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Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.isrj.net

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HEALTH RELATED PHYSICAL FITNESS AMONG ADOLESCENCE SCHOOL BOYS OF PUDUCHERRY

M. Ramajayam And V. Gopinath
Ph.D Research Scholar
Professor
Department of Physical Education and Sports Sciences Annamalai University, Annamalai Nagar, Chidambaram

Abstract: Socio economic transformation over the previous decade may have created a less active life style and a decline in fitness among world wise children and adolescents. The aim of this study was to analysis the health related physical fitness among adolescents school boys of Puducherry. The sampling procedure used in this study large distribution of random population. To achieve this purpose the health related physical fitness of different age group 13, 14, 15 and 16 yrs school going boys of Puducherry in a total (N=3000),various districts (Puducherry, Karikkal, Mahe, Yanam age group (n-750) subjects were selected by convenience sampling method. At the school level health related physical fitness is one of the major problems among the pupil. The selected criterion variables are Muscular Strength (push ups), Muscular Endurance (sit-ups), Cardio Respiratory Endurance (Tuttle Pulse Ratio test), Percent Body Fat (skin fold technique) and Flexibility (sit and reach test),are measurable components of health related physical fitness. The data were analyzed by One Way Analysis of Variance (ANOVA), to find out whether there was any significant difference on health related physical fitness among the different age groups. The level of significance was fixed at 0.05, if they obtained 'F' ratio is significant, scheffe's post hoc test was applied to find out the means difference. The result clearly indicates that a significant difference lies among the four age group of school boys on all health related physical fitness variables. Health related physical fitness variables muscular strength, muscular endurance, cardio respiratory endurance and flexibility are significantly increasing they age advances performance also increased. Rest of percent body fat fluctuations, 14 yrs and 15 yrs decreased. 16 yrs schools boys increasing the fat due to less physical activities and concentrate the studies.

Keywords: Health Related Physical Fitness, Muscular Strength, Muscular Endurance, Cardio-Respiratory Endurance, Percent Body Fat and Flexibility, ANOVA, Scheffe's Test.

INTRODUCTION

Health as currently understood is a complex and holistic construct that is highly influenced by the actions or omissions of the individual. It is a more dynamic and responsible concept of health, in which our life style plays a large role in its maintenance and preservation. In fact, the concept of life style is intimately related to health and is also a subjective term made up of different dimensions influenced by our habits and customs(1). Currently there is much evidence that the regular practice of moderate physical and sports activities is one of the life style habits that has the most direct impact on the improvement and maintenance of our health (2). Mechanization and automation, swift communication and transport, computer usage and television viewing have reduced the need for vigorous occupations and discouraged involvement in leisure time recreational activity (3). Regular participation in moderate and vigorous levels of exercise increases physical fitness, which can lead to many health benefits (4). High cardio respiratory fitness during childhood and adolescence has been associated with a healthier cardio vascular profile during these years (5). The practice of regular physical exercise of light or moderate intensity causes a series of adaptations known as physical fitness which produce benefits of individual health (6).

Health-related physical fitness includes the characteristics of functional capacity and is affected by the physical activity level and other lifestyle factors. Maintaining an appropriate level of health-related physical fitness allows a person to meet emergencies, reduce the risk of disease and injury, work efficiently, participate and enjoy physical activity (sports, recreation, leisure) and look one's physical best. A high health-related physical fitness level focuses on optimum health and prevents the onset of disease and problems associated with inactivity at all ages (7). Health related physical fitness is by an ability to perform daily activities with vigor and is related to a low risk of chronic disease. Health related physical fitness consists of those components of physical fitness that have a relationship with good health. The components are commonly defined as body composition, cardio vascular fitness, musculo skeletal fitness (muscular strength, muscular endurance and flexibility). The primary purpose was to analysis the health related physical fitness among adolescents school boys of Puducherry.

METHODOLOGY

Sampling technique: The sampling procedures should base upon large distribution of random population. Selection of

subjects: The study was designed to compare among the health related physical fitness test of different age group school boys students of Puducherry. The total number of schools where classes of 8th ,9th ,10th and 11th Standards are available in selected following districts are (Puducherry, Karaikkal, Mahe and Yanam) total(N=3000) and each age group were (n-750) school boys selected by convenience sampling method. Selection of variables and test items: Muscular Strength (push ups), Muscular Endurance (sit-ups), Cardio Respiratory Endurance (Tuttle Pulse Ratio test(8)), Percent Body Fat (skin fold technique selected sites are Pectrolis Major, Rectus Abdominus and Quatriceps Femoris) and Flexibility(sit and reach test),are measurable components of health related physical fitness. Statistical Technique: The data were analyzed by One Way Analysis of Variance (ANOVA), to find out whether there was any significant difference on health related physical fitness among the different age groups. The level of significance was fixed at 0.05, if they obtained 'F' ratio is significant, scheffe's post hoc test was applied to find out the means difference.

RESULTS

Table-1
ANOVA FOR HEALTH RELATED PHYSICAL FITNESS VARIABLES OF AMONG THE AGE GROUPS OF ADOLESCENT SCHOOL BOYS OF PUDUCHERRY

Variables	Groups	Sum of Squares	Df	Mean Square	' F '
Muscular Strength	Between	2327.867	3	775.956	84.865*
	Within	27393.60	2996	9.143	
Muscular Endurance	Between	4467.729	3	1489.243	55.195*
	Within	80835.895	2996	26.981	
Cardio Respiratory Endurance	Between	3690.692	3	1230.231	48.036*
	Within	76729.10	2996	25.611	
Percent Body Fat	Between	217.642	3	72.547	136.035*
	Within	1597.760	2996	0.533	
Flexibility	Between	5899.067	3	1966.356	170.538*
	Within	34544.80	2996	11.530	

*Significant Table Value 2.60 with df 3 and 2996

Table – 1 shows the health related physical fitness variables among the age groups of adolescent boys of Puducherry. From the table it was clear the obtained 'F'-values are greater than table value (2.60) required for significant at 0.05 level with df 3 and 2996. The results of the study indicates that among the age groups significant difference were found on health related physical fitness variables for 13 yrs, 14 yrs, 15 yrs and 16 yrs adolescent school boys. Hence, to find out the paired mean difference scheffe's post hoc test was applied and the results were presented in table - II

Table-II
SCHEFFE'S POST HOC TEST FOR HEALTH RELATED PHYSICAL FITNESS VARIABLES OF ADOLESCENT SCHOOL BOYS OF PUDUCHERRY.

Variables	13 Vs 14	13 Vs 15	13 Vs 16	14 Vs 15	14 Vs 16	15 Vs 16	C.I
Muscular Strength	1.07	1.78	2.34	0.77	1.33	0.56	0.53
Muscular Endurance	1.17	2.52	3.16	1.35	1.99	0.64*	0.92
Cardio Respiratory Endurance	0.67*	1.76	2.93	1.07	2.26	1.19	0.89
Percent Body Fat	0.28	0.74	0.46	0.46	0.18	0.28	0.13
Flexibility	0.90	2.90	3.41	2.00	2.51	0.51*	0.59

* No Significant

Tables-2 shows that the results of paired mean difference of Puducherry adolescent school boys on Health Related Physical Fitness Variables.

Muscular Strength indicates all the paired means are significant difference at 0.05 level of confidence on muscular strength. From the results it was clear that muscular strength was better for 16 yrs boys followed by 15 yrs, 14 yrs and 13 yrs boys respectively.

Muscular Endurance indicates the paired means are significant difference at 0.05 level of confidence on muscular endurance 13 yrs Vs 14yrs, 13 yrs Vs 15 yrs,13 yrs Vs 16 yrs, 14 Vs 15 yrs 14 yrs Vs 16 yrs significant difference and 15 Vs 16 yrs insignificant difference between paired mean difference. From the results it was clear that muscular endurance was better for 16 yrs boys followed by 15 yrs, 14 yrs and 13 yrs boys respectively.

Cardio Respiratory Endurance indicates the paired means are significant difference at 0.05 level of confidence on Cardio respiratory endurance 13 yrs Vs 15 yrs,13 yrs Vs 16 yrs , 14 Vs 15 yrs, 14 yrs Vs 16 yrs and 15 Vs 16 yrs significant difference. 13 Vs 14 yrs insignificant difference between paired mean difference. From the results it was clear that cardio respiratory endurance was better for 16 yrs boys followed by 15 yrs, 14 yrs and 13 yrs boys respectively.

Percent Body Fat indicates all the paired means are significant difference at 0.05 level of confidence on percent body fat. From the results it was clear that Percent body fat was better for 13 yrs boys followed by 14 yrs, 16 yrs and 15 yrs boys respectively.

Flexibility indicates all the paired means are significant difference at 0.05 level of confidence on flexibility. Except 15 yrs Vs 16 yrs boys insignificant difference between paired mean difference. From the results it was clear that flexibility was better for 16 yrs boys followed by 15 yrs, 14 yrs and 13 yrs boys respectively.

Hence from the results concluded of health related physical fitness variables when age advances fitness of adolescent boys progressively increase.

Figure- 1
BAR DIAGRAM SHOWING MEAN VALUES OF HEALTH RELATED PHYSICAL FITNESS OF ADOLESCENT SCHOOL BOYS OF TAMIL NADU

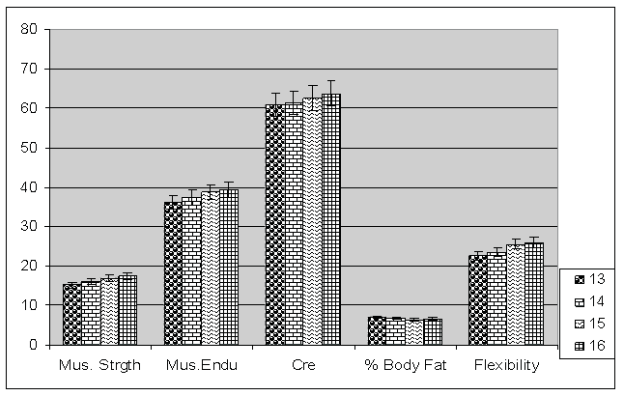

Figure-1 shows that health related physical fitness variables age increasing the individual's performance also increased.

DISCUSSION ON FINDINGS

Sex and age were stronger predictors of health – related quality of life than nutritional status or physical fitness related variables (9). Interventions to promote health related physical fitness should not only consider gender and age of school children, but also selected socio- demographic and behavioral factors, especially socio-economic class and leisure activities (10). The static strength of rural children's was significantly higher than the urban school children. But there is no significant difference of speed, explosive strength, flexibility and cardiovascular endurance components between urban and rural primary school children (11). The data show that great part of the studied youngsters demonstrate physical fitness components that could compromise a better health status, indicating the urgent need of implementing intervention programs addressed to the improvement of the practice of physical exercise in the school population (12). Health related physical fitness variables all are increasing the depends on age increases. The results agreement with other studies also. Rural boys have better physical performance (13). The study of health related physical fitness of the Tshannda rural school children in grades 1 to 7, they assessed musculo skeletal fitness results showed boys generally performed higher than the girls (14). Research conducted for European adolescents tests of health related physical fitness for both sexes. The results shows that all variables increased except flexibility shows significant remaining also no differences of both sexes (15).

CONCLUSIONS

Health related physical fitness variable muscular strength, muscular endurance, cardio respiratory endurance and flexibility are significantly increasing progressively they age advances adolescents of school boys.

IMPLICATIONS

Inactivity and sedentary lifestyles are prevalent throughout the global population. Less than 60% of individuals globally achieve the minimum recommendation of 30 minutes a day of moderate – intensity physical activity. Therefore it seems important to encourage youth to participate in physical activity. This scenario warns us of the necessity to implement physical exercise programmes in schools sport services to facilitate the regular practice of physical and sport activities and thereby increase healthy physical fitness levels of among students. The instruments and protocols used in this work can be used to achieve that awareness should take government levels.

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