Assessment and Construction of Norms on Agility of Adolescent Boys of different Geographical Regions

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ABSTRACT

A basic responsibility of professional physical educators has been the evaluation of physical status of the students. Physical fitness is a positive and dynamic quality extending and continuum from birth to abundant life. The purpose of the study was to assess and construct the norms for agility among coastal, plain and hilly area adolescent boys of Tamilnadu. To achieve this purpose, 13,500 samples (students) from various schools of coastal area [n=4500 Cuddalore, Nagapatnam, Pudukottai, Villupuram, Chennai and Thottukudi districts), plain area (n=4500 Vellore, Villupuram, Salem, Tiruvannamalai and Kanchipuram districts), and hilly area (n=4500 Udhagamandalam (2623m), Dindukkal (2133m), Vellore (1410m), Pollachi (3914m) districts] of Tamilnadu, were selected as subjects, at random, and there age ranged from 11 to 13 years (Studying 6th to 8th standard, respectively). Agility (6x10m shuttle run) was selected as criterion variable and tested. The collected data were statistically examined by using ANOVA to find the significant difference if any. If the obtained 'F' ratio was found significant, scheffe's post hoc test was applied to know the paired mean difference. The level of confidence was fixed at .05. To construct the norms, Hull Scale was used. The result shows that coastal and plain adolescent boys were better in agility as compared to the hilly area boys. Further, the coastal adolescent boys have better agility than plain and hilly area boys. Hence, it was concluded that coastal and plain area adolescent boys were better in agility; and the researcher suggested to have special physical education programme for hilly area boys.

INTRODUCTION

Physically fit children generally have better memory, concentration, energy levels, and inclined to carry their healthy lifestyle in adulthood (childtrendsdatabank.org). Tamilnadu is the southernmost state in India, having different geographical regions such as coastal, plain and

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hills. In that different type of landscape, people survive and there lifestyle also changes according to their environment (tamilnaduonline.in.). Geography is the study of descriptors such as landscapes, mountains, climates, rivers, and people among others. The term altitude is commonly used to mean the height above sea level of a location, in geography (Air Force Manual). Tamilnadu has 15% of the total coastal length of India which is the country's third longest coastline (Ray & Ray, 2004). The human fitness may be influenced by birth; and it will change by their heredity, living environment, life style and so on. Hence, the fitness level of different geographical regions also changes. The people live in the hills may have difference in physical fitness, when compared to the people who live in coastal areas and plains (Zeigler & Earle, 1982). Studies of the physical and physiological variables of the school students of the hilly, plain and coastal areas are one of the new approaches to identify and improve the inherent physical fitness of an individual (Clarke & Clarke, 1987). Agility is the ability of the body, or parts of the body, to change direction rapidly and accurately (Jenson, 1972).

Norms are derived scores that are determined from the raw score obtained by a specific test (Busbrib, 1967). The system of physical education programme, prevailing in schools, are irrelevant to the need of the physical capacities of their students. After the advent of the National Education Policy (1986), these defects of existing system were removed, after fixing the standard norms for physical fitness for the students (Thomas, 1967). Norms have advantages over other standards. First they are unaffected by the performance of the group or the class being evaluated (Baumgartner & Jackron, 1987).

According to the National Education Policy, norms of physical fitness may be common to all the students in India. But, the students in the states having different geographical regions such as coastal, plain and hills, have different environment and the lifestyles. So, the present norms of national level will not be attained by the students in the different regions. Hence, there is a need to fix the norms regional-wise, that may able to find the capacity and give special attention to the students in the physical education programme. The present study was conducted to compare and construct norms for the agility of adolescent boys, of different geographical regions.

METHODOLOGY

The purpose of the study was to compare and construct of norms for the agility among adolescent boys coastal, plain and altitude areas of Tamilnadu. To achieve this purpose, (N= 13,500) boys from various schools of coastal area (n=4500 Cuddalore, Nagapatnam, Pudukottai, Villupuram, Chennai and Thoothukudi districts); plain area (n=4500 Vellore, Villupuram, Salem, Tiruvannamalai and Kangipuram districts); and altitude area [n=4500 Udhagamandalam(2623m), Dindukkal (2133m), Vellore (1410m) and Pollachi (3914m) districts of Tamilnadu, were selected as subjects at

random; and there age ranged from 11 to 13 years (6th to 8th standard, respectively). Agility (6x10m shuttle run) was selected as criterion variable and tested (1/10th second). The data were analyzed by using ANOVA, when the obtained 'F' ratio was significant, Scheffe's Post hoc Test was used to know the mean difference. The confidence level of significance was fixed at .05. To construct the norms, Hull Scale was used.

RESULT & DISCUSSION

Table-1 : Analysis of Variance on Agility for Coastal, Plain and hilly area Adolescent Boys.

Class		Costal	Plain	hills	SOV	SS	Df	MS	F
6th Std	Mean	17.31	18.92	19.96	B	5323.21	2	2661.61	4581.08*
	SD	0.54	0.79	0.91	W	2613.80	4497	0.581	
7th Std	Mean	16.77	18.23	18.99	B	3823.67	2	1911.83	2901.10*
	SD	0.66	0.90	0.85	W	2963.93	4497	0.659	
8th Std	Mean	16.53	17.62	18.74	B	3640.90	2	1820.45	2775.07*
	SD	0.64	0.88	0.88	W	2952.00	4497	0.656	

(The table value required for significance at 0.05 with df 2 and 4497 was 3.00)

*Significance at .05 level of confidence

The Table 1 shows that there was a significant difference among costal, plain and hilly area adolescent boys on agility, for 6th, 7th and 8th classes.

Table-2 : Scheffe's Post Hoc Test for The Difference Between The Group On Agility.

	Costal Vs Plain	Coastal Vs hilly	Plain Vs hilly	Confidence Interval
6th Std	1.61*	2.65*	1.04*	0.067
7th Std	1.46*	2.22*	0.76*	0.071
8th Std	1.09*	2.21*	1.12*	0.072

*Significance at .05 level of confidence

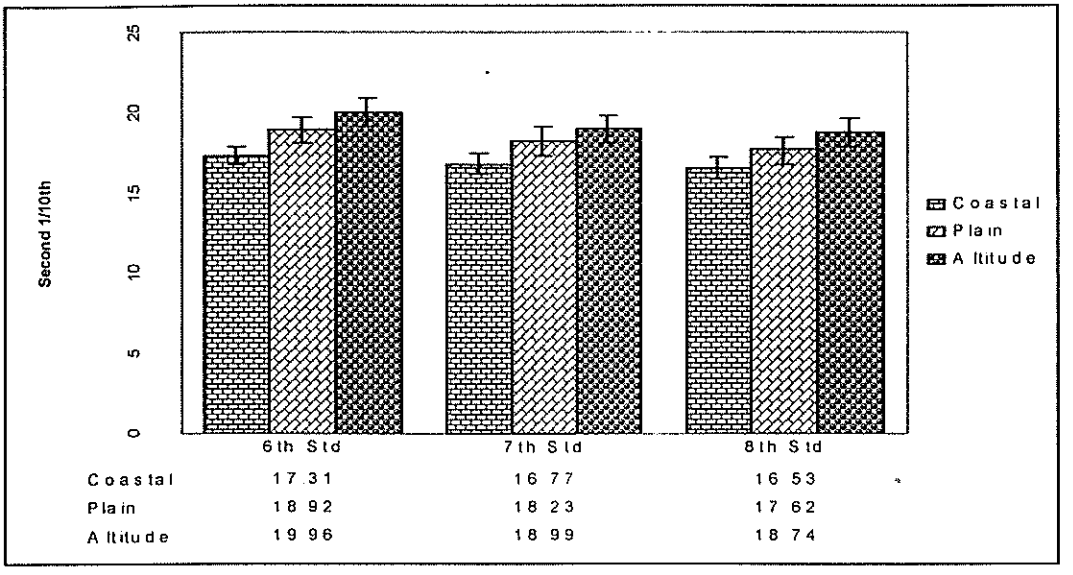
The result of Scheffe's Post hoc Test shows coastal boys have better agility than adolescent boys from plain and hilly areas. However, boys from plains were also better in agility than boys of the hilly area. Hence, it was found that irrespective of classes, coastal boys followed by plain boys were better in agility than the boys of the hilly areas.

The construction of norms on agility of adolescent boys of different geographical regions of Tamilnadu are presented in Table 3; and the score was given from zero to hundred. The norms on agility vary from different age group of different geographical regions of Tamilnadu. The attained score on the agility can be used to identify strength and weakness of students. Those who score below the criterion standards are identified and special attention, with an individualized programme, could be needed.

The result indicates that there was a significant difference on agility among coastal, plain and hill area adolescent boys. Callaway (1987) has constructed a percentile norm for Alabama students in trait 1-9, based on both AAHPER Youth Fitness Test. Norms were constructed for each item based on age and sex. The obtained mean performance, on each test items, were compared with national norms. Thomas further adds that Bombay Achievement Test prepared very progressive type of test. The performances were converted into points, by using a scoring table prescribed by him (Govt. of India Press, 1959). The All India Seminar on Physical Education Institutions recommended the Motor Ability Test for the National Plan to be conducted in schools, all over the country, to ascertain its validity and supply of proper norms for various age groups. The seminar also recommended to achieve norms for Kraus Weber Test and the Canadian Fitness Tests (Thomas,

Table-3 : Norms on Agility of Coastal, Plain and Altitude Boys for different Age Groups.

Score	Coastal			Plain			Hills		
	6th	7th	8th	6th	7th	8th	6th	7th	8th
0	19.21	19.07	18.78	21.67	21.38	20.67	23.16	21.99	21.79
10	18.83	18.61	18.33	21.12	20.75	20.06	22.52	21.39	21.18
20	18.45	18.15	17.88	20.57	20.12	19.45	21.88	20.79	20.57
30	18.07	17.69	17.43	20.02	19.49	18.84	21.24	20.19	19.96
40	17.69	17.23	16.98	19.47	18.86	18.23	20.60	19.59	19.35
50	17.31	16.77	16.53	18.92	18.23	17.62	19.96	18.99	18.74
60	16.93	16.31	16.08	18.37	17.60	17.01	19.32	18.39	18.13
70	16.55	15.85	15.63	17.82	16.97	16.40	18.68	17.79	17.52
80	16.17	15.39	15.18	17.27	16.34	15.79	18.04	17.19	16.91
90	15.79	14.93	14.73	16.72	15.71	15.18	17.40	16.59	16.30
100	15.41	14.47	14.28	16.17	15.08	14.57	16.76	15.99	15.69
Mean	**17.31**	**16.77**	**16.53**	**18.92**	**18.23**	**17.62**	**19.96**	**18.99**	**18.74**
SD	**0.54**	**0.66**	**0.64**	**0.79**	**0.90**	**0.88**	**0.91**	**0.85**	**0.88**



Bar Diagram shows the Mean Score on Agility of Costal, Plain and Altitude Adolescent Boys

1967). The present study is also in line with the above mentioned research work; in which, apart from age different geographical regions were taken for investigation.

The norms for motor fitness test batteries were constructed for both sexes, on senior and junior school level, in 1962. Each component was proposed by a state wide committee (Baher & Hopkins) which constructed percentile norms in Alabama students, in grade 1 to 9, based on AAHPER youth fitness test and AAHPER health fitness. The present investigation also made an attempt to find out and discriminate the agility of adolescent boys for different geographical regions (Callaway & Williams, 1985). The findings of the present study show that, coastal adolescent boys were significantly better in agility followed by boy of plain regions, when compared to the boys of the hilly areas. Hence, it was concluded that geographical regions may influence the fitness of the adolescent boys, in particular on agility.

CONCLUSION

It was concluded that the Tamilnadu coastal adolescent boys were better in agility, followed by boy of plains, when compared with boys of altitude areas. Hence, the study suggests that the coastal and plain area adolescent boys could achieve more in sports, and the altitude area boys have to improve their agility by adopting specified agility training programme.

IMPLICATIONS

The following suggestions were made to improve the agility among the adolescent boys :

1. The pupil who scores below the 50th deciles, on agility, in their respective age group, should be encouraged by the physical

education teachers to undergo special training on exercise to improve their agility.

2. The pupil who scores more than 50th deciles, on agility, in their respective age group, should be motivated to undergo special training to improve and maintain their fitness.
3. Coaches should give special attention to the pupils, who scored more than 90th deciles on agility, for competitive sports.

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