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Relationship Between Developmental Age and Motor Fitness Component on Different Age Groups of Panjab Boys

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Abstract

Physical fitness is generally achieved through correct nutrition, exercise, and enough rest. In previous years, fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient.

Brukner and Khan (2001), power is the equivalent of explosive strength. Young and Bilby (1993) have used the term "speed-strength" synonymous with power. Paavolaienen et al (1999) have suggested that muscle power is the ability of neuromuscular system to produce power during maximal exercise when glycolytic and oxidative energy production is high and muscle contractility may be limited.

Sample of Study

Purposive sampling technique was employed to collect data from the boys 12 to 18 years of different schools of Punjab.

Tools

American Alliances of Health, Physical Education, Recreation and Dance (AAHPERD) (1980) health related physical fitness tests were used to measure health related physical fitness.

Statistical Analysis

'T' ratio was used to find out significance difference between the different age group of school boys of Punjab.

Keywords: Motor Fitness, Purposive Sampling, Leg Strength.

Introduction

Physical fitness comprises two related concepts: general fitness (a state of health and well-being), and specific fitness (a task-oriented definition based on the ability to perform specific aspects of sports or occupations). Physical fitness is generally achieved through correct nutrition, exercise, and enough rest. In previous years, fitness was commonly defined as the capacity to carry out the day's activities without undue fatigue. However, as automation increased leisure time, changes in lifestyles following the industrial revolution rendered this definition insufficient. In current contexts, physical fitness is considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypokinetic diseases, and to meet emergency situations. Hypokinetic diseases are conditions that occur from a sedentary lifestyle. Examples could include obesity and complications arising from sedentary behaviour. Hypokinetic conditions could include: Cardiovascular disease, some forms of cancer, Back problems, Obesity, Type 2 diabetes and mental health.

Motor fitness is a term that describes an athlete's ability to perform effectively during sports or other physical activity. An athlete's motor fitness is a combination of five different components, each of which is essential for high levels of performance. Improving motor fitness involves a training regimen in all five. Power is the most important factor in assessing a person's capacity for performance in sport. Power and physical performance have been closely related and investigated by various investigators using different protocols. The ability of an athlete to produce high forces at high velocity is an important component of the physical performance and functional capacity. There is no agreement in the literature over the definition of power. However, power has been defined as the product of force (or torque) and velocity, ie, rate of doing work (Thomas et al 1997). It is of two types, aerobic or endurance and anaerobic.

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According to Brukner and Khan (2001), power is the equivalent of explosive strength. Young and Bilby (1993) have used the term "speed-strength" synonymous with power. Paavolaienen et al (1999) have suggested that muscle power is the ability of neuromuscular system to produce power during maximal exercise when glycolytic and oxidative energy production is high and muscle contractility may be limited. Schmidtbleicher (1992) has defined power as the ability of neuromuscular system to produce greatest possible impulse in a given time period, which depends on resistance of the load, and organisation of the acceleration. The latter parameter is influenced by the sport played by the athlete. There are others factors as well, which are pertinent for power generation. The exploration of these factors is important for understanding the alterations in the power production under different conditions.

Sample

In the present study an effort was made to employ purposive sampling technique. Purposive sampling technique was employed to collect data from the boys 12 to 18 years of different schools of Punjab. The data of 350 boys ranging in age from 12 to 18 years were collected from different schools of the Punjab. The subjects were divided into 7 age groups i.e. (12, 13, 14,15,16,17 and 18 years). Each group contains 50 subjects.

Aim of the Study

This study is needed to assess the age of high performance athletes well in time. The study can significantly provide cheaper methods to assess the maturity status. This study is also necessary for coaches and sports sciences for the plan of scientific training programmes. The study can play a significant role to recognize the status of children early, late and normal maturers.

Tools and Motor Fitness Variable

Health related physical fitness is defined as the ability to perform strenuous activity without fatigue, showing evidence of traits that limit the risks of developing diseases and disorders which reflects a person's functional capacity. Health and physical fitness is important to everyone and should be stressed by physical educators and medical people alike. (Tancred 1987). American Alliances of Health, Physical Education, Recreation and Dance (AAHPERD) (1980) health related physical fitness tests were used to measure health related physical fitness.

Motor Fitness performance of subjects of age 12 to 18 years at different levels is taken by applying Motor fitness test variable i.e. strength. To check the explosive strength of legs of the Panjab boy's Vertical Jump test is applied.

Test Administration

Vertical Jump (Explosive Strength of Legs)

Equipment

Measuring tape, lime powder, vertical wall and water. A black board 200 cm high and 60 cm wide was fixed on the wall 155 cm above the ground. The board was divided by horizontal lines placed 5 cm apart. The exact height above the ground was written on the board every 10 cm in order to facilitate the reading of the results.

Testing Procedure

In this test the subject with bare feet facing the wall without raising his heels, extends his one arm upward to the maximum level along the scale (marked on the wall). This level is recorded as standing reach of the subject. Then he puts chalk powder on the tips of the fingers of the hand and stands facing toward wall and away 20 cm and parallel to the wall by bending his knees and taking arm swing, he jumps vertically up and makes a mark on the scale with his hand as high as possible. There should be no double jump. Three attempts are given with a little rest period in between and distance is recoded in cm.

Statistical Analysis

'T' ratio was used to find out significance difference between the different age group of school boys of Punjab.

Findings

The findings of the study are discussed as under:

Table -1

MEAN, S.D., Values of Vertical Jump of Boys from age Group 12 to 18 Years During the First Phase of Testing.

Phase-I

Age in Years	Mean (Sec.)	S.D
12	2.174	0.143
13	2.168	0.133
14	2.249	0.110
15	2.434	0.147
16	2.456	0.164
17	2.526	0.109
18	2.557	0.102

Fig-1

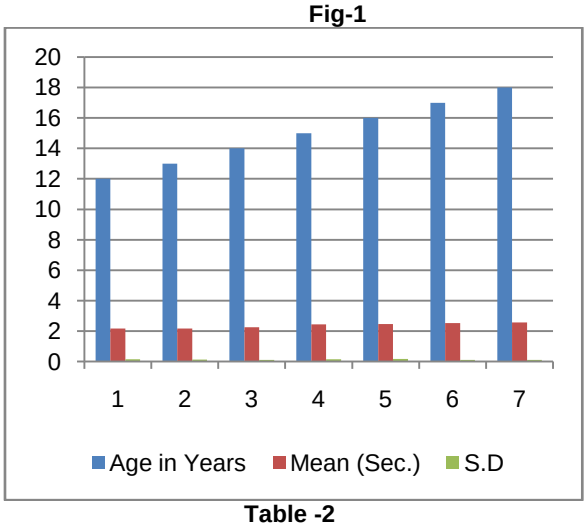

Table -2

MEAN, S.D., Values of Vertical Jump of Boys from Age Group 12 to 18 Years During the Second Phase of Testing.

Phase-II

Age in Years	Mean (Sec.)	S.D
12.5	2.226	0.154
13.5	2.227	0.117
14.5	2.289	0.111
15.5	2.455	0.142
16.5	2.491	0.160
17.5	2.569	0.109
18.5	2.602	0.102

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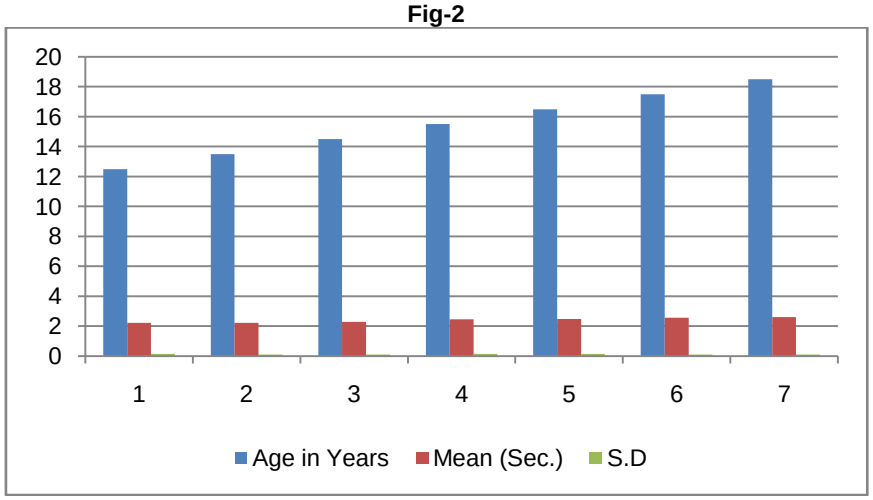
Fig-2

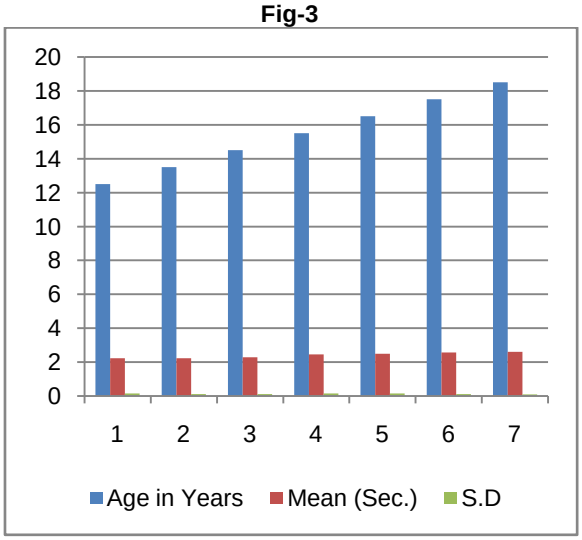


Difference of Means between Developmental Age and Motor Fitness Component (Vertical Jump)

Age in Years	Age in Years	Mean		S.D		't' ratio
Phase-I	Phase-II	Phase-I	Phase-II	Phase-I	Phase-II	
12	12.5	2.174	2.226	0.143	0.154	1.733
13	13.5	2.168	2.227	0.133	0.117	2.332*
14	14.5	2.249	2.289	0.110	0.111	1.816
15	15.5	2.434	2.455	0.147	0.142	0.714
16	16.5	2.456	2.491	0.164	0.160	1.064
17	17.5	2.526	2.569	0.109	0.109	1.963*
18	18.5	2.557	2.602	0.102	0.102	2.250*

S** = Significant at 1% level
S* = Significant at 5% level

Fig-3



Discussion & Conclusion

From the results of above table, it has been observed that for vertical jump test boys showed positive performance from 12 to 14 years of age then at the age of 15 & 16 years no significant performance has been observed, at this time, as plateau in performance has been observed and then again at the age of 17 years & 18 years there was increase in performance level of boys. Maximum increase in performance has been observed in the boys of age group 12 years when they reached the age of 13.5 years, followed by the boys of age group 13 years when they reached to 14.5 years of age. Maximum increase in the performance of the boys of this age may be because they might be in their adolescent period (i.e. 13 to 15 years). This is the period when performance is at its peak. Then there was plateau in performance. Again increase in performance at the age of 17 years and may be due to their revised and improved techniques and tactics.

References

1. Singh S.P., Sidhu L.S. and Singh J. (1992), Skeletal Maturity –Growth Development and Physical Performance.Human Biology Publication Society, Patiala.
2. Singh S.P., Sidhu L.S. and Malhotra P. (1987), Growth Performance of Punjabi Children aged 6-12 years. Annals of Human Biology, 14: 169.
3. Rotch, T.M. (1908), Chronologic and anatomic age in early life. J. Am. Med. Assn., 51: 1197.
4. Wutscherk, H. (1973), Die Bistimmung des biologischen Alters.Theorie Und Prax Keorperkult, 23:159-170.
5. Malina, R.M.(1980). Growth strength and physical performance. In Encyclopedia of physical education, fitness and sports: Training, environment, nutrition and fitness.Stull,G.A. (Ed.). Brighton Publishing Company, Salt Lake City, Utah.