

ASSESSMENT OF PHYSICAL FITNESS STATUS OF RDT HOCKEY ACADEMY ADAPTED SCHOOLBOYS IN THE RAYALASEMA DISTRICT OF ANDHRA PRADESH

P. Johnson^{a,*} and P.S. Raja Marsion Babu^a

^aUniversity College of Physical Education & Sports Sciences, Acharya Nagarjuna
University, Guntur-522510, Andhra Pradesh, India.

*Corresponding Author Ph: 0863-22346114; Email: johnson_pala@yahoo.co.in

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Abstract: This investigation was purported to evaluate the Physical Fitness Status of Schoolboys adapted by RDT Hockey Academy in the Rayalasema District of Andhra Pradesh, India. For this reason, 916 schoolboys from thirty-two (32) schools in four (4) different districts adapted by RDT hockey academy in the Rayalasema District of Andhra Pradesh, India were considered as subjects. These subjects were in the age group of 11 to 16 years, and they were assessed for their physical fitness status. The fitness parameters were restrained to height, weight, speed, explosive power, flexibility, agility and cardiorespiratory endurance using standardized tests and procedures. The data collected were subjected to statistical analysis by means of One-way ANOVA, and Bonferroni corrections post hoc test. The confidence interval was fixed at $P < 0.05$ in all cases. The research findings ensure statistically considerable age difference on selected variables, and it implies that age differences influence almost all fitness parameters.

Key Words: Physical Fitness, schoolboys, ANOVA, HOCKEY

Introduction

In India, for centuries of years from Vedic age to till date, the gurukuls and schools have played a vital role in the provision of physical activity to children and youth. Now a day, physical education is a mandated part of the school curriculum that too particularly in the State of Andhra Pradesh, India, and it is obligatory to assess and report the level of school student's fitness. The educational aspects of physical education are to develop the knowledge, behavioral skills, and motor skills necessary to develop and maintain a physically active and healthy lifestyle. As such, the priority for physical education is seen as providing opportunities for students to engage in enjoyable physical activity, to become physically fit, and to learn generalizable motor and behavioral skills [1]. Yet, participation in physical education was reduced by substitutions of other activities for physical education and student exemptions.

Customarily, the role of schools in providing and promoting physical activity has been during the school day and on the school campus immediately after school hours. Although there have been exceptions, school-based programs usually have been sponsored by the schools themselves and supervised by school employees. However, enormous potential appears to exist for schools to expand their role in providing students with additional physical activity by building institutional relationships with community-based providers of physical activity. Such relationships could manifest in several ways. Schools can make their facilities available to community based organizations during after-school, weekend, and summer vacation. Also, schools can collaborate with community organizations in promoting physical activity programs to students and their parents. Because transportation can be a barrier to students' participation in after-school programs, schools can collaborate with community organizations, including transit authorities, to ensure that students have the opportunity to participate in programs beyond the school day.

Although school-community linked physical activity programs offer much promise, little research has addressed the efficacy of such initiatives for increasing physical activity in children and youth. The nurturing of young players was carried out by Rural Development Trust (RDT), an NGO based in Anantapur, Andhra Pradesh, India. RDT Hockey academy benefited many young players across Andhra Pradesh, by adapting the students of various schools. Thereby, an attempt was made to record and report the physical fitness status of schoolboys of different ages adapted by RDT hockey academy in the Rayalasema district of Andhra Pradesh.

Methods

Subjects and variables

In this study, nine hundred and sixteen (916) male school students, aged 11 to 16 years were selected as subjects, at random from the schools adapted by RDT hockey academy spread across the district of Rayalasema, Andhra Pradesh, India. The selected subjects were tested for their height, weight, speed, explosive power, flexibility, agility and cardiorespiratory endurance using standardized tests and procedures.

Statistical technique

The data collected were subjected to statistical analysis by means of One-way ANOVA, and Bonferroni corrections post hoc test. The confidence interval was fixed at $p < 0.05$ in all cases.

Results

The data on height, weight, speed, explosive power, flexibility, agility and cardiorespiratory endurance were analysed for statistical significant age difference using one-way ANOVA. Thereafter, post hoc tests were performed using Bonferroni corrections. All those results were tabulated in tables from 1 through 3.

Table – 1: Mean and Standard Deviations on Physical Fitness Components

Variables	Descriptive	Age Groups					
		11 yrs	12 yrs	13 yrs	14 yrs	15 yrs	16 yrs
	N	112	222	249	196	99	38
Height	Mean	137.34	142.38	147.54	150.82	155.35	161.66
	SD	7.05	7.94	9.11	9.32	8.96	7.19
Weight	Mean	27.74	31.03	34.22	37.21	41.19	46.11
	SD	4.98	6.27	7.31	7.00	7.90	7.25
Speed	Mean	5.78	5.75	5.54	5.41	5.51	5.45
	SD	.52	.57	.63	.64	.57	.52
Explosive Power	Mean	1.48	1.55	1.61	1.68	1.72	1.87
	SD	.16	.18	.21	.25	.23	.23
Flexibility	Mean	3.63	4.15	5.59	5.69	7.00	7.53
	SD	2.86	3.34	4.09	4.21	4.94	5.36
Agility	Mean	18.40	17.81	17.08	16.56	16.74	15.61
	SD	1.48	1.70	1.62	1.74	1.89	1.47
Cardio respiratory Endurance	Mean	3.79	3.67	3.51	3.48	3.44	3.51
	SD	.58	.55	.53	.68	.72	.67

The descriptive statistics depicted in Table 1 reveals that all the variables confined to this study improved with age of the schoolboys. However, the speed, agility and cardiorespiratory endurance of the schoolboys were slightly impinged at the age of 15 and 16 years, which might be the result of academic stress, lack of motivation, sports performance saturation, gain in body mass, so on and so forth that needs to be investigated further.

Table – 2: Analysis of Variance on Physical Fitness Components

Variables	SOV	Sum of Squares	df	Mean Square	F	Sig.
Height	B	33166.969	5	6633.394	90.449	.000
	W	66737.778	910	73.338		
Weight	B	18807.955	5	3761.591	80.890	.000
	W	42317.551	910	46.503		
Speed	B	18.145	5	3.629	10.275	.000
	W	321.401	910	.353		
Explosive Power	B	7.380	5	1.476	33.143	.000
	W	40.528	910	.045		
Flexibility	B	1127.764	5	225.553	14.216	.000
	W	14437.968	910	15.866		
Agility	B	446.681	5	89.336	31.856	.000
	W	2551.975	910	2.804		
Cardio respiratory Endurance	B	12.098	5	2.420	6.599	.000
	W	333.643	910	.367		

Table 2 shows that statistically significant difference exists between different ages on height, weight, speed, explosive power, flexibility, agility and cardiorespiratory endurance as the obtained $F(5, 910) = 90.449, 80.890, 10.275, 33.143, 14.216, 31.856$ and 6.599 respectively, ($p < 0.05$). Since, six different age categories were considered in this study, the statistical analysis was further continued to post hoc test using Bonferroni corrections to find out the paired mean differences, and it was given Table 3.

Table – 3: Post Hoc Tests on Physical Fitness Components

Age in Years		Height	Weight	Speed	Explosive Power	Flexibility	Agility	Cardio Respiratory Endurance
I	J							
11	12	5.039*	3.286*	0.027	0.068	0.515	0.584*	0.113
	13	10.199*	6.476*	0.237*	0.125*	1.952*	1.319*	0.281*
	14	13.477*	9.473*	0.370*	0.199*	2.055*	1.843*	0.308*
	15	18.014*	13.451*	0.269*	0.238*	3.366*	1.657*	0.344*
	16	24.319*	18.364*	0.326	0.388*	3.892*	2.789*	0.281
12	13	5.160*	3.190*	0.210*	0.057	1.438*	0.735*	0.168*
	14	8.438*	6.187*	0.343*	0.132*	1.540*	1.259*	0.196*
	15	12.975*	10.165*	0.242*	0.170*	2.851*	1.074*	0.232*
	16	19.280*	15.078*	0.299	0.321*	3.378*	2.206*	0.169
13	14	3.278*	2.997*	0.133	0.075*	0.102	0.524*	0.028
	15	7.815*	6.975*	0.031	0.113*	1.414*	0.338	0.064
	16	14.120*	11.888*	0.089	0.264*	1.940	1.470*	0.001
14	15	4.537*	3.978*	0.101	0.038	1.311	0.186	0.036
	16	10.842*	8.891*	0.044	0.189*	1.838	0.947*	0.027
15	16	6.304*	4.913*	0.058	0.151*	0.526	1.132*	0.063

From Table 3, it is understood that almost each of the paired mean differences on height, weight and agility varied between ages. It is also found that the adjacent age categories didn't vary considerably between them with regard to speed, explosive power, flexibility and cardiorespiratory endurance, while the speed, flexibility and cardiorespiratory endurance of the boys aged 14 to 16 years were not good enough as it is supposed to be.

Discussion

Partaking in games and sports has long been assumed to provide health benefits to young players. In spite of certain reservations about this conjecture, the studies of some [2-4] have shown that health benefits accrue to young people who participate in sports. The results of the present study exhibit a mixed trend influence of sports participation.

Conclusion

The findings of this study reveal that most of the boys adapted by RDT hockey academy are getting taller and heavier with age, which ensures that the growth and development process were not hindered by means of systematic training program adopted in the academy. But, the result of this study necessitates rigorous training regimen for improving the physical fitness status of boys with regard to their age, as most of the fitness parameters level were not evidently varied among age categories of schoolboys adapted by the hockey academy.

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