PROFILES OF ANTHROPOMETRIC FITNESS OF SECONDARY SCHOOL GOING GIRLS OF WEST BENGAL

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INTRODUCTION:

Innovation as well as talent search, especially in the sports world, has brought to light new dimensions and has dramatically increased in recent years. But in the sports performance of West Bengal School going girls in different spheres is poor due to certain lacuna in respect to identification of talent which is scientifically performed by other countries.

The athletic traits and characteristics of an individual mainly depends upon physical fitness having the components of muscular strength and endurance, cardio-respiratory endurance, flexibility, comprised of the four basic performance traits speed, power, agility and balance. Anthropometric can also contribute to selection procedures in different sports events. Besides success in track and field, discipline is based on the synthesis of anthropometric characteristics and motor abilities as well as optimal technique.

It has, therefore, been felt that the embryonic athletes if chosen at an early stage reach a high level of performance in the future. Talent identification also can be used as a counseling technique that helps to discover and explore areas of talent for particular athletes. In order to reach their goals, young children should be subject to a series of tests reflecting physical fitness which will indicate their present over all strengths and weaknesses. To identify such athletic potentiality, norms of these test items have an important bearing because they represent the achievement level of a particular group to which observed score can be compared. But there is a dearth of these standards for Indian (Bengalee) girls.

PURPOSE OF THE STUDY :

The purpose of the present study is to evaluate the anthropometric profile of West Bengal school going girls of 10-15 years for the assessment of sports potentiality.

MEHODOLOGY :

SUBJECT: A total of 4000 school girls from class VI-X were selected as subjects for present study. These subjects were selected from ten high school and ten madrasah of West Bengal.

Out of these 4000 subjects, 2000 were selected from high schools and the rest of 2000 were selected from madrasahs. So, from each school and madrasah, numbers of subjects selected were 200.These 200 subjects from each school were randomly selected from five classes from VI to X. All these subjects were day scholars. Among them the subjects of high schools were from families of moderate socio-economy status. The girls subjects from madrasah were from Muslim communities.

CRITERION MEASURE : In the present study the measuring criteria was anthropometric profiles of the subject.

Anthropometric profiles was assessed using skinfold measurement and using the appropriate regression equations.

PROCEDURE

i. Measurement of height: For measurement of height subjects were informed to remove their shoes, and hair ornaments and stand with her back to the height rule. The back of the head, back, buttocks, calves and heels touching the upright, feet together and look straight. The head piece of the stadiometer lowered so that the hair was pressed flat. Height is recorded to the resolution of the height rule (meter/half a centimeter).

ii. Measurement of weight: Weighing machine used for collect body weight of the subject. For the measurement of weight, the subject was informed to step up backwards onto the scale and stand still over the center of the scale with body weight evenly distributed between both feet with minimum clothing and bare footed. The subject arms were hanging freely by the sides of the body, with palms facing the thighs. The subjects hold her head up, and face forward.

iii. Measurement of skinfold: The skinfold measurement of triceps taken parallel to the long axis of the arm at the Triceps skinfold site. The subject was to assume a relaxed standing position. The right arm was relaxed with the shoulder join externally rotated to the mids-prone position and elbow extended by the side of the body.

The skinfold measurement of Biceps taken parallel to the long axis of the arm at the Biceps skinfold site. The subject was to assume a relaxed standing position. The right arm relaxed with the shoulder join externally rotated and the elbow extended by the side of the body.

The skinfold measurement of Sub scapular taken with the fold running obliquely downwards at the Sub scapular skinfold site. The subject was to assume a relaxed standing position with the arms hanging by the sides. The line of the skinfold was determined by the natural fold lines of the skin.

The skinfold measurement of Supra spinal taken with the fold running obliquely and medially downwards at the Supra spinal skinfold site. The subject was to assume a relaxed standing position with the arms hanging by the sides. The fold runs medially downwards and anteriorly at about a 45° angle as determined by the natural fold of the skin.

DATA ANALYSIS

The of data were analyzed using appropriate statistical procedure. Inter class variation was standardize by using ANOVA. The exact location of differences was identified by using Post hoc test. Differences between two means was tested for statistical significant by using t test.

PRESENTATION OF THE DATA

It is understood that properly planned and effectively implemented physical education programme influence the physique and fitness of participants. The anthropometric profile of the girls students of both categories were also analyzed in present investigation. A class wise analysis of these parameters was documented in the following section.

1. ANTHROPOMETRIC PROFILE, STUDENTS OF CLASS VI OF SCHOOL AND MADRASAHS

Table 1 shows the mean values with variability's of different selected physical anthropometric parameters for both groups of subjects of class VI.

Table 1
Mean and Sd of selected Physical and Anthropometric parameters

Physical and anthropometric parameter	Mean and Sd of high school girls	Mean and Sd of high madrasashs girls
Height (mt.)	1.43 ± 0.08	1.42 ± 0.08
Weight (k.g)	32.34 ± 9.98	31.49 ± 7.69
Triceps (mm)	7.06 ± 2.38	7.22 ± 3.68
Biceps (mm)	4.30 ± 1.75	4.36 ± 1.61
Sub scapular (mm)	8.15 ± 3.18	8.08 ± 3.01
Supra spinal(mm)	10.27 ± 3.68	10.38 ± 5.56

It is seen from the table that both group were almost similar in mean values of different selected physical and anthropometric parameters. However, the significance between mean values of both groups for different parameters was tested using t-test.

Table 2
‘ t ’ test for different Physical and Anthropometric parameters

Physical and anthropometric parameter	Mean values		Difference	t-value	Remarks
	School	Madrasah			Significant level
Height (mt)	1.43	1.42	0.01	0.67	0.50
Weight (k.g)	32.34	31.49	0.85	0.96	0.34
Triceps (mm)	7.06	7.22	-.16	-.52	0.60
Biceps (mm)	4.30	4.36	-.06	-.34	0.74
Sub scapular (mm)	8.15	8.08	.07	0.22	0.82
Supra spinal (mm)	10.27	10.38	-.12	-.25	0.80

It is seen from the table that all the t-values were lesser than required table value to be significant at 0.05 levels. It was understood that there was no statistically significant difference between the groups in any one from the selected physical and anthropometric parameters.

2.ANTHROPOMETRIC PROFILE, STUDENTS OF CLASS VII OF SCHOOL AND MADRASAHS

Table 3 shows the mean values with variability's of different selected physical anthropometric parameters for both groups of subjects of class VII.

Table 3
Mean and Sd of selected Physical and Anthropometric parameter

Physical and anthropometric parameter	Mean and Sd of high school girls	Mean and Sd of high madrasah girls
Height (mt.)	1.45 ± .17	1.45 ± .08
Weight (k.g)	32.98 ± 6.54	33.31 ± 6.45
Triceps (mm)	7.27 ± 2.39	7.64 ± 2.54
Biceps (mm)	4.57 ± 1.88	5.05 ± 1.90
Sub scapular (mm)	8.86 ± 3.37	9.23 ± 3.38
Supra spinal(mm)	10.26 ± 3.65	10.66 ± 3.43

According to the above table both groups were almost similar in mean values of different selected physical parameters. However, the significance between mean values of both the group on different parameter was tested using t-test

Table 4
' t ' values for different Physical and Anthropometric parameter

Physical parameter and anthropometric	Mean values		Difference	t-value	Remarks
	School	Madrasah			Significant level
Height (mt)	1.45	1.45	.00	.27	.79
Weight (k.g)	33.31	32.98	-.32	-.50	.62
Triceps (mm)	7.64	7.27	-.38	-1.53	.13
Biceps (mm)	5.05	4.57	-.48	-2.55	**.01**
Sub scapular (mm)	9.23	8.86	-.37	-1.09	.28
Supra spinal (mm)	10.66	10.26	-.40	-1.14	1.26

It is seen from the table that all the t-value was lesser than required table value to be significant at 0.05 levels except biceps. The difference in mean values was significant only for biceps at 0.01. It was understood that there was no statistically significant different between the groups in any one from the selected physical parameter except biceps.

3. ANTHROPOMETRIC PROFILE, STUDENTS OF CLASS VIII OF SCHOOL AND MADRASAHS

Table 5 shows the mean values with variabilities of different selected physical and anthropometric parameters for both groups of subjects of class VIII.

Table 5

Mean and Sd of selected Physical and anthropometric parameter

Physical and anthropometric parameter	Mean and Sd of high school girls	Mean and Sd of high madrasah girls
Height (mt.)	1.49 ± .06	1.53 ± .71
Weight (k.g)	38.58 ± 6.92	38.80 ± 7.01
Triceps (mm)	8.08 ± 2.74	8.13 ± 2.77
Biceps (mm)	5.07 ± 2.22	5.49 ± 2.12
Sub scapular (mm)	10.72 ± 3.81	10.50 ± 3.32
Supra spinal(mm)	11:30 ± 3.58	11:05 ± 3.16

On perusal of the above table, both groups were almost similar in mean values of different selected physical parameters. However, the significance between mean values of both the group on different parameters was tested using t-test.

Table 6

‘ t ’ values for different Physical and Anthropometric parameter

Physical and anthropometric parameter	Mean values		difference	t-value	Remarks
	School	Madrasah			Significant level
Height (mt)	1.49	1.53	.04	.78	.44
Weight (k.g)	38.58	38.80	.22	-.32	.75
Triceps (mm)	8.08	8.13	-.05	-.19	.85
Biceps (mm)	5.07	5.49	-.41	-1.89	.06
Sub scapular (mm)	10.72	10.50	.23	.63	.53
Supra spinal (mm)	11:30	11:05	.25	.75	.45

It is seen from the table that all the t-values were lesser than required table value to be significant at 0.05 levels. It was understood that there was no statistically significant difference between the groups in any one from the selected physical and anthropometric parameters.

4. ANTHROPOMETRIC PROFILE, STUDENTS OF CLASS IX OF SCHOOL AND MADRASAHS

Table 7 shows the mean values with their variabilities for different selected physical and anthropometric parameters of both groups of subjects of class IX.

Table 7
Mean and Sd of selected Physical and Anthropometric parameters

Physical and anthropometric parameter	Mean and Sd of high school girls	Mean and Sd of high madrasah girls
Height (mt.)	1.502 ± .059	1.503 ± .058
Weight (k.g)	39.497 ± 6.013	40.922 ± 6.546
Triceps (mm)	8.701 ± 2.826	9.029 ± 2.771
Biceps (mm)	5.443 ± 2.245	5.819 ± 1.947
Sub scapular (mm)	11.322 ± 3.073	11.215 ± 2.853
Supra spinal(mm)	11.94 ± 3.181	12.110 ± 2.852

On perusal of the above table that both groups were almost similar in mean values of different selected physical and anthropometric parameters. However, the significance between mean values of both the group for different parameter was tested using t-test.**Table 8**

‘ t ’ values for different Physical and Anthropometric parameter

Physical and anthropometric parameter	Mean values		difference	t-value	Remarks
	School	Madrasah			Significant level
Height (mt)	1.502	1.503	.00	-.21	.84
Weight (k.g)	39.497	40.922	-1.42	-2.27	.02
Triceps (mm)	8.701	9.029	-.33	-1.17	.24
Biceps (mm)	5.443	5.819	-.38	-1.79	.07
Sub scapular (mm)	11.322	11.215	.11	.36	.72
Supra spinal (mm)	11.941	12.110	-.17	-.56	.58

It is seen from the table that the t-value of weight was significant at 0.05 level of required table value. But it was understood that there were no statistically significant differences between the groups in any others from the selected physical and anthropometric parameters except weight. Differences between two groups were not statistically significant for all parameters.

5. ANTHROPOMETRIC PROFILE, STUDENTS OF CLASS X OF SCHOOL AND MADRASAHS

Table 9 shows the mean values with different selected physical and anthropometric parameter both group of class X

Table 9
Mean and Sd of selected Physical and Anthropometric parameter

Physical and anthropometric parameter	Mean and Sd of high school girls	Mean and Sd of high madrasah girls
Height (mt.)	1.49 ± .84	1.44 ± .09
Weight (k.g)	32.50 ± 7.20	33.21 ± 7.66
Triceps (mm)	6.70 ± 3.64	5.96 ± 1.21
Biceps (mm)	4.57 ± 2.13	4.31 ± 1.18
Sub scapular (mm)	8.27 ± 2.36	7.71 ± 1.53
Supra spinal(mm)	10:56 ± 2.87	9:34 ± 1.78

In pursuance of the above table, both groups were almost similar in mean values of different selected physical and anthropometric parameters. However, the significance between mean values of both the group for different parameters was tested using t-test.

Table 10

‘ t ’ values for testing significance in different Physical and anthropometric parameter

Physical and anthropometric parameter	Mean values		Difference	t-value	Remarks
	School	Madrasah			Significant level
Height (mt)	1.49	1.44	.06	.935	.35
Weight (k.g)	32.50	33.21	-.71	-.949	.34
Triceps (mm)	6.70	5.96	.73	2.706	**.01**
Biceps (mm)	4.57	4.31	.27	1.552	.12
Sub scapular (mm)	8.27	7.71	.57	2.852	**.00**
Supra spinal (mm)	10.56	9.34	1.22	5.131	**.00**

It is seen from the table that mean differences between two groups only three physical and anthropometric parameter i.e. triceps, Sub scapular and Supra spinal were statistically significant at 0.01 level. But as per table that there others physical and anthropometric parameter were not statistically significant.

RESULTS AND DISCUSSION

From an in depth analysis of the results obtained it is seen that both the girls students of schools as well as madrasahs are equal more or less in height and weight. There is no uniqueness in it because the rule of growth and development is equally applicable to both the categories of the students.

In case of anthropometric profile it is shown from the obtained results that the girls students of schools are higher than that of their madrasahs counterparts. In Indian subcontinent madrasah girls are discouraged to physical activities by the influence of social and religious culture; rather they are encouraged to engage in some household activities. But the scenario for the girls of schools is not the same; rather they are encouraged a little bit to participate in games and sports. So, the difference in the two cultures distinctly may influence the anthropometric index. In case of class X the profiles of school girls was statically reduced.

CONCLISION

On the basis of the analysis of the results obtained it is seen that both the girls students of schools as well as madrasahs are equal more or less in height and weight. On the other hand the anthropometric profile it is shown from the obtained results that the girls students of schools are higher than that of their madrasahs girls. The scenario for the girls madrasah are discouraged to physical activities by the influence of social and religious culture girls of schools are encouraged a little bit to participate in games and sports. So the difference in the two cultures distinctly may influence the anthropometric index.

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