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## ASSESSMENT AND CONSTRUCTION OF NORMS: SOUTH INDIAN ADOLESCENT SCHOOL BOYS

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**Abstract:** Endurance refers to the length of time that an individual can perform work of a given intensity. To achieve this purpose (N=9000) boys from various schools of Tamil Nadu, Kerala and Andhra Pradesh selected. Each state (n = 3000) samples of students from schools selected by stratified sampling method. In Tamil Nadu state (Vellore, Cuddalore, Erode, Dindigul and Virudhunagar districts and Kerala state (Kannur, Thrissur, Kottaiyam, and Tiruvananthapuram districts and Andhra Pradesh state (Chittor, Kurnool, Hyderabad, Adilabad, Vishagapatnam and Krishna districts selected. The students age range from 13 to 16 years (8th to 11th std respectively) cardio respiratory endurance was assessed with Tuttle pulse ratio test selected and tested as criterion variable. The collected data were statistically examined using ANOVA to find the significant difference if any. If the obtained 'F' ratio was significant, scheffe's post hoc test was used to know the paired mean difference. The level of confidence was fixed at 0.05. To construct the norms Hull scale was used. The result shows that Kerala state adolescent school boys are better in endurance compared with Tamil Nadu and Andhra Pradesh state. The Tamil Nadu adolescent school boys' better endurance compared with Andhra Pradesh state. Hence Andhra Pradesh state school boys are low cardio respiratory fitness.

**Keyword:** Cardio respiratory endurance, Tuttle pulse ratio test, ANOVA.

### INTRODUCTION:

Physical activity is essential for the development of wholesome personality of a child which would depend upon the opportunities provided for wholesome development of the mental, physical, social and spiritual aspects. Hence a well organized and properly administered physical education programme for school children is very essential. Fitness is an individual matter. It implies the ability of each person to live most effectively within its potentialities, (Hockey 1989). Fitness is the ability of an individual to lead a full and balanced life; includes physical, mental, emotional, social and spiritual factors and a capacity for their wholesome expression (Bucher A 1956). Cardio respiratory endurance is a direct marker of physiological status and recent data suggest that fitness is one of the strongest predictors of health outcomes (Myers et al., 2002). Highlight physical fitness as a key health marker in childhood and adolescence. Moderate and vigorous levels of physical activity stimulate functional adaptation of all tissues and organs in the body in the improve fitness thereby also making them less vulnerable to life style related degenerative and chronic diseases. Regular participation in moderate and vigorous levels of exercises physical fitness, which can lead to many health benefits (Ruiz et al., 2006). Norms are derived scores that are determined from raw score obtained by a specific test (Margaret, 1981). Another advantage is that the new performance standards need not be

developed every year. Moreover, since the same standards are used to evaluate different groups or classes of students, the grades will have a high degree of consistency. (Ted and Andrew, 1987). The system of physical education programme prevailed in schools are irrelevant to the need of the physical capacities of their students. After the advantage of the national education policy 1986, these defects of existing system could be removed after fixing the standard norms of physical fitness for the students. According to the national education policy norms of physical fitness may give common to all the students in India. The present study was compare and construct norms for the endurance of adolescent school boys of South India.

### METHODOLOGY

The purpose of the study was to compare and construct of norms for endurance among TN, KL and AP adolescent school boys of South India. To achieve this purpose (N=9000) boys from various schools of Tamil Nadu, Kerala and Andhra Pradesh each state (n = 3000) samples of students from schools selected by stratified sampling method. In Tamil Nadu state (Vellore, Cuddalore, Erode, Dindigul and Virudhunagar districts and Kerala state (Kannur, Thrissur, Kottaiyam, and Tiruvananthapuram districts and Andhra Pradesh state (Chittor, Kurnool, Hyderabad, Adilabad, Vishakhapatnam and Krishna districts selected. The students age range from 13 to 16 years (8th to

11th std respectively) cardio respiratory endurance was assessed with Tuttle pulse ratio test selected and tested as criterion variable. The collected data were statistically examined using ANOVA to find the significant difference if any. If the obtained 'F' ratio was significant, scheffe's post hoc test was used to know the paired mean difference. The level of confidence was fixed at 0.05. To construct the norms Hull scale was used.

**RESULTS**

**TABLE: 1 ANOVA FOR CARDIO RESPIRATORY ENDURANCE OF SOUTH INDIAN ADOLESCENT SCHOOL BOYS**

AGE		TN	KL	AP	SOV	SS	Df	MS	'F'
13	$\bar{X}$	59.20	65.97	55.02	B	62787.093	4	15696.77	597.67*
	$\sigma$	4.34	6.33	4.17	W	98356.80	3745	26.263	
14	$\bar{X}$	60.34	68.13	59.01	B	51213.227	4	12803.30	427.45*
	$\sigma$	4.52	7.43	4.38	W	112173.06	3745	29.953	
15	$\bar{X}$	61.26	70.0	60.02	B	57849.44	4	14462.36	429.93*
	$\sigma$	4.27	7.09	4.54	W	125977.6	3745	33.639	
16	$\bar{X}$	61.65	72.0	61.0	B	77095.093	4	19273.77	574.29*
	$\sigma$	5.56	7.74	4.21	W	125685.9	3745	33.561	

\* Significant at 0.05 level of confidence

Table value 2.79 for significance at 0.05 levels with df 4 and 3745

The table value shows the mean, standard deviation and 'F' value of cardio respiratory endurance for South Indian states (TN, KL, and AP) of 13 years, 14 years, 15 years and 16 years adolescent school boys. The 'F' value of cardio respiratory endurance for TN, KL, and AP, 13 years, 14 years, 15 years and 16 years adolescent school boys were 597.67, 427.45, 429.93 and 574.29 respectively. The obtained values are greater than table value 2.79 required for significant at 0.05 level with df 4 & 3745. The result of the study showed that there was a significant difference among TN, KL, and AP the 13 years, 14 years, 15 years and 16 years adolescent school boys on cardio respiratory endurance. To find out the mean difference the scheffe's test was applied and presented in table -2

**TABLE : 2 SCHEFFE'S TEST FOR MEAN DIFFERENCE OF SOUTH INDIAN DIFFERENT AGE GROUP OF ADOLESCENT SCHOOL BOYS ON CARDIO RESPIRATORY ENDURANCE**

Age	TN Vs KL	TN Vs AP	KL Vs AP	C.I
13	6.77*	4.18*	10.95*	0.86
14	7.79*	1.33*	9.12*	0.92
15	8.74*	1.24*	9.98*	0.97
16	10.35*	0.65	11.0*	0.97

Level of Significant fixed at 0.05

\* Significant

The table shows that mean difference between TN, KL and AP South Indian adolescent school boys of 13 years, 14 years, 15 years and 16 years on cardio respiratory endurance.

**TABLE: 3 NORMS ON ENDURANCE OF SOUTH INDIAN ADOLESCENT SCHOOL BOYS.**

Score	TN				KL				AP			
	13	14	15	16	13	14	15	16	13	14	15	16
100	74.71	76.16	76.20	81.11	88.12	94.13	94.81	99.09	69.61	74.34	75.91	75.73
90	71.67	73.00	73.22	77.22	83.69	88.93	89.85	93.67	66.70	71.27	72.73	72.79
80	68.63	69.83	70.23	73.33	79.26	83.73	84.89	88.25	63.78	68.21	69.55	69.84
70	65.60	66.67	67.24	69.43	74.83	78.53	79.93	82.84	60.86	65.14	66.38	66.89
60	62.56	63.50	64.25	65.54	70.40	73.33	74.96	77.42	57.94	62.08	63.20	63.95
50	59.52	60.34	61.26	61.65	65.97	68.13	70.00	72.00	55.02	59.01	60.02	61.00
40	56.48	57.18	58.27	57.76	61.54	62.93	65.04	66.58	52.10	55.94	56.84	58.05
30	53.44	54.01	55.28	53.87	57.11	57.73	60.07	61.16	49.18	52.88	53.66	55.11
20	50.41	50.85	52.29	49.97	52.68	52.53	55.11	55.75	46.26	49.81	50.49	52.16
10	47.37	47.68	49.30	46.08	48.25	47.33	50.15	50.33	43.34	46.75	47.31	49.21
0	44.33	44.52	46.31	42.19	43.81	42.12	45.18	44.91	40.42	43.68	44.13	46.26
Mean	59.52	60.34	61.26	61.65	65.97	68.13	70.00	72.00	55.02	59.01	60.02	61.00
S.D	4.34	4.52	4.27	5.56	6.33	7.43	7.09	7.74	4.17	4.38	4.54	4.21

The norms on endurance of different classes and different states of South India adolescent school boys were presented in table-3 and score was given from zero to hundred. The norms on endurance where vary from different classes different south states of India. The attained score on endurance can be used to identify the amount of cardio respiratory endurance and weakness of students. Those who score fifty percentiles below the criterion standards are identified and need to special attention with an individualized program.

**Figure: 1 MEANS SCORE ON CARDIO RESPIRATORY ENDURANCE ON SOUTH INDIAN ADOLESCENT SCHOOL BOYS**

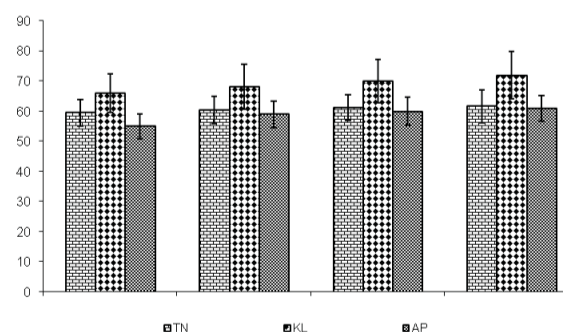


Figure:1 The bar diagram shows that cardio respiratory endurance of South Indian adolescent school boys. KL adolescent school boys all age group better endurance comparing than TN and AP states.

#### DISCUSSION ON FINDINGS

The results indicates that there was a significant difference on cardio respiratory endurance of TN, KL and AP adolescent school boys of different age groups. KL adolescent all groups better endurance comparing TN and AP state. TN adolescent school boys are better endurance age of 13, 14 and 15 yrs. TN and AP state age of 16 same endurance levels. High altitude training shows significant changes in cardio respiratory endurance (Buskrik 1967). Physical fitness test battery for boys and girls of primary grade children AAHPERD youth fitness test project represented the first attempt by the physical education profession to establish national norms (Callaway 1985). Urban school boys are better than the rural boys in shuttle run and 600 yard run/walk test where as in the case of pull ups, standing broad jump and 50 yard dash not shows any significant difference between urban and rural school boys. In general the physical fitness level of high school boys were not up to the mark. The higher age group students were comparatively better than the lower age group in all the six items of physical fitness variables (Sankar Reddy and Subramanian 2010). A study on a simple fitness test battery for elementary school children, 152 boys and 150 girls of Kendra Vidyalaya, Gwalior, studying from grade one to five, subjects selected at random. the test items were administered to the subjects on two days, administering three items each day. After a day's rest, the test items were administered again to the same students on fourth and fifth day for finding out the reliability, the value of 'r' obtained was 0.87, which shows that the subjects had received consistency of performance in the test items, the norms can be used for classifying the children into ability groups by assessing their physical fitness. Robson et al., (1978),

#### CONCLUSIONS

All ages of KL adolescent school boys are better cardio respiratory endurance comparing the TN and AP states. TN adolescent schools are better endurance comparing the AP state age of 13, 14 and 15 years. The age 16 both states TN and AP similar cardio respiratory endurance. All TN, KL and AP adolescent school boys who score below the 50 percentiles should special attention to with an individual program.

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