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ORIGINAL ARTICLE

AN EXPERIMENTAL STUDY ON PHYSICAL FITNESS OF THE ATHLETES OF MANIPUR

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Abstract:

This study aimed at finding the differences of physical fitness of the athletes of Manipur. The sample comprised of 200 male athletes selected from four different levels viz. district, state, national and international levels belonging to the games- fencing, soccer, taekwondo, sepak-takraw and judo. The age of the athletes ranged from 17 to 23 years. The AAHPER Youth Fitness Test, comprising of six items that is pull-ups, bent knee sit ups, standing broad jump, shuttle run, 50 mt. dash and 12 minute run/walk, were utilized to measure the various physical components like muscular strength, strength endurance, explosive strength, agility, speed and cardio-respiratory endurance. The scores were recorded as per procedure laid down for each respective test items and analyzed using ANOVA-F statistics. The level of significance was quantified by p-value. The finding concluded that the physical fitness of the athletes vary significantly both at the four levels as well as five different games of the study population at 0.01 probability level.

KEYWORDS:

Athletes, Physical fitness, Games, Levels, Manipur.

INTRODUCTION

Physical fitness is important for an individual at every stage and in every walk of life. It is through physical fitness alone that he can enjoy a better life, which implies good education, satisfying occupation, social status and happiness (Uppal, 1996). Physical fitness is a part of total fitness. It could be defined as the capacity of an individual to perform given physical task involving muscular effort. (Mathews, 1978). According to Barrow (1993), physical health is a readiness or preparedness for performance with special regard for big muscle activity without undue fatigue.

In case the standard of the games and sports in the country is to be improved, adequate stress will have to be laid on the enhancement of physical fitness status of our athletes. Even if an individual possesses high level of general motor ability, but lack of the basic necessary motor qualities, he may still be unable to perform well in a particular sports unless he has develop a specific skill of that sports through long hours of practice. Strength, speed, endurance, agility, reaction time, speed of movement and co-ordination are the general components of the performance in the field of sports and games (Dobbins, 2001). Therefore, the present study is undertaken to investigate the variation of physical fitness of the athletes of Manipur belonging to five different games like fencing, soccer, sepak-takraw, taekwondo and judo at four different levels i.e. district, state national and international.

MATERIALS AND METHOD

Sample: Purposive samples of 200 male athletes were selected from the different parts of Manipur

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belonging to games like fencing, soccer, sepak-takraw, taekwondo and judo. The age of the subject ranged from 17 to 23 years. It was divided into four different groups comprising of 50 athletes each in the district, state, national and international levels. From each level 10 subjects were selected representing altogether 40 subjects from one particular game.

Tools: For the present study, AAHPER Youth Fitness Test was utilized to measure the physical fitness level of the athletes. The test consisted of six items for the measurement of six different physical fitness components. All the test items were administered during their practice session with the help of respective coaches. Performance in each of the test items were recorded as per procedure laid down for each respective test items. Here the details of fitness battery items and components are given below:

1.	Pull- ups	-	Shoulder muscular strength
2.	Bent knee sit ups	-	Strength Endurance
3.	Standing broad jump	-	Explosive strength
4.	Shuttle run	-	Agility
5.	50 meter dash	-	Speed
6.	12 minute run/walk	-	Cardio-respiratory endurance

Table-1: Distribution of physical fitness status according to various levels.

Fitness Components	Levels (50 cases each)					Test value
	District	State	National	International	All Levels	
Muscular strength	9.99 ±3.32	12.09 ±4.11	15.42 ±5.82	22.53 ±7.62	15.01 ±7.23	50.279 P<0.001
Strength endurance	39.48 ±12.14	48.96 ±11.19	49.82 ±10.20	54.64 ±9.94	48.22 ±12.21	16.698 P<0.001
Explosive strength	2.00 ±0.31	2.15 ±0.26	2.13 ±0.28	2.36 ±0.38	2.16 ±0.32	11.996 P<0.001
Agility	9.75 ±0.69	9.44 ±0.64	9.10 ±0.98	8.73 ±0.54	9.21 ±0.87	10.799 P<0.001
Speed	7.51 ±1.18	7.34 ±1.13	7.28 ±0.92	6.72 ±0.70	7.21 ±1.03	5.901 P<0.001
Cardio respiratory endurance	2940.40 ±569.74	3150.34 ±512.05	3170.74 ±500.33	3390.58 ±415.31	3155.51 ±523.61	6.720 P<0.001

Table-2: Distribution of physical fitness status according to various games

Fitness Components	Games (40 cases each)						Test value
	Fencing	Soccer	Taekwondo	Sepak-takraw	Judo	All Levels	
Muscular strength	13.90 ±4.11	14.70 ±7.93	15.22 ±7.31	12.65 ±5.66	18.56 ±9.01	15.01 ±7.23	3.970 P<0.001
Strength endurance	44.05 ±7.67	49.23 ±15.92	56.50 ±7.89	41.58 ±12.88	49.78 ±9.11	48.22 ±12.21	10.711 P<0.001
Explosive strength	2.80 ±0.33	2.35 ±0.23	2.08 ±0.41	2.12 ±0.28	2.19 ±0.29	2.16 ±0.32	5.315 P<0.001
Agility	9.98 ±1.19	8.84 ±0.53	9.21 ±0.67	8.91 ±0.89	9.11 ±0.62	9.21 ±0.87	13.948 P<0.001
Speed	7.51 ±1.18	6.72 ±0.68	7.64 ±1.12	6.65 ±0.66	7.16 ±0.81	7.21 ±1.03	14.145 P<0.001
Cardio respiratory endurance	2808 ±457.50	3590 ±279.09	3242.43 ±510.99	3073.70 ±437.12	3067.8 ±561.54	3155.51 ±523.61	5.912 P<0.001

RESULT AND DISCUSSION

In this empirical research, it is hypothesized to investigate whether there is no variation on physical fitness status of the athletes at four levels- district, state, national and international in one hand and also with five different games - fencing, soccer, sepak-takraw, taekwondo and judo on the other. The physical fitness status is quantified by six components viz. muscular strength, strength endurance, explosive strength, agility, speed, cardio respiratory endurance.

The average score values of the physical health of the athletes are distributed at four levels, shown table 1. While the overall average score of muscular strength of the athletes is 15.01±7.23, its highest score (22.53±7.62) is observed at international level followed by national level (15.42±5.82) and the lowest score (9.99±3.32) is found in district level. This variation is highly significant as witnessed by its F- value (50.279) at 0.001 probability level of significance. In the similar pattern, the average score values of strength endurance exist in ascending order as at district level (39.48±12.40) , state level (48.96±11.19), national level (49.83±10.20) and at international level (54.64±9.94). It is found to be highly significant variation (F= 16.698, P<0.001). The statistically high significant variations are also observed on the average scores of explosive strength and agility of the athletes at different levels as evidenced by their test values – 11.996 (P<0.001) and 10.799 (P<0.001) respectively. As in agility, the average score of speed of the athletes varies (P<0.01) in ascending orders initiating from district (7.51±1.18), state (7.34±1.13), national (7.28±0.92) and international (6.72±0.70) levels. The high significant difference (P<0.001) is also observed on the physical fitness as quantified by the average score of cardio respiratory endurance of the athletes. So from the above finding it is clear that the athletes belonging to the international level has higher fitness status than the other remaining three levels. This could be mainly due to the fact that the international athletes are more exposed in the international arena of sports. Besides, they have got better experience especially in the field of various training programme compared to the other athletes. Thus, the physical fitness of the athletes varies significantly at four different levels in the study population. This supports the study done by Herman (1967) in which there was a significant difference of physical fitness among rural and urban at 0.01 probability levels.

This distribution of average scores of physical fitness components according to five different games are manifested in table 2. The statistically different (F= 3.97, P<0.01) scores on muscular strength is found among the athletes differentiated by the games. Judo players have highest average scores (18.56±9.01) in muscular strength followed by that of taekwondo (15.22±7.31), soccer (14.70±7.93), fencing (13.90±4.11) and the lowest of sepak-takraw (12.65±5.66). In this analysis, the maximum average score of strength endurance is achieved by the athletes of taekwondo (41.58±12.88) is observed on sepak-takraw players. The variation on the average scores of strength endurance is highly significant (F= 10.711)

at 0.001 probability level. Utilizing the classical statistical test – F (ANOVA), the highly significant differences (P<0.001) on physical fitness, quantified by explosive strength, agility, speed and cardio respiratory are also found among the athletes differentiated by five different games. Thus, the present findings have shown that the physical fitness status of the athletes in the population varies highly significantly according to five games under study.

CONCLUSION

From the above findings the following conclusion can be made:

1 The physical fitness status of the athletes of Manipur varies significantly at four different levels that is district, state, national and international level.
2.The physical fitness status of the athletes also varies significantly at five different games viz. fencing, soccer. Taekwondo, sepak-takraw and judo.

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