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Comparison and construction of norms for girls on speed: at different geographical region

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ABSTRACT

The purpose of the study was to compare the speed among coastal, plain and altitude area school girls of Tamilnadu. To achieve this purpose, 9000 girl students from various schools of coastal area (Cuddalore, Nagapatnam, Pudukottai, Villupuram, Chennai and Thottukudi districts). plain area (Vellore, Villupuram, Salem, Tiruvannamalai and Kangipuram districts) and altitude area (Udhagamandalam, Dindukkal, Vellore, Pollachi districts) of Tamilnadu, South India were selected as subjects at random. Their age ranged from 11 to 13 years(Studiying 6th to 8th standard). Speed (50 m run) were 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 apply to know the paired mean difference. The level of confidence was fixed at .05. To construct the norms of the Hull scale value of respected classes was continuously added to and subtracted from the respected means for determining the values from zero to hundred in the scale. The result showed that coastal area girls were better in speed performance compared to plain and altitude area girls.

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Key words : Speed, Geographical region, School girls

Fitness remains paramount to health and well-being. Now a day's people are aware of physical fitness and they know the importance of fitness. Physical fitness of an individual depends on body composition, age, sex, training, nutritional status and environmental factors (Anonymous, 1989 and Hasalkar *et al.*, 2005). 15 per cent of the total coastal length of India is the country's third longest coastline (Ray and Ray, 2004). Altitude is a distance measurement, usually in the vertical or "up" direction. For endurance athlets altitude training within their year-round training plan, believing that it will improve performance (Wilbert, 2004). Speed is the quickness of movement of a limb. It is an integral part of every sport and influenced by the athlete's mobility, special strength, strength endurance and technique (Cratty and Hution, 1969). Every person has a different level of physical fitness which may change with time, place of work, situation and there is also an interaction between the daily activities and the fitness of an individual, the point of where to put the level of optimum fitness.

Norms are derived scores that are determined from the raw score obtained by a specific test (Safrit, 1981). The system of physical education programme prevailed 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 could be removed after fixing the standard norms for physical fitness for the students. According to the national education policy norms of physical fitness, it may be common to all the students in India. But the students in the state on different geographical regions (coastal, plain and altitude) have different environment and the lifestyle. So that, the norms of national level have not been attained by the students in the different regions. Hence, there is a need to fix the norms for region wise that may be able to find the capacity and give special attention to the students in physical education programme. The present study has to compare and construct norms for the speed of adolescent girls at different geographical regions.

METHODOLOGY

The aim of the study was to compare the speed among coastal, plain and altitude areas of school girls of Tamilnadu. To achieve this purpose, (n= 9000) boy students from various schools of coastal area [n=3000 (6th 1000, 7th 1000 and 8th 1000) students] Cuddalore, Nagapattnam, Pudukottai, Villupuram, Chennai and Thoothukudi districts, plain area [n=3000 (6th 1000, 7th 1000 and 8th 1000) students] Vellore, Villupuram, Salem, Tiruvannamalai and Kanchipuram districts, and altitude

area [n=3000 (6th 1000, 7th 1000 and 8th 1000) students], Udhagamandalam, Dindukkal, Vellore and Polachi districts of Tamilnadu, South India were selected as subjects at random. And there age ranged from 11 to 13 years and studiying in 6th to 8th standard . Speed (50 m run) was selected as criterion variable and tested data were analysed 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 for significance was fixed at 0.05. To construct the norms, Hull scale was calculated for each class separately.

OBSERVATIONS AND DISCUSSION

Table 1 shows that, there was a significant difference among costal, plain and altitude areas of school girls on speed of all the classes.

The result of Scheffe's post hoc test (Table 2) indicates that coastal girls were better on speed than plain and altitude girls of different classes. However, plain girls were also better on speed than altitude girls of different classes. Hence, it was found that the speed will be better for coastal followed by plain and altitude girls respectively.

The norms on speed of different classes and geographical region of Tamilnadu school girls are presented in Table 3 and Fig. 1 and the score was given from zero to hundred. The norms on speed varied from different classes and different geographical regions of Tamilnadu. The attained score on speed can be used to identify strength and weakness of students. Those who scored below the criterion standards were identified and needed special attention with an individualized programme.

The result indicated that there was a significant difference on speed of coastal, plain and altitude area of girls of different classes and geographical regions (Fig. 2 to 4). The results of Mehtap and Nihal (2005) on physical fitness in rural children compared with urban children in Turkey found that children living in the urban areas were more inactive and obese than the rural children. Buskrik (1967) found after high altitude training, insignificant athletic performance. Students with rural background performed better in cardio-vascular fitness than that of their counterparts in urban areas (Uppal and Sareen, 2000).

Children AAHPERD youth fitness test project

Table 2: Scheffe's post Hoc test for the difference between the groups on speed

	Costal vs plain	Plain vs altitude	Altitude vs plain	Confidence interval
6th Std	0.98*	1.74*	0.76*	0.056
7th Std	0.49*	1.74*	1.25*	0.051
8th Std	0.96*	1.95*	0.99*	0.061

*indicates significance of value at P=0.05

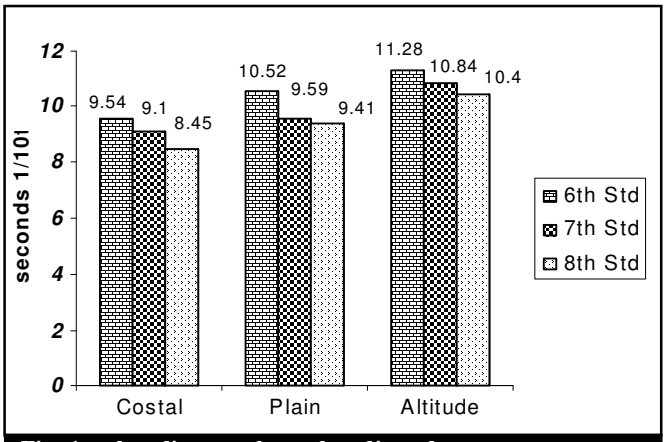

Fig. 1: bar diagram shows the adjusted post test mean score on speed of costal, plain and altitude school GIRLS of Tamil Nadu

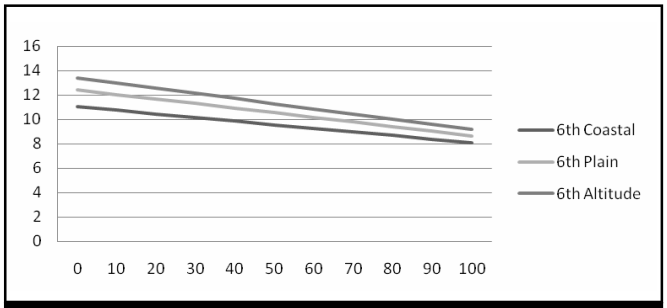

Fig. 2: Comparison of speed for 6th class of different geographical regions

Table 1: Analysis of variance on speed

Class	Test	Costal	Plain	Altitude	SOV	SS	Df	Ms	F
6th Std	Mean	9.54	10.52	11.28	B	1533.93	2	766.96	2689.16*
	SD	0.43	0.55	0.60	W	854.76	2997	0.28	
7th Std	Mean	9.10	9.59	10.84	B	1607.86	2	803.93	3488.30*
	SD	0.33	0.51	0.56	W	690.70	2997	0.23	
8th Std	Mean	8.45	9.41	10.40	B	1896.40	2	948.20	2874.01*
	SD	0.48	0.64	0.58	W	988.77	2997	0.33	

*Significance at .05 level of confidence, table value with df 2 and 2997 was 3.00

Table 3: The hull scale norms on speed of coastal, plain and altitude girls of different age groups

Score	Coastal			Plain			Altitude		
	6th (11years)	7th (12years)	8th (13years)	6th (11years)	7th (12years)	8th 13years)	6th (11years)	7th (12years)	8th (13years)
0	11.04	10.25	10.10	12.42	11.34	11.66	13.38	12.79	12.40
10	10.74	10.02	9.77	12.04	10.99	11.21	12.96	12.40	12.00
20	10.44	9.79	9.44	11.66	10.64	10.76	12.54	12.01	11.60
30	10.14	9.56	9.11	11.28	10.29	10.31	12.12	11.62	11.20
40	9.84	9.33	8.78	10.90	9.94	9.86	11.70	11.23	10.80
50	9.54	9.10	8.45	10.52	9.59	9.41	11.28	10.84	10.40
60	9.24	8.87	8.12	10.14	9.24	8.96	10.86	10.45	10.00
70	8.94	8.64	7.79	9.76	8.89	8.51	10.44	10.06	9.60
80	8.64	8.41	7.46	9.38	8.54	8.06	10.02	9.67	9.20
90	8.34	8.18	7.13	9.00	8.19	7.61	9.60	9.28	8.80
100	8.04	7.95	6.80	8.62	7.84	7.16	9.18	8.89	8.40
Mean	9.54	9.10	8.45	10.52	9.59	9.41	11.28	10.84	10.40
SD	0.43	0.33	0.48	0.55	0.51	0.64	0.60	0.56	0.58

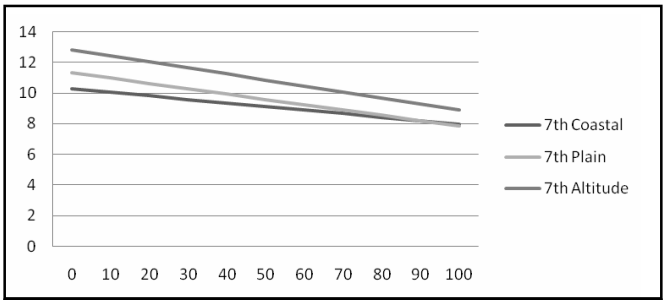

Fig. 3: Comparison of speed for 7th class of different geographical regions

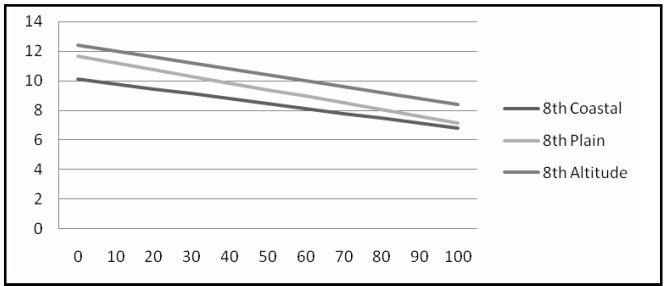

Fig. 4: Comparison of speed for 8th class of different geographical regions

represented the first attempt by the physical education profession to establish national norms (Callaway, 1985). Girls with ages between 13 and 18 years where not found significant differences in the flexibility among the gender in the test of sit down and reach (Araujo, 2002).

The research has provided information to the students, physical education teachers and coaches to understand the one of the fitness variable speed. It will encourage them to be involved in sports. The information can be applied as criteria in selecting or choosing athletes and it is also a source to assist sport scientists and coaches to be proactive and change their perspective in order to improve the athlete's performance. According to the results of this study, it is suggested that the speed is the most important component of fitness to perform various activities

Conclusion:

It was concluded that costal girls were better in speed then altitude and plain girls. Hence, from the study, it can be concluded that the coastal area girls have to choose speed related sports, and the altitude and plain area girls have to be given specified physical exercise and training programme to improve their speed quality.

8th girls showed better in speed performance irrespective of regions. There was a positive improvement in speed quality depending upon the growth of girls. Hence, the present norms were fixated for separately for coastal, plain and altitude girls so that this may be useful to the physical education teacher and coaches to select students and assessing one of the physical fitness components (speed) in the different geographical regions.

Implication:

The following suggestions were made to improve the speed quality of adolescent school girls. Who scored below the 50th deciles on speed in their respective age group should be encouraged to improve their speed. National level norms may be constructed for the coastal, plain and altitude areas and it may be used as a standardized

norms for normative studies. Norms may be constructed for other age groups. Ministry of Youth Affairs and State Education Department has to take some initiation to fix the norms for different regions in a state, SDAT, State Government, SAI and Human Resource Development should come forward to follow the norms as suggested for different classes and geographical regions.

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