

A COMPARATIVE STUDY OF SPEED AND ENDURANCE AMONG NATIONAL AND STATE LEVEL FEMALE GYMNASTS

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Abstract

The purpose of this study was to compare the speed and endurance differentials between national and state level female gymnasts. To achieve this purpose of study, only forty female gymnasts between the age group of 13-25 were selected through purposive sampling technique (non probability sampling technique) from Punjab state. They were twenty national level female gymnasts and twenty state level female gymnasts to find out the deference in both groups with respect to their speed and endurance. Youth physical fitness test were used to measure their fitness level. One way ANOVA (analysis of variance) statistical techniques used to analyse the scores. The results of the investigation showed highly significant in both variables of speed and endurance which were tested on 0.05 level of significance.

Keywords: Speed, Endurance and Gymnasts.

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 exercise, correct nutrition and enough rest. It is an important part of life. 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. These days, 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 hypo kinetic diseases, and to meet emergency situations. A component of physical fitness The President's Council on Physical Fitness and Sports a study group sponsored by the government of the United States declines to offer a simple definition of physical fitness. Instead, it developed the following chart: A comprehensive fitness

program tailored to an individual will probably focus on one or more specific skills. In sports physical fitness is the combination of five main components (speed, strength, endurance, agility and flexibility) it also includes co-ordination and stability. The good working ability of the systems of human body appropriately performs any work or skill in daily routine and in any sports or games. All sports performances depend upon the physical fitness components. These components are the base of any performance either team games or individual games. In artistic or rhythmic gymnastics all components of physical fitness are used. Every component develops according to the need/demand of the particular skill. American Alliance for Health, Physical Education and Recreation youth physical fitness test (1965) Physical fitness is the ability to carry out daily tasks with vigour and alertness without undue fatigue and with ample energy to enjoy leisure time pursuit and meet unforeseen emergencies with components of strength, endurance ability and speed-endurance. Judokas' and Karatekas' performance can predict on the basis of physical fitness. These all can improve with regular exercise. Shergill et.al, (1992) this study was conducted to observe the contribution of selected physical fitness components in predicting the hockey playing ability. To evaluate the individual contribution of each components in the prediction of game performance .Forty three women hockey players having age of 17 to 22 years were selected as the subjects of the study. Seven motor fitness components were selected which contributed directly to the performance factors. It was based on the assessment of three judges. The study shows that the hockey performance was significantly related to speed, endurance, agility and power where as strength, left hand grip strength, right hand grip strength and trunk flexion had no significant relationship. Multiple correlation showed that 60% variability in hockey playing ability can be attributes to the selected physical fitness components. Multiple regressions showed that speed, endurance, agility and power contributes significantly in predicating of hockey playing ability. It may be concluded that it is possible to predict hockey playing

ability on the basis of selected physical fitness components. Simarjeet et.al, (2008) conduct a study was to find out the difference in selected anthropometric and fitness variables in Basketball players of selected age groups. The subjects were divided into 16 years, 17 years and 18 years age groups. In addition to height and weight measurements, standing broad jump, standing vertical jump, 20 meter run, 6x 10 meter shuttle run and 1500 meter run fitness tests were used to collected data? A difference, in mean values, has been found in adjacent age groups. A significant difference in height and weight variables and a non-significant difference among selected groups, in fitness variables, have been observed. Gymnastics is one of the most popular and oldest sports. It is known as the mother of all games. It has been a part of "the games" since ancient times. The Greeks used gymnastics as training for war. Activities like jumping, running, discus throwing, wrestling, and boxing helped develop the muscles needed for hand-to-hand combat. It is been 2000 years old but as a competitive sport it is 100 years old. As the Roman Empire ascended, Greek gymnastics was less turned into military training. In 393 AD the Emperor Theodosius abolished the Olympic Games completely. The games had become corrupt, and gymnastics, along with other sports declined. The last Olympiad held in 776 BC and gymnastics was also been part of the last ancient Olympic games. Gymnastics was developed from fitness and beauty practices used by the ancient Greeks, which also included skills for mounting and dismounting a horse, and circus performance skills. Then the term implied exercise taken by men in a gymnasium, a venue for intellectual and physical education.

Objectives of the Study

The purpose of the study was to compare the speed and endurance between state and national level female gymnasts with respect to their performance.

Method of the Study

The study comprises the list of state and national level female gymnasts of the Punjab state. Forty female gymnasts selected through the purposive sampling technique (non probability sampling technique) and further divided into two groups known as state level female gymnast and national level female gymnasts each group have twenty state levels gymnasts and twenty national level gymnasts. The criteria of the national and state level female gymnasts were based upon their national and state level certificates, which certified the criteria of both groups. On these base two

groups of national and state level female gymnasts have been taken for this research problem.

Variables

Following variable were selected

- (a) Speed
- (b) Endurance

The speed and endurance was measured by 50m dash and 1000m run respectively by AAHPER youth fitness test constructed by LNUPE (2010).

Statistical Technique of the Study

In this research problem there were two independent groups one were national level gymnasts another were state level gymnasts and researcher was compared them in respect to their speed and endurance to check which group have more and less speed and endurance, so researcher was used one way ANOVA (analysis of variance) with descriptive analysis statistical technique.

Results and Discussion of the study

Table No. 1
TABLE SHOWING COMPARISON OF NATIONAL AND STATE LEVEL FEMALE GYMNASTS IN RELATION TO SPEED.

Female Gymnast	Mean	SD	df	F
State Level	11.11	.90	1	28.36**
National Level	9.84	.58	38	

**Significant at 0.01 levels

The table no.1 shows that there is highly significant difference (df =1, 38, F= 28.36, P>0.01) between state and national level female gymnasts in relation to speed (sec). Whereas the national level gymnasts were found speediest (M=9.84) than state level female gymnast (M=11.11).

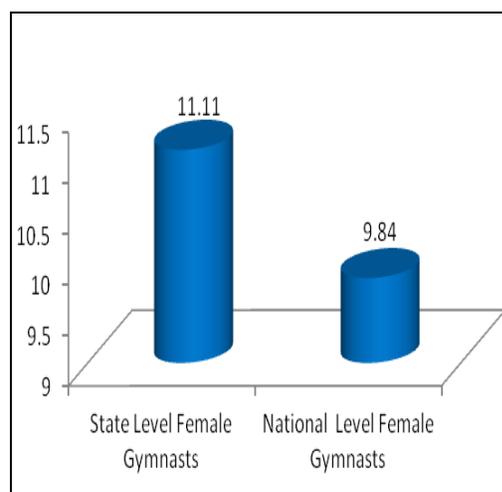


Figure showing comparison of National and State level female gymnasts in relation to speed.

Table No. 2
TABLE SHOWING COMPARISON OF NATIONAL AND STATE LEVEL
FEMALE GYMNASTS IN RELATION TO ENDURANCE.

Female Gymnast	N	Mean	SD	Df	F
State Level	20	7.33	.81	1	21.15**
National Level	20	5.99	1.02	38	

**Significant at 0.01 levels

In table no. 2 shows the highly significant difference ($F_{1, 38} = 21.15, P > 0.01$) between state and national level female gymnast's for endurance (min). Whereas the national level gymnasts were found high endurance capacity ($M=6.00$) than state level female gymnasts ($M=7.33$).

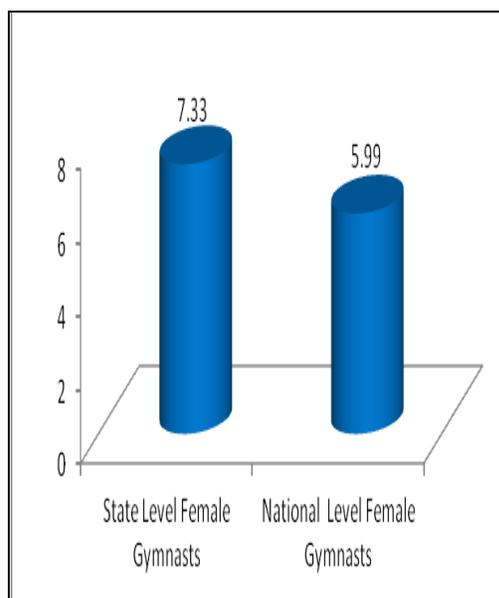


Fig. No. 2: Figure showing comparison of National and State level female gymnasts in relation to endurance.

Conclusion

In the present study the investigator has tried to find out the deference between State and National level female gymnasts in relation to their speed and endurance. Keeping the results and discussion in "view, following conclusions may be drawn: Results shows that there is highly significance difference is found in both physical

fitness variables in both groups. National level female gymnasts were found more physically fit in speed and endurance than the State level female gymnasts.

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