

Study on physique and extraversion dimension of personality among tribal girls players

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ABSTRACT

Present study has been aimed to see the effect of physique of tribal girls players on extraversion. 150 tribal girls (Av. age 15.34) were selected from "Krida Parisar" (Sports Hostel) of Chhattisgarh State India for the study. Physique of tribal sportsperson was assessed using Heath-Carter (1967) method and Hindi version of Eysenck's J.E.P.I. Inventory prepared by Helode (1985) was used to assess extraversion dimension of personality. After calculating endomorph, mesomorph, ectomorph the morphological structure was divided into 13 categories using Carter Method (1980). Mesomorph ectomorph (M=14.50) was found extroverted than the balance ectomorph, mesomorphic ectomorph, ectomorphic endomorph, balance endomorph, mesomorphic endomorph, endomorph ectomorph and central. Results indicated that mesomorph endomorph showed significant difference on extraversion dimension of personality than the endomorphic ectomorph, balance ectomorph, ectomorphic endomorph, balance endomorph and endomorph ectomorph. Endomorphic ectomorph, balance ectomorph, balance endomorph, endomorph ectomorph were found significantly introvert than the mesomorphic endomorph. Balance ectomorph was found introvert than the ectomorphic endomorph.

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Physique is the basis of human existence; it is the plinth of personality. A good personality must have a good physique, good appearance, good-bearing, good health, etc. A healthy body is a blessing while a weak one a curse. The layman's assessment of personality veers round the body structure, the physical appearance or have an individual looks like from outside. Erroneous though it might be, an individual with good musculature has an edge over others at least in body beauty. A sound mind exists only in sound body.

Sheldon (1942) specifies that all individuals can be classified into Mesomorph's, Endomorph's and Ectomorph's. Each of these three categories have their respective traits associated with corresponding temperamental tendencies which in the long run, determine one's behaviour - the mainstay of personality in action. Mesomorphy is related to Somatonia *i.e.* assertiveness, love for physical adventure, vigorous energeticness, need for exercise, love of dominance, love for taking risk and chance, directness of manner, courage, general noisiness, need for action when in trouble; etc. Endomorphy is related to Vesceortonia *i.e.* love of comfort, slow action, relaxation, love of eating, sociability, complacency, affectionateness, etc. Ectomorphy is related

to Cerebrotonia *i.e.* restraint in posture and movement, rapid reaction, over tension, anxiety, secretiveness, inhibition of action, introvertedness in thought, need for loneliness, etc. Sheldon's theoretical views have catalyzed many anthropometrists like Carter, Heath, etc. to prefer the body-classification technique, but the attempts of psychologists to verify the relationship between physique and temperament are half way.

Studies have convincingly shown that there seems to be a special body constitution which is a pre-requisite for each sport. Also, there is substantial evidence that physique and success in sports and physical performance are positively related. An aspiring athlete needs to have a physique that is characteristics of those who have succeeded in their sports of choice.

Sports scientists attempted to measure physique and its relation with the various aspects such as physical performance, motor fitness, strength, flexibility and injury. Some of them attempted to know sports performance with the physique, they are : Siddhu *et al.* (1975), Sharma and Shukla (1981), Sodhi and Siddhu (1984), Sillas, (1953), Sodhi (1987), Sharma *et al.* (1990), Mathew and Mathew (1991), Franseen (1996), Karp (2000), Stewart (2000), Egan and Stelmack (2003), Sherri *et al.* (2003).

Going through the literature of earlier studies, it was found that much more work has been done on the personality aspects and physique separately, but no study has been found regarding relationship between personality (behaviour) and physique of tribal sports persons.

In the present study, it was hypothesized that physique of the tribal girls players will influence extraversion dimension of personality.

METHODOLOGY

Following methodological steps have been taken to verify the hypothesis established by the investigators.

Samples:

150 tribal girls players (Av. age 15.34) belonging to different tribes from the Chhattisgarh State in India were selected for the study. All the tribal samples were trainees of "Krida Parisar" (sports hostel) run by Tribal Welfare Department of India. All samples achieved performance at the National level in different sports events.

Tools:

To assess physique, Heath and Carter method (1967) was adopted. The following anthropometric measurements were taken to obtain the physique; height, weight, tricep skinfold, subscapular skinfold, suprascapular skinfold, calf skinfold, humerus diameter, femur diameter, bicep girth, calf girth. (Carter, 1980; Heath and Carter, 1967).

To measure extraversion dimension of personality, J.E.P.I. inventory developed by B.J. Eysenck has been preferred. The Hindi version (Local language) of Eysenck's J.E.P.I. inventory prepared by Helode (1985) was used to assess extraversion dimension of personality.

Procedure:

To assess physique, ten anthropometric measurements have been taken from samples. After collecting 10 measurements, calculation was done according to prescribed equation given by Heath and Carter (1967) and endomorph, mesomorph and ectomorph, these three body types have been calculated.

The formula for calculating endomorph, mesomorph and ectomorph is -

$$\text{Endomorphy} = -0.7182 + 0.1451(X) - 0.00068(X)^2 + 0.0000014(X)^3$$

(where, X is the sum of triceps, subscapular and suprascapular skinfolds)

Table 1: Distribution of body type (n=150)

Body type categories	Tribal girls
1. Balance ectomorph	8
2. Mesomorph ectomorph	2
3. Mesomorphic ectomorph	4
4. Endomorphic ectomorph	29
5. Ectomorphic mesomorph	-
6. Balance mesomorph	1
7. Endomorphic mesomorph	2
8. Ectomorphic endomorph	22
9. Balance endomorph	19
10. Mesomorphic endomorph	19
11. Endomorph ectomorph	26
12. Mesomorph endomorph	12
13. Central	6
Total	150

$$\text{Mesomorphy} = 0.858 \times \text{HB} + .601 \times \text{FB} + .188 \times \text{CAC} + 0.161 \times \text{CCC} - (\text{Height} \times 0.131) + 4.50$$

where, HB denotes humerus bicepicondylar diameter;

FB denotes femur bicepicondylar diameter

CAC denotes corrected arm circumference;

CCC denotes corrected calf circumference

$$\text{Ectomorph} = \text{HWR} \times 0.732 - 28.58$$

where, HWR denotes height weight ratio

After dividing all the sample into the these three categories, after that three categories divided into the thirteen categories according to the actual boundaries decided by Carter (1980).

After interval of 30 minutes, the J.E.P.I. inventory was administered to each subject in a group of 10 to 15 subjects in the classroom of Krida Parisar (Sports Hostel). The responses given on the J.E.P.I. inventory was scored with the help of three scoring key prescribed by the authors. Investigator got results on three personality dimension *i.e.* extraversion, neuroticism and lie score. But only the extroversion personality dimension's results were utilized for the present study.

Statistical analysis:

Descriptive statistics were computed for the extraversion personality dimension according to individual body types (all thirteen categories).

To find out the significant difference on extraversion dimension of personality among tribal girls players according to their physique, the analysis of variance (ANOVA) statistical treatment was given.

OBSERVATIONS AND DISCUSSION

The findings of the study have been presented in the following sub heads :

The descriptive statistics of extraversion personality dimension on the basis of physique of tribal girls players are shown in Table 2.

Table 2: Descriptive statistics of extraversion personality dimension on the basis of physique of tribal girls players (n=150)

Body type categories	Mean \pm SD
Balance ectomorph	8.75 \pm 2.49
Mesomorph ectomorph	14.50 \pm 0.70
Mesomorphic ectomorph	10.50 \pm 1.73
Endomorphic ectomorph	10.20 \pm 2.63
Balance mesomorph	9.00 \pm 00
Endomorphic mesomorph	10.00 \pm 5.65
Ectomorphic endomorph	10.90 \pm 2.13
Balance endomorph	10.68 \pm 2.35
Mesomorphic endomorph	12.10 \pm 1.94
Endomorph ectomorph	10.23 \pm 2.19
Mesomorph endomorph	12.41 \pm 1.78
Central	11.00 \pm 2.82

After dividing all the samples into 12 categories (Table 2), it was noticed that no case has been found in ectomorphic mesomorph category. Therefore, no comparison can be made with this category but in other categories of tribal girls players comparison has been made with their extraversion personality dimensions. For the purpose of comparison among physique (13 body types) on extraversion personality dimension, an analysis of variance (ANOVA) was applied. The data pertaining to this are presented in Table 3.

Table 3: An analysis of variance of extraversion personality dimension of tribal girls players on physique

	Sum of squares	d.f.	Mean square	F
Between groups	148.99	11	13.54	
Within groups	739.00	138	5.35	2.52
Total	888.00	149		

$F_{.05}(11, 149) = 1.85$

As can be seen from Table 3, the tribal girls players with different physique were shown significantly difference on extraversion personality dimension. ANOVA revealed that the tribal girls players with different physique shown significant difference on extraversion personality dimension at .01 level. Thus, the hypothesis that physique of the tribal girls players will influence extraversion dimension of personality was accepted.

Above mention result indicated that there is relationship between physique and temperament. The most significant findings in Sheldon's (1942) study concerned the degree of association between the temperament variables and the physique variables as estimated by a correlation technique. The results are very clear that the correlation between the parallel physique and temperament dimensions is significant and surprisingly high, while the correlation between all other combinations of the physique and temperament variables is significantly negative. In regard to enhanced adult stature and believe that these early experiences shape behaviour, we would again expect to find an association between physical attributes and personality characteristics. This line of reasoning merely assumes that there are certain events that influence the development of both physical and personality characteristics and that, as a consequence, we observe significant association between these two domains. Osborne and DeGeorge (1959) found strong evidence for the important role of genetic variation as a determinant of behaviour, makes it altogether reasonable to expect that genes, either alone or in combination, will have multiple or pleiotropic effects that include both behavior and physique. Above mention results strongly support, the result found by the researchers.

Conclusion:

According to Table 3 mesomorph ectomorph (M=14.50) found extroverted than the balance ectomorph, mesomorphic ectomorph, ectomorphic endomorph, balance endomorph, mesomorphic endomorph, endomorph ectomorph and central.

Mesomorph endomorph (M=12.41) showed significant difference on extraversion dimension of personality than the endomorphic ectomorph, balance ectomorph, ectomorphic endomorph, balance endomorph and endomorph ectomorph.

Endomorphic ectomorph, balance ectomorph, balance endomorph, endomorph ectomorph found significantly introvert than the mesomorphic endomorph (M=12.10).

Balance ectomorph found introvert than the ectomorphic endomorph.

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