

Gross Motor Skill Performance Among High School Girls

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Abstract

The purpose of the present study was to analyse the selected gross motor skill performances of tribal, non tribal and coastal area high school students in Kerala. To achieve the purpose of the study, a total of 750 students were selected from the government and aided schools in Kerala. The age of the subjects ranged from 14 to 15 years. The selected girls were divided in to three groups as per the tribal, non tribal and coastal area students. Each group consisted of 250 subjects.

The gross motor skill performances variables for the study were throw for distance and jump for distance. One-way analysis of variance (ANOVA) was used for each variable separately to find out the significant difference among tribal, non tribal and coastal area students. The level of significance was fixed at 0.01 level. Wherever F ratio was found to be significant, post-hoc comparison (Duncan's test) was used to find out which pair of the groups shown more significant difference.

Introduction

Large muscles of the body and their likelihood of evoking more physical activities comprise with the goal of the skill. Gross motor skills involve the large muscles of the body that enables such functions as walking, kicking, sitting upright, lifting and throwing a ball. Gross motor skills are important for major movement functions such as walking, maintaining balance, coordination, jumping, reaching and many others. Gross motor abilities share connections with other physical functions. A student's ability to maintain upper body support, for example, will affect his ability to write. Writing is a fine motor skill. What the students with poor gross motor development face in everyday life is the difficulty with activities such as writing, sitting up in an alert position, watching classroom activities, and writing on a

blackboard. For them, these activities can be physically draining.

Bindu (2013) conducted a study to find out the difference in various aspects of health-related physical fitness status of boys and girls of two different age groups in the hilly and coastal areas of Kerala state. For this study 3000 male and 3000 female school children from 12 to 14 years were selected and they were included in two age groups with below 13 years and below 14 years. The selected students were from government and aided schools in Kerala state. To identify the significant difference in mean among the children, t-ratio was done and level of significance was set at 0.05. Significant difference in health-related physical fitness were seen on levels of boys and girls of these two

areas. It is concluded that the boys and girls of hill area were shown much higher health related physical fitness.

Purpose of the study

The purpose of the study was to find out gross motor skill performances of tribal, non tribal and coastal area high school girls.

Hypothesis

There may be a significant difference among tribal non tribal and coastal area high school girls gross motor skill performance.

Methods

Selection of subjects

To achieve the purpose of the study, a total of 750 students were selected from the government and aided schools in Kerala.

Selection of variables and criterion measures

The following variables were selected for the purpose of the study

Gross motor skill performance

1. Throw for Distance : Cricket ball Throw (In Meters)
2. Jump for Distance : Standing Broad Jump (In Meters)

Criterion measures

The criterion measures for the selected variables used were;

1. Throw for distance was used to test the throwing ability and the score was recorded by using measuring tape in meters and centimeters.
2. Jump for distance was used to test the horizontal jumping ability and the score were recorded by using measuring tape in meters and centimeters.

Results

In the present study, One Way Analysis of Variance (ANOVA) was used to find out whether there is any significant difference among tribal non tribal and coastal area high school students gross motor skill performances. The 'F' ratio was used to find out whether there is any significant variation on throw for distance and jump for distance. The level of significance was fixed at 0.01 level. Wherever F ratio was found to be significant, post-hoc comparison (Duncan's test) was used to find out which pair of the groups shows more significant difference.

Throw for distance

Comparative scores of tribal, non tribal and coastal area high school girls in Kerala with respect to their agility are given in Table 1.

Table 1

Comparative level of tribal, non tribal and coastal area high school girls in relation to the variable: Throw for distance

Variable	Level	Coastal		Non-Tribal		Tribal	
		N	%	N	%	N	%
Throw for distance	Low	6	2.4	14	5.6	38	15.2
	Avg	206	82.4	202	80.8	172	68.8
	High	38	15.2	34	13.6	40	16

The Table 1 states that the high school girls of coastal area (82.4%), non tribal area (80.8%) and tribal area (68.8%) have average level of throw for distance. Whereas the high school girls of coastal area (2.4%), non tribal area (5.6%) and tribal area (15.2%) have low level in terms of throw for distance. The high school girls of coastal area (15.2%), non tribal area (13.6%) and tribal area (16%) have relatively higher level of throw for distance.

Mean scores of tribal, non tribal and coastal area high school girls in relation to the variable: Throw for distance.

In order to test whether there exist any significant difference in the tribal, non tribal and coastal area high school girls' gross motor skill performance variable: Throw for distance, the data obtained were analyzed and compared by using one-way ANOVA and the obtained 'F' ratio was tested for significance. The details of analysis are presented in Table 2.

Table 2

Analysis of variance for the comparison of throw for distance among tribal, non tribal and coastal area Girls

Variable	Source of variation	Sum of Squares	df	Mean Square	F
Throw	BG	4071.76	2	2035.88	93.83*
	WG	16208.28	747	21.69	
	Total	20280.05	749	2057.58	

*Significant at 0.01 level, Table value of F (2, 747) at 0.01 level = 4.63

As per the Table 2, the result obtained from ANOVA shows that there is significant

difference among the tribal, non tribal and coastal area high school girls on the variable: Throw for distance, the F- value is 93.83 which is greater than 4.63 at 0.01 level. To find out which pair of the groups have more significant difference between each other 'Post hoc comparisons (Duncan's Test) was used and the results are shown in Table 3.

Table 3

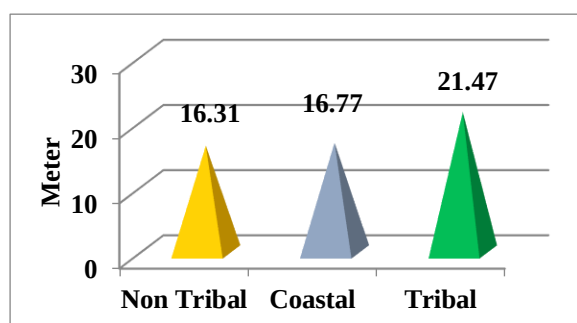
Mean scores of Duncan's Multiple Range test for tribal, non tribal and coastal area high school girls' Throw for distance

Variables	Number	Subset for Alpha = 0.05		
		1	2	3
Non Tribal	250	16.31	-	-
Coastal	250	-	16.77	-
Tribal	250	-	-	21.47

From the Table 3, it is clear that there is significant difference among tribal, non tribal and coastal area high school girls' gross motor skill performance. The Duncan's Test reveals that the tribal area high school girls (21.47) have higher mean score than the girls belong to coastal and non tribal areas. This is illustrated in Figure 1.

Figure 1

Mean scores of tribal, non tribal and coastal area high school girls' gross motor skill performance variable; Throw for distance (in meters)



Jump for Distance

Comparative scores of tribal, non tribal and coastal area high school girls in Kerala with respect to their jump for distance are given in Table 4.

Table 4

Comparative level of tribal, non tribal and coastal area high school girls in relation to the variable: Jump for distance

Variable	Level	Coastal		Non-Tribal		Tribal	
		N	%	N	%	N	%
Jump for Distance	Low	12	4.8	4	1.6	8	3.2
	Avg	168	67.2	186	74.4	182	72.8
	High	70	28	60	24	60	24

The Table 4 states that the high school girls of coastal area (67.2%), non tribal area (74.4%) and tribal area (72.8%) have average level of jump for distance. Whereas the high school girls of coastal area (4.8%), non tribal area (1.6%) and tribal area (3.2%) have low level in terms of jump for distance. The high school girls of coastal area (28%), non tribal area (24%) and tribal area (24%) have relatively higher level of jump for distance.

In order to test whether there exist any significant difference in the tribal, non tribal and coastal area high school girls' gross motor skill performance the data obtained were analyzed and compared by using one-way ANOVA and the obtained 'F' ratio was tested for significance. The details of analysis are presented in Table 5.

Table 5

Analysis of variance for the comparison of jump for distance among tribal, non tribal and coastal area Girls

Variable	Source of variation	Sum of Squares	df	Mean Square	F
Jump for distance	BG	2.03	2	1.01	30.24*
	WG	25.05	747	0.03	
	Total	27.08	749	1.05	

*Significant at 0.01 level. Table value of F (2, 747) at 0.01 level = 4.63

As per the Table 5 the result obtained from ANOVA shows that there is significant difference among the tribal, non tribal and coastal area high school girls on the variable: Jump for distance, the F- value is 30.24 which is greater than 4.63 at 0.01 level. To find out which pair of the groups shows more significant difference in Post hoc comparisons (Duncan's Test) was used and the results are shown in Table 6.

Table 6

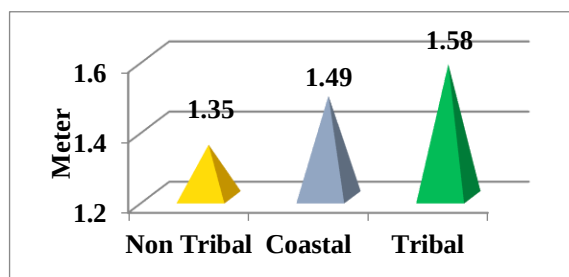
Mean scores of Duncan's Multiple Range test for tribal, non tribal and coastal area high school girls' Jump for distance

Variables	Number	Subset for Alpha = 0.05		
		1	2	3
Non Tribal	250	1.35	-	-
Coastal	250	-	1.49	-
Tribal	250	-	-	1.58

From the Table 6 it is clear that there is significant difference among tribal, non tribal and coastal area high school girls' gross motor skill performance variable: Jump for distance. The Duncan's Test reveals that the Tribal area high school girls (1.58) have higher mean scores than the girls belong to tribal and coastal areas. This is illustrated in Figure 2.

Figure 2

Mean scores of tribal, non tribal and coastal area high school girls' gross motor skill performance variable; Jump for distance (in meters)



Findings

1. It has been found that there is a significant difference in throw for distance of tribal, non tribal and coastal area high school girls in Kerala. Tribal area girls are reported to have higher mean throw for distance score than coastal and non tribal area. Non tribal area students are reported to have lower level of mean throw for distance score than coastal and non tribal area students.
2. It has been found that there is a significant difference in jump for distance of tribal, non tribal and coastal area high school girls in Kerala. Tribal area girls are reported to have higher jump for distance score than coastal and non tribal area. Non tribal area students are reported to have lower level of jump for distance score than coastal and non tribal area students.

Conclusion

The high school students belonging to the tribal area exhibited better gross motor skill performances such as throw for distance and jump for distance when compared with the students from non tribal and coastal area high school girls. Non tribal area students exhibited lesser performance in jump for distance and throw for distance.

Suggestions and Recommendations

The result of the present study can be used to find out the differences among the students of tribal, non tribal and coastal areas. Hence, it may be used to identify talents and bring out the potentials at their vital young age for the better performance and achievements in sports and games.

The new findings of the study may help coaches, physical education teachers and other sports administrators understand the relevance of each regional division and its environment conditions. Eventually they can find out a suitable test mechanism.

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