) and PBF (r=0.166) were not significant statistically (p<0.05).

Discussion on Results
Present study has found positive correlation between 2D:4D with health status – BMI and PBF. But this correlation was not significant statistically. Therefore the results were not sufficient to be used as a good indicator of health status in young adult female. Some studies reported about significant correlation between digit ratio and health status and

sports performance. Few studies also reported no significant correlation between health status like BMI, WHR, PBF and selected motor abilities like flexibility, muscular strength and muscular endurance. Researchers opined that this might be due to the fewer number of samples taken for consideration in this present study. Further study is needed for taking concrete inference about its use as predictor of health status in young adult female. Within the limitations of the present investigations following conclusions were dawn on the basis of the obtained results. Digit ratio has a positive and low correlation with BMI in adult female which was statistically not significant.

Digit ratio has a positive but low correlation with PBF which was statistically not significant among adult female.

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